NASA Technical Paper 1906

July 1982

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I - Properties in SI Units

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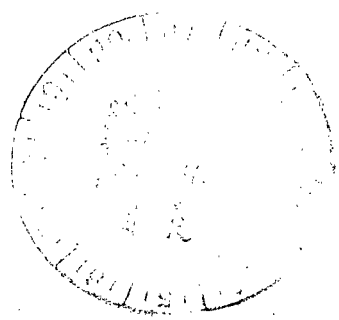

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Thermodynamic and Transport Combustion Properties of Hydrocarbons With Air

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National Aeronautics
and Space Administration

**Scientific and Technical
Information Branch**

Contents

Summary

Thermodynamic and transport combustion properties have been calculated for a wide range of conditions for the reaction of hydrocarbons with air. Three hydrogen-carbon atom ratios (H/C = 1.7, 2.0, 2.1) were selected to represent the range of aircraft fuels. For each of these H/C ratios, combustion properties were calculated for the following conditions:

Equivalence ratio: 0, 0.25, 0.5, 0.75, 1.0, 1.25
Water-dry air mass ratio: 0, 0.03
Pressure, kPa: 1.01325, 10.1325, 101.325, 1013.25, 5066.25 (or in atm: 0.01, 0.1, 1, 10, 50)
Temperature, K: every 10 degrees from 200 to 900 K; every 50 degrees from 900 to 3000 K
Temperature, °R: every 20 degrees from 360° to 1600° R; every 100 degrees from 1600° to 5400° R

The properties presented are composition, density, molecular weight, enthalpy, entropy, specific heat at constant pressure, volume derivatives, isentropic exponent, velocity of sound, viscosity, thermal conductivity, and Prandtl number. Property tables are based on compositions that were calculated by assuming both (1) chemical equilibrium (for both homogeneous and heterogeneous phases) and (2) constant compositions for all temperatures. Properties in SI units are presented in this report for the Kelvin temperature schedules, and the corresponding compositions are presented in part II (TP-1907). Properties in U.S. customary units are presented in part III (TP-1908) for the Rankine temperature schedules, and corresponding compositions are presented in part IV (TP-1909).

Introduction

This report was written at the request of a committee of the Society of Automotive Engineers, SAE Committee S-15 (ref. 1), whose responsibility is engine performance presentation for digital computers. Upon reviewing the status of thermodynamic mixture data in use by the aircraft industry, Committee S-15 recommended the preparation of a standard reference for hydrocarbon-air combustion product compositions and corresponding thermodynamic and transport mixture properties for use in aircraft engine design and analysis.

At present, each industry member has his own thermodynamic and transport property data, and thus each member may arrive at different calculated results. There is no overall reference available by which these differences in calculated results can be evaluated when cross comparisons are required. The need for cross comparisons arises when an engine is tested by groups such as the engine manufacturer, airframe manufacturer, or various government agencies.

Various tables of mixture properties for hydrocarbons with air currently exist (e.g., refs. 2 to 4). However, these tables do not cover a sufficient range of conditions. For example, the widely used Keenan, Chao, and Kaye tables (ref. 4) do not include the effects of dissociation. They also do not include data for rich combustion or wet air or complete data for more than one hydrogen-carbon ratio fuel. As the trend in engine design (higher pressures, improved materials) leads to higher temperatures, dissociation must be considered. For cooling or for analyzing fuel-rich local regions in afterburners, rich combustion properties may also need to be considered. Some aircraft operations involve water injection or flying through rain, and therefore combustion properties are needed for fuels with wet air.

This report presents combustion product compositions and corresponding thermodynamic and transport mixture properties for the following wide range of conditions:

Equivalence ratio, ER	0, 0.25, 0.5, 0.75, 1, 1.25
Hydrogen-carbon atom ratio, H/C	1.7, 2.0, 2.1
Water-dry air mass ratio, w/a	0, 0.03
Pressure, P, kPa (atm)	1.01325, 10.1325, 101.325, 1013.25, 5066.25 (0.01, 0.1, 1, 10, 50)
Temperature, T, K	Every 10 deg from 200° to 900°; every 50 deg from 900° to 3000°
Temperature, T, °R	Every 20 deg from 360° to 1600°; every 100 deg from 1600° to 5400°

A symbol list is given in appendix A. Properties in SI (metric) units are presented in this report for the Kelvin temperature schedules, and the corresponding compositions are presented in part II (TP-1907). Properties in U.S. customary (engineering) units are presented in part III (TP-1908) for the Rankine temperature schedules, and corresponding compositions are presented in part IV (TP-1909). The properties are density, molecular weight, enthalpy, entropy, specific heat at constant pressure, volume derivatives, isentropic exponent, velocity of sound, viscosity, thermal conductivity, and Prandtl number. The assumptions on which the calculations are based are discussed in the text. Also given are the sources of thermodynamic and transport properties of the individual species, the assumed composition of air, and physical and chemical constants. Equilibrium compositions and thermodynamic

mixture properties were obtained by the method of reference 5. Transport mixture properties were obtained by the method of reference 6. The programs of references 5 and 6 were modified somewhat, and several new subroutines were written to generate the tables in this series of reports.

Calculation of Combustion Products

The usefulness of theoretical thermodynamic and transport properties in predicting results of physical processes depends to a large extent on how closely the assumptions used in the calculations approximate physical reality. In some cases significantly different property values may be calculated for different assumptions. In this report property data are calculated for three different assumptions concerning combustion compositions. These assumptions are (1) constant composition for all temperatures and pressures, (2) chemical equilibrium with only homogeneous gas-phase species present, and (3) chemical equilibrium with heterogeneous-phase species.

Some properties, such as specific heat and other thermodynamic derivatives, depend not only on assumptions concerning composition but also on assumptions concerning the rate of change of composition with respect to temperature and pressure. Two assumptions used in this report concerning the rate of change of composition are discussed in later sections on thermodynamic derivatives.

Equilibrium Compositions

Equilibrium compositions were obtained by the free-energy minimization method described in reference 5. The method of reference 5 assumes that all gases are ideal and that interactions among phases can be neglected. Initially the following 55 gaseous species and 3 condensed species were considered in the equilibrium calculations: Ar, C, C(s), CH, CH_2, CH_2O, CH_3, CH_4, CN, CNN, CN_2, CO, CO_2, C_2, C_2H, C_2H_2, C_2H_4, C_2H_6, C_2N, C_2N_2, C_2O, C_3, C_3O_2, C_4, C_4N_2, C_5, H, HCN, HCO, HNCO, HNO, HNO_2, HNO_3, HO_2, H_2, H_2N_2, H_2O, H_2O(l), H_2O(s), H_2O_2, N, NCO, NH, NH_2, NH_3, NO, NO_2, NO_3, N_2, N_2H_4, N_2O, N_2O_4, N_2O_5, N_3, O, OH, O_2, and O_3.

For the lean to stoichiometric conditions in this report, equilibrium calculations show that only the following 15 gaseous species occur with mole fractions greater than 0.000005 for at least some of the temperatures given: Ar, CO, CO_2, H, HO_2, H_2, H_2O, N, NO, NO_2, N_2, N_2O, O, OH, and O_2. For the rich equivalence ratio ER of 1.25, two additional gaseous species with mole fractions greater than 0.000005 also are present: CH_4 and NH_3. These 17 gaseous species were used to generate the tables based on equilibrium compositions with only gaseous species present.

For two conditions in this report, equilibrium calculations show the system to be heterogeneous. One condition is low temperatures (200 to 440 K) where condensation of gaseous water may occur, producing either ice or liquid water (H_2O(s) or H_2O(l)). A second condition is the rich equivalence ratio ER of 1.25, where graphite (C(s)) may also be present at lower temperatures. Some mixture properties (such as isentropic exponent, velocity of sound, viscosity, and thermal conductivity) are difficult to define unambiguously for heterogeneous-phase mixtures. It was therefore decided to prepare separate tables for those conditions where heterogeneous-phase compositions are involved. Table V summarizes the various types and numbers of property tables in this report, which are based on various assumptions concerning compositions. More details on the contents of these tables are given in the section Discussion of Combustion Properties (Tables A to E).

Constant Compositions

For equivalence ratios ER less than or equal to 1 (lean to stoichiometric) the following reaction for a pseudohydrocarbon CH_Y with air (where Y is the H/C atom ratio) can be written by assuming that the combustion products are CO_2, H_2O, N_2, O_2, and Ar:

$$CH_Y + \alpha(O_2 + 3.727587\ N_2 + 0.0447068\ Ar + 0.0015228\ CO_2 + \beta H_2O)$$

$$\longrightarrow (1 + 0.0015228\ \alpha)CO_2 + [(Y/2) + \alpha\beta]H_2O + 3.727587\ \alpha N_2 + [\alpha - 1 - (Y/4)]O_2 + 0.0447068\ \alpha Ar \qquad (1)$$

The parenthetical quantity on the left side of equation (1) is the composition of dry air (as given in the section Air Composition) plus water. The value of β can be determined from the assigned water-dry air mass ratio w/a. In this report w/a has two values, 0 for dry air and 0.03 for wet air. The corresponding values of β in equation (1) are 0 and 0.2302622. The relationship between α, Y, and the equivalence ratio ER is $\alpha = (4 + Y)/4$ ER. Thus, for example, for $Y = 2$ and ER = 1, α equals 1.5. These values in the reaction equation (1) give the following reaction products for $\beta = 0$:

$1.002284\ CO_2 + H_2O + 5.591381\ N_2 + 0.067060\ Ar$

For $\beta = 0.2302622$, H_2O has a coefficient of 1.345339. These products reduce to the following mole fractions:

Product	w/a = 0	w/a = 0.03
	Composition, mole fraction	
CO_2	0.13083	0.12519
H_2O	.13054	.16805
N_2	.72988	.69839
Ar	.00875	.00838

These compositions for $w/a = 0$ appear in table 10A; those for $w/a = 0.03$ appear in table 26A.

Equations for Calculating Mixture Properties

The equations used to obtain the thermodynamic and transport mixture properties presented in this report are given in this section. Some mixture properties, such as density, enthalpy, molecular weight, and viscosity, depend on composition only. Entropy depends on composition and pressure. The assumptions concerning the calculation of composition have been discussed in a previous section. Other properties, such as thermodynamic derivatives and thermal conductivity, depend not only on composition but also on assumptions concerning the change of composition during some process in which temperature, pressure, or some other thermodynamic state functions may be changing.

The two assumptions used in this report to calculate change of composition with respect to temperature or pressure are (1) instantaneous change of compositions to the new equilibrium condition, referred to in this report as "reacting compositions" and (2) zero change of compositions, referred to in this report as "frozen compositions." As was stated previously, certain parameters are difficult to define unambiguously for heterogeneous-phase mixtures. For this reason, some parameters of heterogeneous systems (tables C and E) are based on heterogeneous compositions, and others are based on compositions that have been normalized to the gas phase only. The parameters calculated for heterogeneous- and gas-phase compositions are as follows:

Properties based on heterogeneous compositions	Properties based on compositions normalized to gas phase only
Density	Density
Enthalpy	Molecular weight
Entropy	Viscosity
Molecular weight	Volume derivatives
Specific heat	Specific heat
	Isentropic exponent
	Velocity of sound
	Thermal conductivity
	Prandtl number

Note that density, molecular weight, and specific heat are given for both the heterogeneous mixture and the mixture normalized to the gas phase only. The gas-phase values for density and molecular weight are the appropriate ones for the equation of state for gases given in the next section.

Equation of State for Gases

In this report it is assumed that all gases are ideal and that interactions among phases can be neglected. The equation of state for a gaseous mixture is then

$$PV_g = N_g RT \tag{2a}$$

or

$$Pv_g = n_g RT \tag{2b}$$

where

$$v_g = \frac{V_g}{W_g}$$

and

$$n_g = \frac{N_g}{W_g}$$

and where P is the pressure (N/m^2), V_g is the volume of the gas (m^3), N_g is the moles of the gas (kg mol), R is the gas constant, T is the temperature (K), v_g is the specific volume of the gas (m^3/kg), n_g is the moles of the gas per unit mass (kg mol/kg), and W_g is the mass of the gas (kg).

Equation (2) applies only to gas-phase species even for those conditions where condensed species also exist. Note therefore that equation (2) is not identical with the equation of state of reference 5 when condensed species are present. In reference 5 the volume of the condensed species is taken to be zero, and the weight (but not the number of moles) of the condensed species is included in calculating the density and molecular weight of the mixture. The effect that these differences in definition make on the calculated values of density and molecular weight is discussed in the section Table C Properties.

Physical Properties

For heterogeneous mixtures two sets of values are given in tables C and E for both density and molecular weight. One set of values is for the gas phase only; the other set of values is for the entire mixture.

Molecular weight. – Two alternative definitions will be given for the molecular weight of the gas phase only M_g. One definition is in terms of the mole fraction of the combustion species x_j, which can be defined as

$$x_j = \frac{n_j}{\sum_{j=1}^{NS} n_j} \tag{3}$$

where the n_j is the number of moles of species j per unit mass of the mixture (and denotes the composition variables of ref. 5) and NS is an index indicating the total number of species present including both gas- and condensed-phase species. Molecular weight M_g is defined as

$$M_g = \frac{\sum_{j=1}^{NG} x_j M_j}{\sum_{j=1}^{NG} x_j} \tag{4a}$$

where M_j is the molecular weight of species j and NG is an index indicating the number of gases present. For heterogeneous mixtures the denominator of equation (4a) is less than 1. Alternatively M_g can be defined as the reciprocal of n_g appearing in equation (2b).

$$M_g = \frac{1}{n_g} \tag{4b}$$

For heterogeneous mixtures the molecular weight of the mixture M is defined as

$$M = \sum_{j=1}^{NS} x_j M_j \tag{5}$$

where

$$\sum_{j=1}^{NS} x_j = 1 \tag{6}$$

Density. – The density of the gas phase ρ_g (kg/m^3) can be defined as the reciprocal of v_g appearing in equation (2b).

$$\rho_g = \frac{1}{v_g} \tag{7}$$

An expression for the density of heterogeneous-phase mixtures ρ (kg/m^3), given in equation (11), can be derived as follows. By definition, density is weight per unit volume.

$$\rho = \frac{W}{V} = \frac{W}{V_g + V_c} = \frac{1}{v_g w_g + v_c w_c} \tag{8}$$

where

$$v_c = \frac{V_c}{W_c},\ w_g = \frac{W_g}{W},\ w_c = \frac{W_c}{W}$$

and where v_c is the specific volume of the condensed phase (m^3/kg), W is the mass of the heterogeneous mixture (kg), V is the volume of the heterogeneous mixture (m^3), W_c is the mass of the condensed phase (kg), V_c is the volume of the condensed phase (m^3), W_g is the mass of the gas phase (kg), V_g is the volume of the gas phase (m^3), w_c is the mass fraction of the condensed phase, and w_g is the mass fraction of the gas phase. To obtain the denominator of the last expression in equation (8), v_g is obtained from equation (2b). The other terms can be expressed as follows:

$$w_g = \frac{\sum_{j=1}^{NG} x_j M_j}{\sum_{j=1}^{NS} x_j M_j} = \frac{M_g}{M} \sum_{j=1}^{NG} x_j \tag{9}$$

$$v_c w_c = \sum_{j=1}^{NC} v_j w_j = \frac{1}{M} \sum_{j=1}^{NC} v_j x_j M_j = \frac{1}{M} \sum_{j=1}^{NC} \frac{x_j M_j}{\rho_j} \tag{10}$$

where ρ_j is the density of species j (kg/m^3) and NC is an index indicating the number of condensed species present. When the expressions in equations (9) and (10) are substituted into equation (8), it becomes

$$\rho = \frac{M}{\frac{RT}{P}\sum_{j=1}^{NG} x_j + \sum_{j=1}^{NC} \frac{x_j M_j}{\rho_j}} \tag{11}$$

When only gases are present (NC = 0), equation (11) reduces to the same form as equation (2b).

Thermodynamic Properties

Equations are given in this section for only two properties: enthalpy and entropy. Equations for other properties such as specific heat are given in the sections on thermodynamic derivatives.

Enthalpy. – The expression for enthalpy is

$$h = \sum_{j=1}^{NS} n_j (H_T^o)_j = \frac{\sum_{j=1}^{NS} x_j (H_T^o)_j}{M} \tag{12}$$

where h is the enthalpy of the mixture (J/g) and $(H_T^o)_j$ is the standard-state enthalpy for species j (J/kg mol).

Entropy. – The expression for entropy is

$$s = \sum_{j=1}^{NS} n_j S_j = \frac{\sum_{j=1}^{NS} x_j S_j}{M} \tag{13}$$

where

$$S_j = \begin{cases} (S_T^o)_j - R \ln\left(\dfrac{x_j}{\sum_{j=1}^{NG} x_j}\right) - R \ln P_{atm} & j = 1, \ldots, NG \\ (S_T^o)_j & j = NG+1, \ldots, NS \end{cases} \tag{13a}$$

and where s is the entropy of the mixture (J/kg K), $(S_T^o)_j$ is the standard-state entropy of species j (J/kg mol K), and P_{atm} is the pressure in atmospheres.

Thermodynamic Derivatives for Reacting Compositions

All thermodynamic first derivatives can be expressed in terms of any three independent first derivatives. The Bridgman tables, as tabulated for example in reference 7, express first derivatives in terms of $(\partial V/\partial T)_P$, $(\partial V/\partial P)_T$, and $(\partial h/\partial T)_P \equiv c_p$.

In the section Calculation of Combustion Products it was pointed out that various assumptions can be used in calculating reaction compositions. In the calculation of thermodynamic derivatives, such as specific heat, additional assumptions can be used to specify the rate of change of composition with respect to temperature and pressure. In this report, as a result of various assumptions concerning compositions and rate of change of composition, several values of specific heat and other derivatives can be found in the tables for the same conditions of temperature, pressure, and equivalence ratio.

Specific heat at constant pressure. – The following expression is obtained from the equation (12) definition of enthalpy in terms of n_j:

$$c_p \equiv \left(\frac{\partial h}{\partial T}\right)_P = \sum_{j=1}^{NS} n_j (C_p^o)_j + \sum_{j=1}^{NS} (H_T^o)_j \left(\frac{\partial n_j}{\partial T}\right)_P \tag{14}$$

where c_p is the specific heat at constant pressure (J/kg K) and $(C_p^o)_j$ is the heat capacity of species j (J/kg mol K). The composition derivatives are obtained by the method of reference 5.

If one assumes that a change in temperature produces a change in composition (reacting compositions), both terms on the right side of equation (14) contribute to specific heat. However, if one assumes that compositions remain fixed with changes in temperature (frozen compositions), only the first term contributes.

In addition to the two possible values of specific heat that may be obtained by means of equation (14), two additional values are given in this report for heterogeneous mixtures. As will be discussed in the section Gas-Phase Transport Properties, the transport mixture properties of viscosity and thermal conductivity are calculated in this report for the gas phase only. Therefore before calculating transport mixture properties, equilibrium compositions for heterogeneous mixtures are first normalized to gas-phase compositions only. To have a specific heat consistent with the other transport properties, additional values of specific heat are calculated for compositions normalized to gas-phase compositions only. In this case specific heat becomes

$$(c_p)_g = \sum_{j=1}^{NG} n_j (C_p^o)_j + \sum_{j=1}^{NG} (H_T^o)_j \left(\frac{\partial n_j}{\partial T}\right)_P \tag{15}$$

Note that equation (15) differs from equation (14) in that the summation index in equation (15) is for gases only and the n_j are relative to the mass of gases only.

Volume derivatives. – These derivatives are calculated for gas-phase compositions only. When heterogeneous-phase compositions are present, mole fractions are first normalized to gases only before the volume derivatives are calculated. From equation (2b)

$$\left(\frac{\partial \ln v_g}{\partial \ln T}\right)_P = 1 + \left(\frac{\partial \ln n_g}{\partial \ln T}\right)_P \tag{16}$$

$$\left(\frac{\partial \ln v_g}{\partial \ln P}\right)_T = -1 + \left(\frac{\partial \ln n_g}{\partial \ln P}\right)_T \tag{17}$$

The derivatives of n_g in equations (16) and (17) are obtained by the matrix methods described in reference 5.

Isentropic exponent and velocity of sound. – In this report only the velocity of sound of a gas is calculated even when the system is heterogeneous. Therefore the isentropic exponent γ_s, which is related to the velocity of sound a, is calculated for the gas phase only. For heterogeneous mixtures, compositions are first normalized to gases only before γ_s is calculated. The isentropic exponent is defined to be

$$\gamma_s \equiv \left(\frac{\partial \ln P}{\partial \ln \rho_g}\right)_S = -\left(\frac{\partial \ln P}{\partial \ln v_g}\right)_S \tag{18}$$

This expression for γ_s is related to the velocity of sound a as follows:

$$a^2 = \left(\frac{\partial P}{\partial \rho_g}\right)_S = \frac{P}{\rho_g}\left(\frac{\partial \ln P}{\partial \ln \rho_g}\right)_S = \frac{P\gamma_s}{\rho_g} \tag{19}$$

By using the equation of state given in equation (2b), the familiar expression for velocity of sound can be obtained.

$$a=\sqrt{\gamma_s n_g RT}=\sqrt{\frac{\gamma_s RT}{M_g}} \tag{20}$$

Specific heat ratio. – The isentropic exponent γ_s is often confused with the specific heat ratio, which is defined to be

$$\gamma \equiv \frac{c_p}{c_v} \tag{21}$$

In this report γ is assumed to apply to gases only.

The two "gammas" defined in equations (18) and (21) can be related as follows: From the Bridgman tables of reference 7

$$\left(\frac{\partial \ln P}{\partial \ln v_g}\right)_S = \frac{(c_p)_g}{(c_p)_g\left(\frac{\partial \ln v_g}{\partial \ln P}\right)_T + \frac{Pv_g}{T}\left(\frac{\partial \ln v_g}{\partial \ln T}\right)_P^2} \tag{22}$$

This can be written as

$$\left(\frac{\partial \ln P}{\partial \ln v_g}\right)_S = \frac{(c_p)_g}{(c_v)_g\left(\frac{\partial \ln v_g}{\partial \ln P}\right)_T} \tag{23}$$

where

$$(c_v)_g \equiv \left(\frac{\partial u_g}{\partial T}\right)_V = (c_p)_g + \frac{\frac{Pv_g}{T}\left(\frac{\partial \ln v_g}{\partial \ln T}\right)_P^2}{\left(\frac{\partial \ln v_g}{\partial \ln P}\right)_T} \tag{24}$$

$(c_v)_g$ is the specific heat at constant volume, and u_g is internal energy.

Substituting equation (21) into equation (23) and using the definition of equation (18) give

$$\gamma_s = \frac{-\gamma}{\left(\frac{\partial \ln v_g}{\partial \ln P}\right)_T} \tag{25}$$

The two "gammas" are equal if and only if $(\partial \ln v_g/\partial \ln P)_T = -1$. Note that γ_s, defined by equation (18), is required in equation (20) and not the specific heat ratio, defined by equation (21).

Thermodynamic Derivatives for Frozen Compositions

When composition is frozen during some process in which temperature or pressure is changing, the values of $(\partial n_j/\partial T)_P$ in equations (14) and (15) and $(\partial \ln n_g/\partial \ln T)_P$ and $(\partial \ln n_g/\partial \ln P)_T$ in equations (16) and (17) are all equal to zero. In this situation the following expressions are obtained:

Specific heat at constant pressure. – From equations (14) and (15)

$$c_p = \sum_{j=1}^{NS} n_j (C_p^o)_j = \frac{\sum_{j=1}^{NS} x_j (C_p^o)_j}{M} \tag{26b}$$

$$(c_p)_g = \sum_{j=1}^{NG} n_j (C_p^o)_j = \frac{\sum_{j=1}^{NG} x_j (C_p^o)_j}{M_g \sum_{j=1}^{NG} x_j} \tag{26b}$$

Volume derivatives. – From equations (16) and (17)

$$\left(\frac{\partial \ln v_g}{\partial \ln T}\right)_P = 1 \tag{27}$$

$$\left(\frac{\partial \ln v_g}{\partial \ln P}\right)_T = -1 \tag{28}$$

Isentropic exponent and specific heat ratio. – Substituting equation (28) into equation (25) gives

$$\gamma_s = \gamma \tag{29}$$

Thus, when composition is frozen, the isentropic exponent and the ratio of specific heats are equal.

Gas-Phase Transport Properties

The equations describing the calculation of gas-phase transport properties of mixtures are given on pages 23 to 30 of reference 6. Because of the large amount of detail and special terminology used in reference 6 to present these equations, they will not be reproduced here. Only a very simple form of these equations will be given. Note that the method of reference 6 is restricted to the gas phase, and no allowances are made for the effect of condensed species in heterogeneous systems. Only the gaseous species are used in the transport property calculations.

Viscosity. – Viscosity can be written as

$$\eta = \frac{\sum_{j=1}^{NG} x_j \eta_j}{\sum_{j=1}^{NG} x_j} \tag{30}$$

where η is the mixture viscosity and η_j are variables whose values are obtained by the solution of a set of simultaneous algebraic equations described in reference 6 (pp. 23 and 24). The η_j in equation (30) are not the viscosities of the pure species.

Thermal conductivity. – Thermal conductivity consists of several terms that can be written as

$$\lambda = \lambda_{trans} + \lambda_{int} + \lambda_{reaction} = \lambda_{frozen} + \lambda_{reaction} \tag{31}$$

where λ is the mixture thermal conductivity and where the subscripts refer to the translational, internal, reaction, and frozen contributions to thermal conductivity. The equations for obtaining these contributions are given in reference 6 (pp. 24 to 30). Values for λ_{frozen} are given in tables B and D under the heading FROZEN COMPOSITIONS; values for λ are given under the heading REACTING COMPOSITIONS.

Prandtl number. – Prandtl number is defined as

$$\mathrm{Pr} = \frac{c_p \eta}{\lambda} \tag{32}$$

In tables B and D the values of Prandtl number under the headings REACTING COMPOSITIONS and FROZEN COMPOSITIONS are obtained by means of equation (32) with the appropriate values for c_p and λ together with the value given for η.

Equivalence Ratio and Chemical Equivalence Ratio

A common definition of equivalence ratio ER in engineering practice is

$$\mathrm{ER} = \frac{(f/a)}{(f/a)_{\mathrm{stoich}}} \tag{33}$$

Another equivalence ratio that is directly related to the combining ability of atoms with positive and negative valences (and is therefore referred to in this report as the chemical equivalence ratio) can also be defined (ref. 5, p. 59). For the chemical systems considered in this report this chemical equivalence ratio specializes to

$$r = \left| \frac{4\mathrm{C} + \mathrm{H}}{-2\mathrm{O}} \right| \tag{34}$$

where r is the chemical equivalence ratio. In equation (34) C, H, and O refer to the relative number of all carbon, hydrogen, and oxygen atoms in the fuel and oxidizer combined. Carbon, hydrogen, and oxygen have been assigned valences of $+4$, $+1$, and -2, respectively. The computer program of reference 5 gives the option of specifying either ER or r.

For many combinations of fuel and oxidizer ER and r are identical numerically. This occurs when all the positive valence atoms are in the fuel and all the negative valence atoms are in the oxidizer. Consider, for example, the following two reactions of CH_2 with O_2 for which stoichiometry requires 3/2 O_2 for CH_2:

Reactants	r, eq. (34)	ER, eq. (33)
$CH_2 + 3/2\ O_2$	$\left\lvert \frac{4+2}{-2 \times 3} \right\rvert = 1$	$\left(\frac{\text{wt } CH_2}{\text{wt } 3/2\ O_2}\right) \Big/ \left(\frac{\text{wt } CH_2}{\text{wt } 3/2\ O_2}\right)_{\text{stoich}} = 1$
$CH_2 + 2\ O_2$	$\left\lvert \frac{4+2}{-2 \times 4} \right\rvert = \frac{3}{4}$	$\left(\frac{\text{wt } CH_2}{\text{wt } 2\ O_2}\right) \Big/ \left(\frac{\text{wt } CH_2}{\text{wt } 3/2\ O_2}\right)_{\text{stoich}} = \frac{3/2}{2} = \frac{3}{4}$

Thus it can be seen that r and ER are identical for this example for both stoichiometric and nonstoichiometric conditions. However, in cases where the fuel has some negative valence atoms, such as in CH_3OH, or where the oxidizer has some positive valence atoms, such as in H_2O_2, the two definitions of equivalence ratio are identical only for stoichiometric conditions. Inasmuch as the air we have selected (see the section Air Composition) contains some CO_2 and wet air also contains some H_2O, the values of the two equivalence ratios are not identical except at stoichiometric conditions. The correspondence of ER and r for the values presented in this report are as follows for fuels with H/C = 2 with dry and wet air.

ER	r	
	Dry air	Wet air
0	0.0015	0.1045
.25	.2511	.3284
.5	.5008	.5522
.75	.7504	.7761
1.0	1.0	1.0
1.25	1.2496	1.2239

Since there is only a small amount of CO_2 in air, the two sets of values are very close for dry air. However, ER and *r* differ considerably for wet air because of the H_2O.

Sources of Properties

Sources of data are given in this section for physical constants, atomic weights, air composition, thermodynamic data, transport data, and density data of condensed species. Some comparisons and evaluations are made as to the effect of other available data on computed results.

Physical Constants

Table I presents a summary of several physical constants recommended in references 8 to 11 during the period 1955 to 1973. These constants are used in statistical mechanics calculations of thermodynamic data. As can be seen from an examination of table I, these constants have changed very little since 1955, and the different values shown would have only a very small effect on calculated thermodynamic properties. The most recent value for the universal gas constant, recommended in reference 11, was used in this report.

Atomic Weights

The latest values of atomic weights available for use in this report are the 1977 international atomic weights (ref. 12). For the five elements in this report, these values are

Element	1977 International atomic weight
C	12.011
H	1.0079
O	15.9994
N	14.0067
Ar	39.948

Table II gives the international atomic weights of these elements for 1940 together with the changes made since then (refs. 13 to 16). As can be seen in table II, even with the change in base in 1961 from O^{16} to C^{12}, the changes in atomic weights for the five elements shown have been relatively minor in the last 40 years.

Air Composition

Dry air. – The dry air composition used in this report is a simplified version of the U.S. Standard Atmosphere, 1976, presented in tables 3 and 15 of reference 17. Below altitudes of about 50 km, the 1976 model for air is the same as the 1962 model (ref. 18) except for trace constituents.

Two values are given in reference 17 for the concentration of CO_2. The percentage by volume of CO_2 is given as 0.0314 in table 3 of reference 17 and as 0.0322 in table 15. The volume composition of the 1976 air model given as table III in this report can be summarized as follows for both values of CO_2:

Constituent gases	Volume, vol %	
Three most abundant (N_2, O_2, Ar)	99.9656	99.9656
CO_2	.0314	.0322
Four remaining monatomics (Ne, He, Kr, Xe)	.0024647	.0024647
Ten remaining species	.000250655	.000250655
Total	99.999715355	100.000515355

For this report air is considered to consist of the four most abundant constituents N_2, O_2, Ar, and CO_2. It seems reasonable to include with argon the concentrations of the other four inert monatomic species. This would give 99.9681 as the volume percentage of N_2, O_2, and Ar. The remaining volume percentage, 0.0319, is taken to be CO_2. This is approximately the average of the two values given in reference 17.

The composition of air selected for this report is given in the following table and is compared with that selected in reference 4:

Constituent	This report	Reference 4
	Composition, mole fraction	
N_2	0.78084	0.7803
O_2	.209476	.2099
Ar	.009365	.0098
CO_2	.000319	------

Wet air. – As was stated in the Introduction, some aircraft operations involve water injection or flying through rain. Therefore combustion properties are included in this report for fuels with wet air as well as with dry air. For each type of air, over 600 pages of combustion properties and compositions are generated. Therefore only one representative wet air composition was selected. Water injection generally involves a weight of water equal to about 1 to 5 percent of the dry air weight. A value of 3 percent water by weight ($w/a = 0.03$) was therefore selected as a representative value for wet air.

The mole fractions of the constituents of this wet air are

Constituent	Composition, mole fraction
N_2	0.744910
O_2	.199837
Ar	.008934
CO_2	.000304
H_2O	.046015

The water in the selected wet air can also be considered to be water vapor in humid air under some conditions. For example, at 1-atm pressure, the amount of water in the selected wet air corresponds to 100 percent humidity at 304.8 K (31.7° C). At temperatures less than 304.8 K the maximum amount of water vapor that air can hold is less than 3 percent by weight. Care should be taken therefore to use the wet-air combustion properties only for appropriate conditions.

Thermodynamic Properties of Pure Species

As indicated in a previous section, 55 gaseous species and 3 condensed species were initially considered in the calculations for chemical equilibrium compositions. Thermodynamic properties were taken from reference 19 for all species except ice ($H_2O(s)$). Inasmuch as data for ice are not available in reference 19, a new table of thermodynamic properties for ice was generated for this report. The details of the sources and processing of the ice properties are given in appendix B.

Of the 55 gaseous species initially considered, only 17 appeared with a mole fraction greater than 5 ppm for any of the conditions in this report, and these are therefore the only gaseous species appearing in parts II and IV. For these 17 gaseous species and the three condensed species, the dates when thermodynamic data sheets for each were last issued in reference 19 are as follows:.

Species	Date last issued by JANAF (ref. 19)
Ar	3/77
C(s)	3/78
CH_4	3/61
CO	9/65
CO_2	9/65
H	3/77
HO_2	9/78
H_2	3/77
$H_2O(s)$	Appendix B
$H_2O(l)$	3/79
H_2O	3/79
N	3/77
NH_3	6/77
NO	6/63
NO_2	6/64
N_2	3/77
N_2O	12/64
O	3/77
O_2	3/77
OH	6/77

Accuracy of properties. – There are currently several ongoing projects in the generation of tables of thermodynamic properties that appear in references such as references 19 (JANAF), 20 (Russian tables), and 21 (TRC). In addition, reference 22 (CODATA) contains recommended values for heats of formation, enthalpy, and entropy at 298.15 K (537° R). In general, for most of the 20 species considered in the final calculations of equilibrium compositions, the agreement among the properties generated or selected by these organizations is quite good. Differences in data for ideal gases may be due to some or all of the following reasons: different form of the partition function, different spectroscopic data, inclusion of excited-state data, inclusion of isotopic effects, different fundamental physical constants and atomic weights, and different heats of formation.

Only seven of the 20 species appear with mole fractions greater than 0.1 for any of the conditions in this report. They are

Species	Maximum mole fraction for any condition in this report
N_2	0.781
O_2	.209
$H_2O(s)$	.153
$H_2O(l)$	.139
H_2O	.131
CO_2	.131
CO	.106

For the five gaseous species, the following table compares the JANAF data used in this report (ref. 19) with the data of reference 20 and gives the effect of differences in data on the mixture enthalpy:

Temperature, T		$H_T^o - H_{298.15}^o$, J/g mol		ΔH_T^o, J/g mol (col. 3 - col. 4)	Maximum mole fraction	Mixture molecular weight	Maximum effect on mixture enthalpy (col. 5) (col. 6)/ col. 7)	
K	°R	Reference 19	Reference 20				J/g	Btu/lb
				H_2O				
1000	1800	25 999	26 063	-64	0.13054	28.906	-0.289	-0.124
2000	3600	72 789	73 062	-273	.12894	28.830	-1.221	-.525
3000	5400	126 549	127 789	-1240	.07463	26.517	-3.490	-1.500
				CO_2				
1000	1800	33 405	33 404	1	0.13083	28.906	0.005	0.002
2000	3600	91 450	91 460	-10	.12662	28.830	-.044	-.019
3000	5400	152 862	152 855	7	.04126	26.517	.011	.005
				CO				
1000	1800	21 686	21 687	-1	0.04010	27.565	-0.001	-0.001
2000	3600	56 739	56 736	3	.06865	27.559	.007	.003
3000	5400	93 542	93 528	14	.10581	25.906	.057	.025
				N_2				
1000	1800	21 464	21 462	2	0.78082	28.965	0.054	0.023
2000	3600	56 137	56 136	1	.77678	28.961	.027	.012
3000	5400	92 713	92 712	1	.74203	28.309	.026	.011
				O_2				
1000	1800	22 702	22 706	-4	0.20946	28.965	-0.029	-0.012
2000	3600	59 091	59 202	-111	.20529	28.961	-.787	-.338
3000	5400	98 014	98 117	-103	.16109	28.309	-.586	-.252

An examination of this table shows that the maximum effect on enthalpy of the equilibrium mixture is 3.5 J/g (1.5 Btu/lb) and is due to gaseous water at 3000 K (5400° R). The effect of differences in data for other species is generally considerably less than this. Although it is possible that future theoretically calculated thermodynamic data for the species in this report will differ by more than shown in the previous table, it is not expected that they will affect the overall results by more than a few units in either joules per gram or Btu per pound.

In the next table the heat of formation data of references 19 and 22 are compared. Only those species in this report that are found in both references 19 and 22 are listed.

Species	Reference 19		Reference 22
	Heat of formation at 298.15 K		
	cal/g mol	kJ/g mol	kJ/g mol
CO	-26 417	-110.53	-110.63
CO_2	-94 504	-393.52	-393.51
H	52 103	217.999	217.997
$H_2O(g)$	-57 795	-241.814	-241.814
$H_2O(l)$	-68 315	-285.830	-285.830
N	112 975	472.69	472.68
NH_3	-10 970	-45.90	-45.94
O	59 554	249.17	249.17

There is excellent agreement between these two sets of data. No revised values in heats of formation for the species in this report are expected that will affect the results of the calculations in this report more than trivially.

Enthalpy base. – To accommodate the format required in reference 5, heats of formation (and, when applicable, heats of transition) were combined with sensible heats to give assigned enthalpies H_T^o for each species. By definition

$$H_T^o \equiv H_{298.15}^o + (H_T^o - H_{298.15}^o) \tag{35}$$

In reference 5 it was arbitrarily assumed that $H_{298.15}^o = (\Delta H_f^o)_{298.15}$. Equation (35) then becomes

$$H_T^o = (\Delta H_f^o)_{298.15} + (H_T^o - H_{298.15}^o) \tag{36}$$

Both terms on the right side of equation (36) appear in references such as reference 19. In general, $H_T^o \neq (\Delta H_f^o)_T$ for $T \neq 298.15$ K. For reference species, $(\Delta H_f^o)_{298.15} = H_{298.15}^o = 0$. For the chemical system considered in this report the reference species are Ar, C(s), H_2, N_2, and O_2.

Heats of combustion and formation. – Heats of combustion and/or formation for numerous hydrocarbons are available in the literature. To use the program of reference 5, however, input data must be in the form of heat of formation or assigned enthalpy rather than in the form of heat of combustion. Assume a lower heating value for the heat of combustion in Btu per pound (Δh_C) is known for an empirical fuel CH_Y according to the reaction

$$CH_Y + \left(1 + \frac{Y}{4}\right) O_2 = CO_2 + \frac{Y}{2} H_2O + \Delta h_C$$

The value of Δh_C can be converted to a heat of formation (assigned enthalpy) in units of joules by means of the equation

$$h_{\text{fuel}} = h_{CH_Y} = (\Delta H_f^o)_{CO_2} + \frac{Y}{2} (\Delta H_f^o)_{H_2O} + 2.32600\,(M_{\text{fuel}})(\Delta h_C)$$

$$= -393\,522 + \frac{Y}{2} (-241\,814) + 2.32600(12.011 + 1.0079\,Y)(\Delta h_C) \tag{37}$$

If a heat of combustion for some fuel is not known, it can be estimated by means of correlations with various parameters such as analine point, API gravity, product of aniline point and API gravity, and percentage of hydrogen for kerosene fuels or aviation fuels (refs. 23 and 24). The following simple equation relating the lower heat of combustion in Btu per pound to the weight percentage of hydrogen was derived by drawing a straight line through the somewhat scattered data in figure 4 of reference 23 in the range of about 12.5 to 15.5 wt% of hydrogen.

$$\Delta h_C = 15\ 355 + 235(\text{wt\% } H_2) \tag{38}$$

An equation equivalent to equation (38) can be derived to give estimated heats of formation in joules for the empirical fuel CH_Y in terms of the H/C atom ratio Y.

$$\Delta H_f^o = 35\ 503.8 - 29\ 864.6\ Y + 13.0\ Y^2 \tag{39}$$

Estimates for the heat of formation of fuels from equation (39) were used in the program of reference 5 to obtain the combustion temperatures plotted in figure 1. Equation (39) is also used in appendix D.

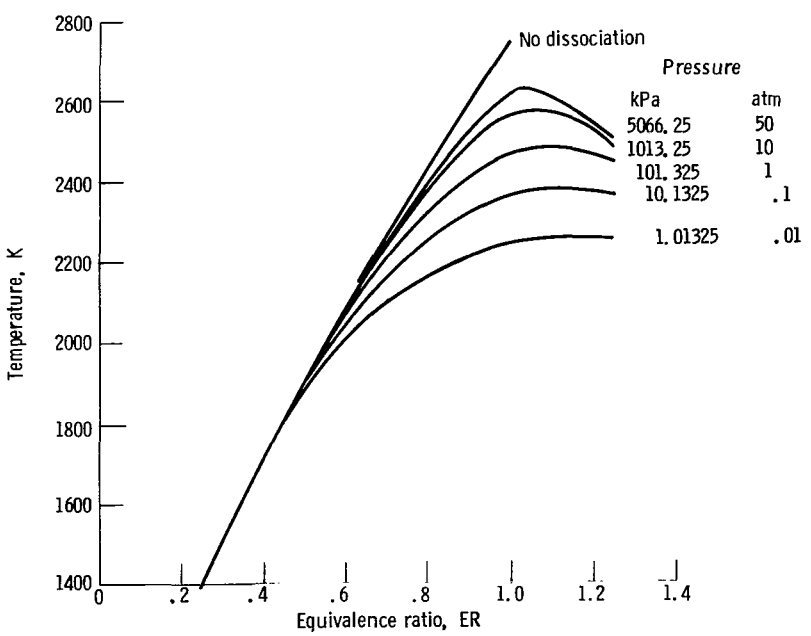

Figure 1. - Combustion temperature as a function of equivalence ratio. Fuel, CH_2; air, dry (800 K); assumed heat of combustion, Δh_C = 43 174 J/kg (18 372 Btu/lb).

Comparison with real gas properties. – Real-gas properties are available in a number of references such as reference 25. The percentage difference between the reference 25 real- and ideal-gas thermodynamic properties for air is shown in the following table:

Property	Temperature, T, K	Pressure, P, kPa (atm)		
		10.1325 (0.1)	101.325 (1)	4053 (40)
		Difference between real and ideal thermodynamic properties of air, percent		
Specific heat at constant pressure	250	0.02	0.23	10.46
	500	.01	.05	1.83
	1000	.10	.10	.45
Enthalpy	250	-0.01	-0.13	-5.16
	500	.00	-.01	-.39
	1000	.01	.01	.23
Entropy	250	-0.03	-0.23	-0.62
	500	.00	.00	-.11
	1000	.00	.00	-.03

As this table shows, the largest differences occur for the conditions of low temperature and high pressure. For most aircraft inlet or combustion applications, however, these two conditions do not occur simultaneously. For example, consider an aircraft at various altitudes isentropically compressing ambient air to various pressures. The resulting temperatures for real and ideal air are shown in the following table:

Initial condition					Final condition after compression					
Altitude		Pressure, P		Temperature, T, K	Compression ratio	Pressure, P		Temperature, T, K		
m	ft	kPa	atm			kPa	atm	Real	Ideal	Difference
0	0	101.325	1	298.15	10	1013.25	10	570.95	570.63	0.32
					40	4053.	40	828.42	826.93	1.49
7115.82	23 300	40.53	.400	267.04	10	405.3	4	513.03	512.87	0.16
					17.5	709.275	7	598.86	598.45	.41
					25	1013.25	10	659.64	659.24	.40
16186.2	53 000	10.1325	.100	241.65	10	101.325	1	465.38	465.15	0.23
					40	405.3	4	681.35	680.94	.41

The initial conditions for this table were obtained from reference 17 for a standard day; the data used to calculate the final conditions were obtained from reference 25. Altitudes were selected to give pressures for which data are tabulated in reference 25. The results of this table show that the difference in the final temperature at the two higher altitudes is less than or equal to 0.4 K but that for surface conditions the difference is less than or equal to 1.5 K.

Transport Properties of Pure Species

Sources of properties. – The following table gives the references used to obtain viscosity and thermal conductivity properties for the pure gaseous species considered in this report.

Species	Reference for viscosity	Reference for thermal conductivity
Ar	37	37
CH_4	6	6
CO	6	6
CO_2	38	[a]6
H	6	6
H_2	38	6
H_2O	39	2
N	6	6
NH_3	6	[b]40
NO	6	6
NO_2	6	6
N_2	28	28
N_2O	6	6
O	6	6
O_2	28	28
OH	6	6

[a]Thermal conductivities above 700 K (1260° R) were increased from 1 to 5 percent on the basis of a re-evaluation of the experimental data.

[b]From a curve through experimental data plotted in ref. 40.

As this table shows, most of the data are from reference 6. Unfortunately, the data in reference 6 are in the form of collision integrals and rotational collision numbers rather than explicitly in the form of viscosity and thermal conductivity. Therefore tables are presented in appendix C for the transport properties of 16 gaseous species considered in this report plus monatomic carbon. Data for HO_2 are not available.

The properties presented in appendix C are for every 100 degrees from 200 to 5000 K. Viscosity is given in units of micropoise (1 poise = 1 g/cm s); thermal conductivity is given in units of microwatts per centimeter per unit Kelvin.

Accuracy of properties. – Experimental transport data are usually available for a considerably shorter temperature range than the 200 to 5000 K (360° to 9000° R) range given in the appendix C tables. Properties were extrapolated to the higher temperatures and may be considerably in error.

The transport property values selected for this report are in excellent agreement with the values selected in references 26 and 27 except for a few species. For example, for N_2, there is excellent agreement at some temperatures but as much as 11 percent difference at other temperatures. Property values for N_2 from several sources are compared in the following table:

Temperature, T, K	Viscosity, μP			Thermal conductivity, μW/cm K	
	This report (from ref. 28)	Reference 38	Reference 26	This report (from ref. 28)	Reference 27
300	179	179	179	259	260
500	260	260	259	383	386
1000	414	417	401	678	631
1500	540	541	512	933	842
2000	650	650	601	1164	1146
2500	---	---	---	1372	1406
3000	---	---	---	1567	1640

Lack of agreement at high temperatures is more to be expected than agreement. For example, according to reference 28, "Most of the data for the thermal conductivity coefficient for both nitrogen and oxygen seem unreliable outside the range of about 150 to 600 K."

Densities of Condensed Species

Densities of the condensed species C(s), $H_2O(s)$, and $H_2O(l)$ are required to obtain the density of the mixture (eq. (11)). No source was found for the density of graphite as a function of temperature from 200 to 800 K (360° to 1440° R), which is the range in which graphite appears in these calculations. Densities for graphite were therefore calculated from a formula involving lattice constants given in reference 29. The formula gave the following results:

Temperature, T		Density, ρ g/cm^3
K	°R	
200	360	2.2734
298.15	537	2.2670
600	1080	2.2478
1000	1800	2.2228

The value at 298.15 K agrees exactly with the value given in reference 21. The calculated densities were used to derive the following equation, which was used in this report

$$\rho_{carbon} = 2.2858 - 0.0000633\ T \tag{40}$$

where T is in Kelvin.

The density of ice is given in reference 30 at one temperature only (ordinary atmospheric temperature). This value, $\rho_{H_2O(s)} = 0.917$ g/cm^3, was used in this report for the temperature range of 200 to 273.15 K (360° to 492° R). The density of liquid water from 273.15 to 423.15 K (492° to 762° R) was taken from reference 21. These values were least squared to obtain the following equation, which is used in this report:

$$\rho_{H_2O(l)} = 0.75257 + 0.0018844\ T - 0.000003575\ T^2 \tag{41}$$

where T is in Kelvin.

Discussion of Combustion Properties (Tables A to E)

Numbering System

The numbers for the combustion property tables consist of a numerical part and an alphabetical part, for example, table 10.3B. The five letters A through E are used to designate five types of tables that differ according to the assumptions made concerning composition. The conditions covered by these tables are summarized as follows:

Table	Type of composition	Equivalence ratio, ER	Temperature range	
			K	°R
A	Constant	≤ 1.0	200 to 3000	360 to 5400
B	Equilibrium (gas phase only)	≤ 1.0	900 to 3000	1600 to 5400
C	Equilibrium (multiphase)	≤ 1.0	200 to 440	360 to 760
D	Equilibrium (gas phase only)	1.25	200 to 3000	360 to 5400
E	Equilibrium (multiphase)	1.25	200 to 800	360 to 1400

The numerical part of the table numbers may consist of a whole number (tables A and C) or a whole number plus one decimal place (tables B, D, and E). The whole number part for all tables depends on the type of air (dry or wet), the H/C ratio, and the equivalence ratio. These numbers are summarized as follows:

Hydrogen-carbon ratio, H/C	Dry air						Wet air					
	Equivalence ratio, ER											
	0	0.25	0.5	0.75	1.0	1.25	0	0.25	0.5	0.75	1.0	1.25
	Whole number part of table numbers (tables A to E)											
Air only	1	---	---	---	---	---	17	---	---	---	---	---
1.7	---	2	3	4	5	6	---	18	19	20	21	22
2.0	---	7	8	9	10	11	---	23	24	25	26	27
2.1	---	12	13	14	15	16	---	28	29	30	31	32

In tables B, D, and E the decimal place is used to designate pressure as follows:

Pressure		Decimal part of table numbers (tables B, D, and E)
kPa	atm	
1.01325	0.01	0.1
10.1325	.1	.2
101.325	1	.3
1013.25	10	.4
5066.25	50	.5

A detailed summary of all table numbers is given in table V. As an example, all table numbers for the conditions of dry air, H/C = 2.0, and ER = 1 start with 10. Thus for these conditions and assumed constant compositions the table number is 10A. The low-temperature equilibrium table number is 10C. The high-temperature equilibrium tables for these conditions are divided into five tables (10.1B, 10.2B, 10.3B, 10.4B, and 10.5B) according to whether the pressure is 1.01325, 10.1325, 101.325, 1013.25, or 5066.35 kPa (0.01, 0.1, 1, 10, or 50 atm).

Temperature Range

To determine a reasonable upper temperature limit for the tables, a number of combustion temperature calculations were run with the program of reference 5. Some of these results are shown in figure 1. The data in figure 1 are for the following conditions: dry air at 800 K, fuel with an atom ratio H/C of 2, equivalence ratios from 0.25 to 1.25, and combustion pressures of 1.01325, 10.1325, 101.325, 1013.25, and 5066.25 kPa (0.01, 0.1, 1, 10, and 50 atm). The heat of combustion for the fuel was estimated by means of equation (38). The results of these calculations showed that $T = 3000$ K (5400° R) was a reasonable upper limit for these tables.

Symbols and Units for Table Headings

Various organizations recommend symbols and units that are not always identical for the same parameters. The units used in the equations in the text are the SI units (metric) given in reference 31. However, for the computer output headings for tables A to E, the units and symbols are primarily those recommended by the Society of Automotive Engineers in references 32 and 33 and summarized in the following table.

Quantity	Symbol		SI units (metric)	
	Text	Tables A to E	Text	Tables A to E
Chemical equivalence ratio	r	CHEM. EQUIV. RATIO		
Conductivity	λ	COND	W/m K	MICRO W/CM K
Specific heat at constant pressure	c_p	CP	J/kg K	J/G K
Density	ρ	DENSITY	kg/m^3	G/CM3
Derivative of logarithm of volume with respect to logarithm of pressure	$(\partial \ln V/ \partial \ln P)_T$	DLVDLP		
Derivative of logarithm of of volume with respect to logarithm of temperature	$(\partial \ln V/ \partial \ln T)_p$	DLVDLT		
Equivalence ratio	ER	EQUIV. RATIO		
Fuel-air mass ratio	f/a	F/A		
Ratio of specific heats	γ	GAM		
Isentropic exponent	γ_s	(GAM)S		
Enthalpy	h	H	J/kg	J/G
Fuel hydrogen-carbon atom ratio	H/C	H/C		
Molecular weight	M	MW		
Pressure	P	P	N/m^2	KPA (also ATM)
Prandtl number	Pr	PRAN		
Entropy	s	ENTROPY	J/kg K	J/G K
Temperature	T	T	K	K
Viscosity	η	VIS	kg/m s	MICROPOISE
Velocity of sound	a	VS	m/s	M/S
Water - dry air mass ratio	w/a	W/A		

In most cases, the SI units were scaled by various powers of 10 in order either to present values in more familiar units (such as density in g/cm^3 rather than kg/m^3) or to improve the appearance of the table format. As an example of the latter, viscosity is expressed in units of micropoise instead of kg/m s (1 micropoise $= 10^{-7}$ kg/m s) so that whole numbers rather than decimal numbers could be tabulated. To keep the symbol slightly shorter, J/G was used instead of KJ/KG since the tabular values are identical for either unit. Some symbols recommended in reference 33 are the result of certain FORTRAN language limitations in the use of program symbols. For example, F/A is not permitted as a symbol (because of the slash mark) in FORTRAN programming. Therefore the symbol FAR is recommended in reference 33 as the symbol for fuel-air ratio rather than the more familiar F/A. However, the FORTRAN limitation on the use of slash marks does not apply to headings on output tables, and therefore the symbol F/A was retained. For similar reasons the symbol W/A is used to represent water-air mass ratio rather than WARL or WAR, and the symbol U was not used to represent differentiation (d/d) as recommended in reference 33.

The Kelvin temperature schedules (parts I and II) and the Rankine temperature schedules (parts III and IV) were selected for convenience in interpolation. In general the two sets of temperatures do not correspond to one another. To assist in converting from the units in this report to the units of part III, a table of conversion factors is given in table IV. (A table of conversion factors is given in part III to assist in the reverse conversion.) For each quantity the primary SI unit is given on the first line and indicated by (SI). A footnote is used to indicate the lines containing the conversion factors to convert part I units to part III units.

Table A Properties (Constant Composition)

The simplest property tables are tables A. These tables are based on the assumption that no dissociation occurs and therefore that composition remains constant throughout the entire temperature range (200 to 3000 K).

With this assumption, all properties given in tables A except density and entropy are independent of pressure. Densities are given for two pressures, 1 and 50 atm. Densities at other pressures can be obtained simply by multiplying the value at 1 atm by the other pressure. For example, the density at 500 K and 1 atm in table 10A is 7.0453×10^{-4} g/cm^3. The density at the same temperature conditions but at 10 atm is therefore $10 \times 7.0453 \times 10^{-4}$ g/cm^3 $= 7.0453 \times 10^{-3}$ g/cm^3.

Entropies at pressures other than those given in this report can be obtained by subtracting $(R/M)\ln P$ from the value at 1 atm. For example, at 500 K in table 10A, $s = 7.4935$ J/g K at 1 atm. At 2 atm, $s = 7.4935 - (8.31441/28.9056) \ln 2$ $= 7.2941$ J/g K.

The assumption of constant composition is the same as used to generate the Keenan, Chao, and Kaye tables (ref. 4). These properties may therefore be compared. Differences, where they appear, are due primarily to small differences in the assumed composition of air and/or thermodynamic or transport properties of pure species. In addition, different enthalpy bases are used.

For purposes of comparison, the enthalpy values of reference 4 can be adjusted to the base used in this report by means of the following constants:

	This base - ref. 4 base	
	J/g	Btu/lb
Dry air	-298.59	-128.37
ER = 0.25 (400 percent theoretical air)	-1055.5	-453.8
ER = 0.5 (200 percent theoretical air)	-1787.8	-768.6
ER = 1.0 (100 percent theoretical air)	-3182.2	-1368.1

Two examples are given that illustrate the use of these constants to adjust for bases. For dry air the reference 4 values are in units of Btu per pound. At 277.78 K (500° R), for example, the reference 4 value is 278.12 J/g (119.57 Btu/lb). This value, when adjusted for the difference in enthalpy bases is $278.12 - 298.59 = -20.47$ J/g ($119.57 - 128.37 = -8.8$ Btu/lb), which compares closely with the value of -24.74 J/g (-10.6 Btu/lb) interpolated from values in table 1A. The difference in these two values of -4.3 J/g (-1.8 Btu/lb) is due to inclusion of CO_2 in the air selected for this report. For other equivalence ratios the reference 4 values are in units of Btu per pound mole. These values must first be divided by the molecular weight before the enthalpy bases are adjusted. For example, for ER = 1.0 and $T = 555.56$ K (1000° R), the reference 4 value is 17 043.3 J/g mol (7327.3 Btu/lb mol). The molecular weights given in reference 4 for ER = 0.25, 0.5, and 1.0 are 28.9512, 28.9360, and 28.9072, respectively. The enthalpy value adjusted for bases is then $(17\,043.3/28.9072) - 3182.2 = -2592.6$ J/g ($(7327.3/28.9072) - 1368.1 = -1114.6$ Btu/lb). This compares closely with the value of 2591.3 J/g (-1114.1 Btu/lb) obtained from table 10A, a difference of -1.3 J/g (-0.5 Btu/lb).

The preceding procedures were used to obtain the following comparison of enthalpy differences between the constant-composition enthalpies in this report and reference 4.

Temperature,		Dry air		Equivalence ratio, ER					
T	°R			0.25		0.5		1.0	
		Difference in constant-composition enthalpies in this report and reference 4 after adjusting for enthalpy base							
		J/g	Btu/lb	J/g	Btu/lb	J/g	Btu/lb	J/g	Btu/lb
277.78	500	-4.3	-1.8	-2.8	-1.2	-1.2	-0.5	1.2	0.5
555.56	1000	-4.3	-1.8	-2.8	-1.2	-1.2	- .5	1.2	.5
833.33	1500	-4.3	-1.8	-2.6	-1.1	-1.2	- .5	1.4	.6
1111.11	2000	-4.3	-1.8	-2.6	-1.1	-1.2	- .5	1.4	.6
1388.89	2500	-4.3	-1.8	-2.8	-1.2	-1.4	- .6	.9	.4
1666.67	3000	-4.4	-1.9	-3.0	-1.3	-1.6	- .7	.5	.2
2222.22	4000	-3.0	-1.3	---	---	---	---	---	---
2777.78	5000	-1.6	-.7	---	---	---	---	---	---
3000	5400	-.9	-.4	---	---	---	---	---	---

A comparison of several other parameters for air given in the following table shows very good agreement between the reference 4 values and the results in this report for constant compositions.

Temperature, T, °R	Specific heat at constant pressure, c_p, Btu/lb °R		Specific heat ratio, γ		Velocity of sound, a, ft/s		Viscosity, η, lb/ft s		Thermal conductivity λ, Btu/hr ft °R		Prandtl number	
	Reference 4	This report	Reference 4	This report	Reference 4	This report	Reference 4	This report	Reference 4	This report	Reference 4	This report
500	0.2397	0.2399	1.402	1.4002	1096.3	1096.2	0.0422	0.0420	0.0141	0.0140	0.717	0.7208
1000	.2486	.2487	1.381	1.3807	1539.7	1539.5	.0697	.0699	.0248	.0242	.699	.7179
2000	.2771	.2769	1.329	1.3291	2135.7	2136.1	.1076	.1108	.0417	.0430	.715	.7145
3000	.2927	.2929	1.306	1.3056	2593.1	2593.0	------	.1432	------	.0585	-----	.7172
4000	.3012	.3020	1.295	1.2938	2981.4	2980.5	------	.1715	------	.0722	-----	.7178
5000	.3067	.3073	1.288	1.2872	3324.5	3323.7	------	.1975	------	.0842	-----	.7210

Table B Properties

These tables are based on chemical equilibrium compositions for the high-temperature range of 900 to 3000 K (1620° to 5400° R). Two sets of values are given in table B for some parameters such as c_p, γ_s, and a. One set of values is for reacting compositions and the other is for frozen compositions. A comparison of specific heat is given in the following table for these two sets from table 10.3B together with the corresponding set from table 10A (H/C = 2, dry air, ER = 1.0):

Temperature, T, K	Table 10A (constant composition)	Table 10.3B (equilibrium composition)	
		Frozen	Reacting
	Specific heat, c_p, J/g K		
1000	1.2641	1.2641	1.2641
1500	1.3618	1.3618	1.3746
2000	1.4201	1.4194	1.7081
2500	1.4539	1.4484	2.9816
3000	1.4745	1.4617	5.0271

The reacting equilibrium values of specific heat are based on equation (14), which contains two terms; the other two sets of values are based on equation (26), which contains just one term. These specific heats are plotted in figure 2, which illustrates graphically the large contribution of the reacting composition term to c_p. The contribution due to reacting compositions can also make large differences in the calculated values of conductivities and Prandtl numbers.

There is considerably less difference in the values of specific heat from table 10A (constant compositions) and the corresponding values from table 10.3B (frozen compositions). The difference between these two sets of values is that the table A values are based on compositions that are kept constant for the entire temperature range whereas the table B values are based on compositions that are frozen at the equilibrium values at each temperature. These two sets of values are identical at the lower temperatures and fairly close at the higher temperatures.

Table C Properties

The properties in table C are based on the assumption of equilibrium among the phases of water (solid, liquid, and gas). Each condensed phase is considered to be a pure species. As indicated previously, transport properties and velocity of sound are difficult to define unambiguously for heterogeneous mixtures. Therefore two sets of values for some of the parameters appear in these tables. The heterogeneous system properties are for the entire mixture. The gas-phase properties were obtained by first normalizing the compositions to gases only and then computing gas mixture properties based on these normalized compositions.

Large values of c_p appear for some of the heterogeneous conditions (see, e.g., fig. 2). These large values are due to the heats of transition for water (heat of fusion = 6010.5 J/g mol, heat of vaporization = 44 016 J/g mol).

The molecular weights for the gas phase were obtained by means of equation (4a); those for the heterogeneous phase were obtained from equation (5). Because of differences in definition, both of these sets of values differ from molecular weights obtained from the reference 5 program for the same conditions. For example for ER = 1.0, dry air, H/C = 2, and P = 10 atm, the results in table 10C are compared with the following reference 5 program results:

Temperature, T, K	This report		Reference 5 (heterogeneous)
	Homogeneous	Heterogeneous	
	Molecular weight		
200	28.906	30.541	33.245
260	↓	30.538	33.239
300		30.497	33.130
340		30.208	32.362
380		28.983	29.110

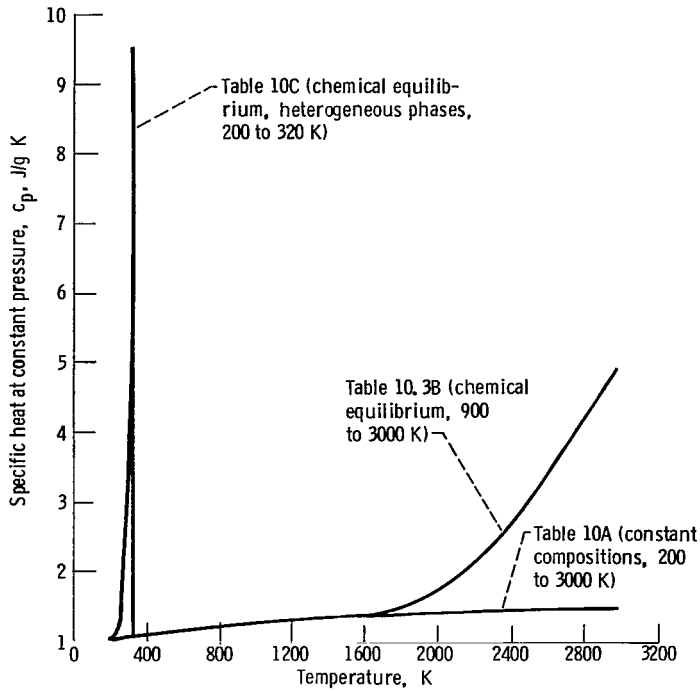

Figure 2. - Specific heat, as a function of temperature, based on several assumptions concerning combustion. Equivalence ratio, ER = 1; pressure, P_{atm} = 1 atm; hydrogen-carbon atom ratio, H/C = 2; dry air.

Tables D and E Properties

For the lean to stoichiometric conditions, one can easily justify tables of properties that are based on the assumption of constant composition (table A). For these conditions, composition does remain constant (to the number of figures in this report) to at least 900 K (1620° R) and fairly constant for somewhat higher temperatures. By contrast, for the rich condition of ER = 1.25, composition varies rapidly even at low temperatures. Therefore a type A table that is based on constant composition is not feasible for this case. It was decided to present two types of tables for ER = 1.25, both based on chemical equilibrium. Table D is based on chemical equilibrium for gas-phase species only for the entire range 200 to 3000 K (360° to 5400° R). Table E is based on chemical equilibrium among both gas- and condensed-phase species. The properties for table E are given at every 20 degrees from 200 to 800 K (or 360° to 1400° R in part III). At higher temperatures the condensed phases do not exist at the pressures considered in this report. Similar to table C, which also contained both phases, some of the properties in table E are for the entire system composition, and some of the properties are for normalized gas-phase compositions only. These differences were discussed in previous sections.

Composition Tables

The constant compositions used to generate the table A properties are given on the same sheets as the properties. The equilibrium compositions used to generate the properties in tables B, C, D, and E are presented in part II, which corresponds to the part I data in SI units, and in part IV, which corresponds to the part III data in U.S. customary units. Two separate sets of compositions were required inasmuch as the temperature schedules of parts I and III are not the same.

As stated in the section Equilibrium Compositions, only 17 gaseous species of the original 55 considered had mole fractions greater than 0.000005 for any of the conditions in this report, and therefore these are the only ones for which compositions are tabulated.

Lewis Research Center
National Aeronautics and Space Administration
Cleveland, Ohio, November 27, 1981

Appendix A
Symbols

a	velocity of sound, m/s, eqs. (19) and (20)
$(C_p^o)_j$	standard-state constant-pressure specific heat for species or reactant j, J/(kg mol K)
c_p	constant-pressure specific heat of mixture, J/kg K, eq. (14)
$(c_p)_g$	constant-pressure specific heat of gaseous mixture, J/kg K, eq. (15)
$(c_v)_g$	constant-volume specific heat of gaseous mixture, J/kg K, eq. (24)
ER	equivalence ratio, eq. (33)
f/a	fuel-air mass ratio
H/C	hydrogen-carbon atom ratio in fuel
$(H_T^o)_j$	standard-state enthalpy for species j, J/kg mol, eqs. (35) and (36)
$(\Delta H_f^o)_T$	heat of formation at temperature T, J/kg mol
h	enthalpy of mixture, J/kg, eq. (12)
M	molecular weight of mixture, kg/kg mol, eq. (5)
M_g	molecular weight of gaseous mixture, kg/kg mol, eqs. (4a) and (4b)
M_j	molecular weight of species j, kg/kg mol, eqs. (4a) and (5)
NC	number of condensed species in mixture
NG	number of gaseous species in mixture
NS	number of species in mixture
N_g	moles of gaseous mixture, kg mol, eq. (2a)
n_g	moles of gaseous mixture per unit mass of gaseous mixture, kg mol/kg, eqs. (2b) and (4b)
n_j	moles of species j per unit mass of mixture, kg mol/kg, eq. (3)
P	pressure, N/m^2
P_{atm}	pressure, atm, eq. (13a)
Pr	Prandtl number ($c_p\eta/\lambda$), dimensionless, eq. (32)
R	universal gas constant, 8314.41 J/kg mol K
r	chemical equivalence ratio, eq. (34)
S_j	entropy of species j, J/kg mol K, eqs. (13) and (13a)
$(S_T)_j$	standard-state entropy for species j, J/kg mol K
s	entropy of mixture, J/kg K, eq. (13)
T	temperature, K
u_g	internal energy of gaseous mixture, J/kg, eq. (24)
V	volume, m^3, eq. (8)
V_c	volume of condensed phase, m^3, eq. (8)
V_g	volume of gas phase, m^3, eq. (2a)
v_c	specific volume of condensed phase, m^3/kg, eqs. (8) and (10)
v_g	specific volume of gas phase, m^3/kg, eq. (2b)
v_j	specific volume of species j, m^3/kg, eq. (10)
W	mass, kg, eq. (8)
W_c	mass of condensed phase, kg, eq. (8)
W_g	mass of gas phase, kg, eq. (8)

w/a	water–dry air mass ratio
w_c	mass fraction of condensed phase, eqs. (8) and (10)
w_g	mass fraction of gas phase, eqs. (8) and (9)
w_j	mass fraction of species j, eq. (10)
x_j	mole fraction of species j, eq. (3)
Y	atoms of hydrogen in empirical fuel, eq. (1)
α	coefficient, eq. (1)
β	coefficient, eq. (1)
γ	ratio of specific heats, eq. (21)
γ_s	isentropic exponent, eq. (18)
η	viscosity, kg/m s, eq. (30)
η_j	variable in eq. (30), kg/m s
λ	thermal conductivity, W/m K, eq. (31)
ρ	density of mixture, kg/m^3, eqs. (8) and (11)
ρ_g	density of gaseous mixture, kg/m^3, eq. (7)
ρ_j	density of species j, kg/m^3, eqs. (10) and (11)

Subscripts:

C	combustion
frozen	chemically frozen (nonreacting)
int	pertaining to internal energy modes
P	at constant pressure
reaction	chemical reaction contribution
S	at constant entropy
stoich	stoichiometric
T	at constant temperature
trans	translational

Superscript:

o	standard state

Appendix B
Thermodynamic Properties for Ice

It is desirable to have thermodynamic properties for ice that are consistent with properties for water in the liquid and gas phases. One criterion for consistency is that the theoretically calculated entropy of the gas phase at $T = 298.15$ K is equal to the sum of the following contributions to entropy obtained by other means: the residual entropy of ice at 0 K, the entropy of ice from 0 to 273.15 K, the entropy of fusion at 273.15 K, the entropy of liquid water from 273.15 to 298.15 K, and the entropy of vaporization at 298.15 K.

In this report it is assumed that all of the following entropy values are correct and that only the entropy of ice from 0 to 273.15 K remains to be determined:

Type of contribution to entropy	Entropy		Reference
	J/g mol K	cal/g mol K	
Residual	3.408	0.8145	41
Ice, 0 to 273.15 K	(a)	(a)	--
Fusion, $(\Delta H_{fusion}/273.15)$	22.0037	5.2590	42
Liquid water, 273.15 to 298.15 K	6.6136	1.5807	43
Vaporization at 298.15 K	118.774	28.3877	22
$S_{298.15}$ (gas, theoretical)	188.724	45.1061	22

[a]To be determined.

The value of the entropy of ice from 0 to 273.15 K consistent with these data should then be

$$\Delta S_0^{273.15} = 188.724 - (3.408 + 22.0037 + 6.6136 + 118.774) = 37.9247 \text{ J/g mol K } (9.0642 \text{ cal/g mol K})$$

It now remains to select a set of specific heat data that gives the best agreement with the value $\Delta S_0^{273.15} = 9.0642$ cal/g mol when numerically integrated according to the formula

$$\Delta S_0^{273.15} = \int_0^{273.15} c_p \, d \ln T \tag{42}$$

The sources of several sets of experimental specific heat data for ice that were processed are

Temperature interval, K	Reference
2.144 - 27.034	34
13.21 - 268.39	35
16.43 - 267.77	36

The specific heat data in reference 34 were given for several series of experiments. These data were interpolated, smoothed, averaged, and converted from units of J/g K to cal/g mol K to give heat capacity values at every degree from 1 to 27 K. (The units of cal/g mol K were used in order to generate a table of the thermodynamic properties of ice consistent with the units of ref. 19.) The data in reference 35 were also given for several series of experiments as tabular data, as well as a plot in the temperature range 60 to 160 K. These tabular and plotted data were processed in a manner similar to that described for the reference 34 data to give heat capacity values at every degree from 15 to 30 K, at every 5

degrees from 30 to 270 K, and at 273.15 K. Reference 36 gives smoothed values at every 10 degrees from 10 to 270 K. These data were used directly along with an extrapolated value at 273.15 K.

Several computer runs were made to numerically integrate these data with respect to the logarithm of temperature to obtain the entropy required in equation (42). The results were as follows:

Run	c_p data used	$\Delta S = \int_0^{273.15} c_p \, d \ln T$, cal/g mol K
1	Reference 36	9.1123
2	0 to 15 K (ref. 34) 15 to 273.15 K (ref. 35)	9.0593
3	0 to 17 K (ref. 34) 18 to 20 K, faired 21 to 273.15 K, adjusted (ref. 35)	9.0642

It is clear from these results (run 2) that the entropy value of 9.0593 obtained from the reference 35 heat capacity data is very close to the desired value of 9.0642. The reference 35 heat capacity data were slightly adjusted to obtain exactly the desired entropy, as shown in run 3. The resulting set of thermodynamic ice data was used in this report and is given in table I.

Enthalpy provides an additional check on the consistency of these data. From reference 22, $H^o_{298.15}(l) - H^o_0(s) = 13\,293 \pm 21$ J/g mol (3177.1 ± 5.0 cal/g mol). This value may be compared with the sum of the following enthalpies, which are consistent with the previously discussed entropy data:

Type of contribution to enthalpy	Enthalpy, cal/g mol	Reference
Ice, 0 to 273.15 K	1286.1	This report
Fusion at 273.15 K	1436.55	42
Liquid, 273.15 to 298.15 K	451.25	43
Total	3173.9	

This value of 3173.9 cal/g mol is equal to 13 280 J/g mol, which differs by 13 J/g mol from the CODATA (ref. 22) value of $13\,293 \pm 21$ J/g mol and is within the given uncertainty of the CODATA value.

THERMODYNAMIC DATA FOR ICE

T, K	c_p, cal/mol K	$H_T^o - H_0^o$, cal/mol	S, cal/mol K
0	0.	0.0	0.8145
5	0.0059	0.0	0.8164
10	0.0648	0.1	0.8335
15	0.2329	0.8	0.8878
20	0.4769	2.6	0.9873
25	0.7400	5.6	1.1220
30	0.9940	10.0	1.2795
35	1.2334	15.6	1.4509
40	1.4603	22.3	1.6306
45	1.6767	30.1	1.8151
50	1.8851	39.1	2.0026
55	2.0883	49.0	2.1919
60	2.2884	59.9	2.3822
65	2.4854	71.9	2.5731
70	2.6787	84.8	2.7644
75	2.8681	98.6	2.9557
80	3.0534	113.5	3.1468
85	3.2341	129.2	3.3373
90	3.4100	145.8	3.5272
95	3.5800	163.3	3.7161
100	3.7455	181.6	3.9040
110	4.0690	220.7	4.2762
120	4.3825	262.9	4.6438
130	4.6865	308.3	5.0066
140	4.9825	356.6	5.3648
150	5.2720	407.9	5.7185
160	5.5574	462.1	6.0678
170	5.8445	519.1	6.4133
180	6.1386	579.0	6.7557
190	6.4372	641.8	7.0956
200	6.7410	707.7	7.4335
210	7.0510	776.7	7.7698
220	7.3660	848.8	8.1051
230	7.6850	924.0	8.4396
240	8.0090	1002.5	8.7735
250	8.3355	1084.2	9.1070
260	8.6655	1169.2	9.4404
270	9.0015	1257.5	9.7737
273.15	9.1092	1286.1	9.8787

Appendix C
Transport Properties of Pure Species

	AR		C		CH4		CO		CO2	
T K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K
200	159	124	157	410	77	217	129	186	101	97
300	228	178	207	539	112	346	177	254	150	167
400	288	225	252	656	141	496	218	315	197	242
500	342	267	295	766	168	667	254	373	240	322
600	391	305	335	871	192	856	287	429	280	401
700	436	340	374	971	214	1056	317	486	317	478
800	478	373	411	1069	235	1260	346	543	350	551
900	518	404	448	1164	255	1465	373	598	382	621
1000	556	434	484	1257	274	1669	399	652	411	689
1100	592	462	519	1348	292	1866	425	704	438	753
1200	628	490	553	1437	309	2061	449	754	465	813
1300	661	516	587	1525	326	2252	473	804	489	871
1400	694	542	621	1613	342	2439	496	853	513	927
1500	726	567	654	1700	358	2622	519	901	535	979
1600	757	591	687	1787	374	2801	541	949	557	1030
1700	788	615	720	1873	389	2975	564	996	577	1078
1800	818	638	752	1960	403	3145	586	1043	597	1124
1900	847	661	784	2046	418	3310	608	1090	616	1168
2000	875	683	816	2133	432	3470	631	1136	635	1211
2100	903	704	847	2220	446	3626	653	1182	653	1251
2200	930	725	879	2307	460	3778	675	1227	670	1291
2300	956	746	910	2394	473	3925	697	1272	687	1328
2400	982	766	941	2481	486	4068	719	1317	704	1365
2500	1007	786	972	2569	499	4207	742	1362	720	1400
2600	1032	806	1003	2657	512	4343	764	1408	735	1433
2700	1057	825	1033	2746	525	4475	786	1453	750	1466
2800	1082	844	1064	2835	538	4604	808	1497	765	1497
2900	1106	863	1094	2924	550	4730	831	1542	780	1528
3000	1129	881	1125	3014	562	4854	853	1587	794	1558
3100	1153	900	1155	3104	574	4977	874	1631	808	1588
3200	1176	918	1186	3195	586	5097	896	1676	822	1617
3300	1199	936	1216	3286	598	5216	917	1720	835	1646
3400	1221	953	1246	3377	610	5333	939	1764	848	1675
3500	1244	970	1276	3469	621	5450	961	1808	861	1703
3600	1266	988	1306	3561	633	5565	982	1852	873	1732
3700	1287	1005	1337	3653	644	5679	1004	1896	886	1760
3800	1309	1021	1367	3745	655	5793	1026	1941	898	1787
3900	1330	1038	1397	3837	667	5905	1048	1985	910	1815
4000	1351	1054	1427	3930	678	6017	1070	2029	922	1842
4100	1372	1071	1457	4022	689	6128	1091	2073	934	1869
4200	1393	1087	1487	4114	699	6238	1113	2117	945	1894
4300	1413	1103	1517	4206	710	6347	1134	2162	956	1919
4400	1433	1119	1547	4298	721	6455	1155	2206	967	1942
4500	1453	1134	1577	4390	731	6561	1176	2250	978	1965
4600	1473	1150	1607	4481	742	6664	1197	2293	989	1987
4700	1493	1165	1637	4572	752	6765	1218	2337	1000	2008
4800	1512	1180	1667	4662	762	6863	1239	2380	1010	2029
4900	1532	1195	1697	4752	773	6958	1259	2422	1021	2050
5000	1551	1210	1727	4841	783	7047	1280	2464	1031	2072

	H		H2		H20		N		NH3	
T K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K
200	38	1197	67	1293	51	96	125	279	68	152
300	53	1661	89	1835	91	180	173	387	103	243
400	67	2094	109	2256	133	271	218	486	137	366
500	81	2507	127	2634	172	359	260	580	172	509
600	93	2906	144	2985	214	464	301	670	206	658
700	106	3292	160	3326	255	579	339	756	239	816
800	118	3670	175	3660	296	704	377	839	271	984
900	130	4040	190	3991	336	835	413	920	301	1149
1000	142	4403	205	4321	376	971	448	999	331	1317
1100	153	4761	218	4684	413	1111	483	1076	359	1493
1200	165	5114	232	5051	450	1254	517	1151	386	1671
1300	176	5462	245	5420	487	1402	550	1225	412	1847
1400	187	5807	258	5790	524	1553	582	1298	438	2022
1500	198	6149	271	6160	560	1707	614	1369	462	2195
1600	209	6487	283	6511	595	1860	646	1439	486	2365
1700	220	6823	295	6864	630	2015	677	1508	509	2531
1800	231	7156	307	7221	664	2170	708	1576	531	2695
1900	242	7488	318	7585	698	2327	738	1644	553	2855
2000	252	7817	330	7957	731	2485	768	1710	574	3011
2100	263	8144	341	8321	763	2642	798	1776	595	3164
2200	273	8470	352	8701	795	2799	827	1842	616	3314
2300	284	8794	363	9101	826	2958	856	1907	636	3459
2400	294	9117	374	9519	857	3118	885	1972	655	3602
2500	305	9438	385	9952	887	3278	914	2037	674	3741
2600	315	9758	395	10415	917	3443	942	2102	693	3876
2700	325	10077	406	10849	946	3605	970	2167	712	4009
2800	336	10395	416	11256	974	3764	998	2232	730	4138
2900	346	10711	426	11643	1003	3919	1026	2298	748	4265
3000	356	11027	436	12015	1030	4070	1053	2364	766	4388
3100	366	11347	446	12377	1058	4213	1081	2431	783	4509
3200	377	11664	456	12735	1085	4352	1108	2498	801	4626
3300	387	11978	466	13089	1111	4488	1135	2566	818	4742
3400	397	12288	475	13440	1137	4621	1162	2635	834	4855
3500	407	12592	485	13789	1163	4752	1188	2705	851	4965
3600	416	12884	494	14136	1189	4880	1215	2775	867	5074
3700	425	13171	504	14481	1214	5006	1241	2848	883	5181
3800	434	13455	513	14824	1239	5130	1268	2921	899	5285
3900	444	13735	522	15166	1264	5252	1294	2995	915	5388
4000	452	14012	532	15506	1288	5372	1320	3071	931	5489
4100	461	14290	541	15846	1312	5491	1346	3149	946	5589
4200	470	14566	550	16185	1336	5608	1371	3227	962	5686
4300	479	14842	559	16524	1359	5724	1397	3308	977	5782
4400	488	15116	568	16863	1383	5838	1422	3390	992	5875
4500	497	15389	576	17204	1406	5951	1448	3474	1007	5967
4600	506	15661	585	17547	1429	6063	1473	3559	1022	6056
4700	515	15933	594	17893	1451	6173	1498	3647	1036	6142
4800	523	16204	603	18242	1474	6283	1524	3737	1051	6225
4900	532	16477	611	18595	1496	6391	1549	3828	1065	6305
5000	541	16750	620	18952	1518	6497	1574	3922	1080	6382

	NO		NO2		N2		N2O		O	
T K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K
200	136	189	111	112	129	182	99	106	160	333
300	192	262	165	180	179	259	149	180	206	421
400	239	330	213	253	222	323	194	257	249	500
500	282	395	257	327	260	383	236	334	289	576
600	320	459	298	400	295	442	274	409	328	649
700	356	522	335	471	327	502	309	481	365	720
800	389	585	370	539	358	562	341	550	401	789
900	421	646	403	603	387	621	372	616	436	855
1000	452	704	434	663	414	678	402	680	470	921
1100	481	758	463	719	441	732	430	738	503	985
1200	509	812	492	773	467	784	457	795	535	1048
1300	536	864	520	826	492	835	483	851	567	1110
1400	563	914	546	877	516	885	508	905	599	1171
1500	589	964	572	926	540	933	532	957	630	1231
1600	614	1012	597	974	563	981	556	1008	660	1290
1700	639	1059	622	1021	585	1028	579	1058	690	1348
1800	663	1105	646	1066	607	1075	601	1106	719	1405
1900	686	1150	669	1110	629	1120	623	1152	749	1462
2000	710	1194	692	1153	650	1164	645	1198	777	1518
2100	733	1237	715	1194	670	1207	666	1242	806	1573
2200	755	1279	737	1234	691	1249	686	1284	834	1628
2300	777	1320	758	1273	711	1291	706	1326	862	1683
2400	799	1361	779	1312	730	1332	726	1367	889	1738
2500	820	1401	800	1349	750	1372	746	1406	917	1792
2600	842	1439	821	1386	769	1412	765	1445	944	1846
2700	862	1478	842	1422	788	1451	784	1483	971	1900
2800	883	1515	862	1457	806	1490	803	1521	997	1954
2900	903	1552	882	1492	825	1528	821	1558	1024	2007
3000	923	1589	901	1527	843	1567	840	1594	1050	2061
3100	943	1625	921	1561	860	1605	858	1630	1076	2115
3200	963	1661	940	1595	878	1644	876	1666	1102	2169
3300	982	1697	959	1628	896	1682	893	1701	1128	2222
3400	1001	1732	978	1661	913	1719	911	1736	1154	2276
3500	1020	1767	996	1694	930	1757	928	1771	1179	2330
3600	1039	1801	1015	1727	947	1793	945	1805	1205	2385
3700	1058	1836	1033	1759	963	1829	962	1839	1230	2439
3800	1076	1870	1051	1791	980	1865	979	1873	1255	2493
3900	1094	1904	1069	1823	996	1900	996	1907	1280	2548
4000	1112	1937	1086	1855	1012	1935	1012	1941	1305	2603
4100	1130	1971	1104	1887	1029	1968	1029	1974	1330	2657
4200	1148	2004	1121	1918	1044	2000	1045	2007	1354	2713
4300	1166	2037	1139	1949	1060	2033	1061	2040	1379	2768
4400	1183	2070	1156	1980	1076	2066	1077	2072	1403	2823
4500	1200	2102	1173	2011	1091	2100	1093	2104	1428	2878
4600	1217	2135	1189	2040	1107	2134	1109	2135	1452	2934
4700	1234	2166	1206	2069	1122	2168	1124	2166	1476	2990
4800	1251	2197	1223	2098	1137	2203	1140	2196	1500	3045
4900	1268	2228	1239	2125	1152	2238	1155	2225	1524	3101
5000	1285	2258	1256	2152	1167	2272	1170	2253	1548	3157

	OH		O2	
T K	VISC MICRO POISE	COND MICRO W/CM-K	VISC MICRO POISE	COND MICRO W/CM-K
200	73	182	146	185
300	115	288	206	263
400	158	392	257	336
500	199	493	303	410
600	240	594	344	481
700	279	694	383	549
800	317	795	420	614
900	354	896	455	678
1000	390	999	488	740
1100	425	1103	521	797
1200	458	1207	552	852
1300	491	1309	582	907
1400	522	1410	612	959
1500	553	1510	640	1011
1600	582	1608	668	1064
1700	611	1704	696	1116
1800	639	1799	723	1166
1900	666	1892	749	1216
2000	693	1984	775	1263
2100	719	2074	801	1307
2200	744	2163	826	1349
2300	769	2250	851	1388
2400	793	2336	875	1424
2500	817	2420	899	1457
2600	841	2503	922	1492
2700	864	2585	946	1527
2800	886	2666	969	1561
2900	909	2746	992	1595
3000	931	2824	1014	1629
3100	952	2901	1036	1661
3200	974	2977	1058	1692
3300	995	3051	1080	1724
3400	1016	3125	1101	1755
3500	1036	3198	1123	1785
3600	1056	3269	1144	1816
3700	1076	3340	1165	1847
3800	1096	3410	1185	1877
3900	1116	3479	1206	1907
4000	1135	3548	1226	1937
4100	1154	3616	1246	1965
4200	1173	3684	1266	1993
4300	1192	3751	1286	2020
4400	1211	3817	1306	2046
4500	1229	3884	1325	2073
4600	1248	3950	1345	2099
4700	1266	4017	1364	2125
4800	1284	4083	1383	2151
4900	1301	4149	1402	2176
5000	1319	4216	1421	2201

Appendix D
Sample Applications

In addition to serving as a reference for thermodynamic and transport properties of combustion gas mixtures, the property tables can be used for other purposes. Two examples of applications are given here.

Example 1 – Calculate Air Temperature After an Isentropic Compression

Step 1. Specify initial conditions.
Dry air
$T_1 = 298.15$ K
$P_1 = 101.325$ kPa (1 atm)
$P_2/P_1 = 30$
For these initial conditions, use table 1A for data required in subsequent steps.

Step 2. Calculate $\Delta S = (R/M)\ln P_2/P_1$ for $P_2/P_1 = 30$.
$\Delta S = (R \ln 30)/M = (8.31441)(3.40120)/28.9651 = 0.97631$

Step 3. Calculate S_2.
$S_2 = S_1 + \Delta S = 6.8605 + 0.9763 = 7.8368$
(S_1 is taken from table 1A for $P = 101.325$ kPa (1 atm) and $T = 298.15$ K)

Step 4. Calculate T_2 corresponding to S_2.
Locate two temperatures that bracket S_2 in table 1A in the $P = 1$ atm column.

T, K	S
760	7.8268
770	7.8410

Linear interpolation of these values gives $T_2 = 767.0$ K corresponding to $S_2 = 7.8368$.

Note: A method commonly used to obtain the previous result is to use the approximate equation

$$\frac{T_2}{T_1} = \left(\frac{P_2}{P_1}\right)^{(\gamma-1)/\gamma} \tag{43}$$

This equation gives the same results as the previous method only when γ is a constant. A refinement in the use of equation (43) involves an iterative procedure that employs the average value of γ between T_1 and successively better estimates of T_2. For the given example the calculated value of T_2 obtained from equation (43) is 759 K. This is not as accurate, however, as the previous result, $T_2 = 767$ K.

Example 2 – Calculate Combustion Temperature

Step 1. Specify conditions.
Air temperature = 767.0 K, $P = 3039.7$ kPa (30 atm) (from previous example)
Assume fuel has empirical formula CH_2 and a heat of combustion $\Delta h_C = 18\ 732$ Btu/lb estimated by means of equation (38).
Assume $f/a = 0.067628$ (ER = 1.0).

Step 2. Calculate the assigned value for fuel enthalpy h_{CH_2} by using equation (37).

$$h_{CH_2} = -393\ 522 - 241\ 814 + 2.32600\ (14.0268)(18\ 732) = -24\ 179 \text{ J (or } -1723.8 \text{ J/g)}$$

Note: If the heat of combustion or heat of formation is not known, h_{fuel} can be estimated from equation (39).

Step 3. Calculate the enthalpy of the air h_{air}. In this example the air temperature T is 767 K. From table 1A obtain the two enthalpies corresponding to the two temperatures banding the assigned temperature.

T, K	h, J/g
760	475.7
770	486.6

$h_{air} = 483.3$ J/g for $T = 767$ K by linear interpolation

Step 4. Calculate h for fuel plus air.

$$h = \frac{(f/a)h_{fuel} + h_{air}}{1 + f/a}$$

From the previously obtained values for h_{CH_2} and h_{air}

$$h = \frac{(0.067618)(-1723.1) + 483.3}{1.067628} = 343.5 \text{ J/g}$$

Step 5. Find a temperature corresponding to this value in the tables.

(This will be the combustion temperature T_C.) Since there is no table for $P_C = 3039.75$ kPa (30 atm), first interpolate T_C values in table 10.4B for $P_C = 1013.25$ kPa (10 atm) and in table 10.5B for $P_C = 5066.25$ kPa (50 atm), each corresponding to $h = 343.5$ J/g, and then interpolate these two T_C values as a function of pressure to obtain the desired value at $P_C = 3039.75$ kPa (30 atm). (For purposes of comparison also obtain a value for constant composition, table 10A.)

Table 10A (constant composition)		Table 10.4B (equilibrium composition) P_C = 1013.25 kPa (10 atm)		Table 10.5B (equilibrium composition) P_C = 5066.25 kPa (50 atm)	
T	h	T	h	T	h
2700	308.1	2500	241.0	2550	251.7
2750	381.3	2550	354.7	2600	353.2
2724.2	343.5	2545.1	343.5	2595.2	343.5

Inasmuch as combustion temperature is nearly linear with the logarithm of combustion pressure, a more nearly correct value can be obtained by interpolating logarithmically with pressure. This gives $T_C = 2579$ K for a pressure P_C of 3039.75 kPa (30 atm), and this temperature compares closely with the value of 2581 K obtained by a direct calculation with the program of reference 5. (Linear interpolation gives $T_C = 2570$ K). In this example, the interpolated value of 2579 K for the assumption of equilibrium composition is 145 K lower than the value of 2724 K for constant composition.

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TABLE I. - SELECTED PHYSICAL CONSTANTS 1955-1973[a]

Year	Universal gas constant, R			Second radiation constant, $c_2 = hc/k$, cm/K	Sackur-Tetrode constant,[b] S_c/R	Reference
	Chemical scale		International Steam Tables (after 1956), Btu/lb mol °R			
	J/g mol K	cal/g mol K				
1955	8.31470(34)	1.987261(81)	--------	1.43880(7)	-3.66512	8
1963	8.31434(35)	1.987175(84)	--------	1.43879(6)	-3.66494	9
1969	8.31434(35)	1.987175(84)	--------	1.438833(61)	-3.66498	10
1973	8.31441(26)	1.987192(62)	1.985862	1.438786(45)	-3.66487	11

[a]Uncertainties are indicated in parentheses.
[b]$S_c/R = \ln\{(2\pi R_o)^{3/2} h^{-3} N^{-4}\} + \ln(R_o/1.01325\times10^6)$.

TABLE II. - INTERNATIONAL ATOMIC WEIGHTS

Element	Reference				
	13	13	14	15	16
	Year of change				
	1940 values	1953	1961	1969	1971
	Atomic weight based on O^{16}		Atomic weight based on C^{12}		
C	12.010	12.011	12.01115	12.011	------
H	1.0080	------	1.00797	1.0080	1.0079
O	16.0000	------	15.9994	--------	------
N	14.008	------	14.0067	--------	------
Ar	39.944	------	39.948	--------	------

TABLE III. - NORMAL COMPOSITION OF CLEAN, DRY, ATMOSPHERIC AIR NEAR SEA LEVEL

Constituent gas	Typical volume, vol %
Nitrogen (N_2)	78.084
Oxygen (O_2)	20.9476
Argon (Ar)	.934
Carbon dioxide (CO_2)	[a].0314 (or 0.0322)
Neon (Ne)	.001818
Helium (He)	.000524
Krypton (Kr)	.000114
Xenon (Xe)	.0000087
Methane (CH_4)	.00015
Hydrogen (H_2)	.00005
Nitrous oxide (N_2O)	.000027
Carbon monoxide (CO)	.000019
Ozone (O_3)	.000007
Ammonia (NH_3)	.0000004
Nitrogen dioxide (NO_2)	.0000001
Sulfur dioxide (SO_2)	.0000001
Nitric oxide (NO)	.0000000b
Hydrogen sulfide (H_2S)	.000000005

[a]Ref. 17 gives the vol % of CO_2 as 0.0314 in table III and as 0.0322 in table XV.

TABLE IV. - CONVERSION FACTORS

To convert from-	To-	Multiply by-
Length		
cm	m(SI)	0.01
ft	m	0.3048
Mass		
g	kg(SI)	0.001
lb	kg	0.45359237
lb	g	453.59237
Pressure		
Pa	N/m^2(SI)	1
kPa	N/m^2	1000
atm	N/m^2	101 325
kPa	atm	0.009869233
atm	kPa	101.325
atm[a]	lb/in^2	14.69595
lb/in^2	atm	0.06804596
Density		
g/cm^3	kg/m^3(SI)	1000
g/cm^3[a]	lb/ft^3	62.42796
lb/ft^3	kg/m^3	16.018463
lb/ft^3	g/cm^3	0.016018463
Energy		
cal (thermochemical)	J(SI)	4.184
Btu (International Steam Tables after 1956)	J	1055.056
cal	Btu	0.003965666
Btu	cal	252.1644

[a]Multiply the values in these units in part I by the factor given to obtain the corresponding values in the units of part III.

TABLE IV. - CONCLUDED.

To convert from-	To-	Multiply by-
Specific energy		
J/g	J/kg(SI)	1000
J/g[a]	Btu/lb	0.4299226
J/g	cal/g	0.23900574
Btu/lb	J/kg	2326
Btu/lb	J/g	2.326000
Btu/lb	cal/g	0.5559274
cal/g	Btu/lb	1.798796
Specific energy per degree		
J/g K	J/kg K	1000
J/g K[a]	Btu/lb °R	0.2388459
J/g K	cal/g K	0.2390057
Btu/lb °R	J/kg K	4186.801
Btu/lb °R	J/g K	4.186801
Btu/lb °R	cal/g K	1.000669
Viscosity		
kg/m s	N s/m^2(SI)	1
micropoise	N s/m^2	$1X10^{-7}$
micropoise[a]	lb/ft hr	$2.419088X10^{-4}$
poise	N s/m^2	0.1
poise	g/cm s	1
lb/ft hr	N s/m^2	$4.133789X10^{-4}$
lb/ft hr	micropoise	$4.133789X10^3$
Thermal conductivity		
μJ/cm s K	J/m s K (SI)	$1X10^{-4}$
μJ/cm s K[a]	Btu/ft hr °R	$5.777892X10^{-5}$
Btu/ft hr °R	J/m s K	1.730735
Btu/ft hr °R	μJ/cm s K	$1.730735X10^4$

[a]Multiply the values in these units in part I by the factor given to obtain the corresponding values in the units of part III.

TABLE V. - PROPERTY TABLE NUMBERS

(a) Dry air

Hydrogen-carbon ratio, H/C	Equivalence ratio, ER	Constant composition (all pressures)	Equilibrium composition					
			High temperatures					Low temperatures (all pressures)
			P_{atm} = 0.01	P_{atm} = 0.1	P_{atm} = 1	P_{atm} = 10	P_{atm} = 50	
---	Air only	1A	1.1B	1.2B	1.3B	1.4B	1.5B	---
1.7	0.25	2A	2.1B	2.2B	2.3B	2.4B	2.5B	2C
	.5	3A	3.1B	3.2B	3.3B	3.4B	3.5B	3C
	.75	4A	4.1B	4.2B	4.3B	4.4B	4.5B	4C
	1.0	5A	5.1B	5.2B	5.3B	5.4B	5.5B	5C
	1.25 (homogeneous)	---	6.1D	6.2D	6.3D	6.4D	6.5D	---
	1.25 (heterogeneous)	---	6.2E	6.3E	6.3E	6.4E	6.5E	---
2.0	0.25	7A	7.1B	7.2B	7.3B	7.4B	7.5B	7C
	.5	8A	8.1B	8.2B	8.3B	8.4B	8.5B	8C
	.75	9A	9.1B	9.2B	9.3B	9.4B	9.5B	9C
	1.0	10A	10.1B	10.2B	10.3B	10.4B	10.5B	10C
	1.25 (homogeneous)	---	11.1D	11.2D	11.3D	11.4D	11.5D	---
	1.25 (heterogeneous)	---	11.1E	11.2E	11.3E	11.4E	11.5E	---
2.1	0.25	12A	12.1B	12.2B	12.3B	12.4B	12.5B	12C
	.5	13A	13.1B	13.2B	13.3B	13.4B	13.5B	13C
	.75	14A	14.1B	14.2B	14.3B	14.4B	14.5B	14C
	1.0	15A	15.1B	15.2B	15.3B	15.4B	15.5B	15C
	1.25 (homogeneous)	---	16.1D	16.2D	16.3D	16.4D	16.5D	---
	1.25 (heterogeneous)	---	16.1E	16.2E	16.3E	16.4E	16.5E	---

(b) Wet air (w/a = 0.03)

---	Air Only	17A	17.1B	17.2B	17.4B	17.4B	17.5B	17C
1.7	0.25	18A	18.1B	18.2B	18.3B	18.4B	18.5B	18C
	.5	19A	19.1B	19.2B	19.3B	19.4B	19.5B	19C
	.75	20A	20.1B	20.2B	20.3B	20.4B	20.5B	20C
	1.0	21A	21.1B	21.2B	21.3B	21.4B	21.5B	21C
	1.25 (homogeneous)	---	22.1D	22.2D	22.3D	22.4D	22.5D	---
	1.25 (heterogeneous)	---	22.1E	22.2E	22.3E	22.4E	22.5E	---
2.0	0.25	23A	23.1B	23.2B	23.3B	23.4B	23.5B	23C
	.5	24A	24.1B	24.2B	24.3B	24.4B	24.5B	24C
	.75	25A	25.1B	25.2B	25.3B	25.4B	25.5B	25C
	1.0	26A	26.1B	26.2B	26.3B	26.4B	26.5B	26C
	1.25 (homogeneous)	---	27.1D	27.2D	27.3D	27.4D	27.5D	---
	1.25 (heterogeneous)	---	27.1E	27.2E	27.3E	27.4E	27.5E	---
2.1	0.25	28A	28.1B	28.2B	28.3B	28.4B	28.5B	28C
	.5	29A	29.1B	29.2B	29.3B	29.4B	29.5B	29C
	.75	30A	30.1B	30.2B	30.3B	30.4B	30.5B	30C
	1.0	31A	31.1B	31.2B	31.3B	31.4B	31.5B	31C
	1.25 (homogeneous)	---	32.1D	32.2D	32.3D	32.4D	32.5D	---
	1.25 (heterogeneous)	---	32.1E	32.2E	32.3E	32.4E	32.5E	---

TABLE 1A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

DRY AIR ONLY; F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO= 0.0015; MW= 28.9651;
GASEOUS COMPOSITION: N2= .78084; O2= .20948; AR= .00937; CO2= .00032

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7649-3	8.8247-2	-103.0	7.7810	7.1200	6.4591	5.7981	5.3361	1.0079	1.3982	283.3	133	183	.7339	200
210	1.6809-3	8.4045-2	-92.9	7.8301	7.1692	6.5082	5.8473	5.3853	1.0069	1.3987	290.4	139	191	.7321	210
220	1.6045-3	8.0225-2	-82.8	7.8770	7.2160	6.5550	5.8941	5.4321	1.0062	1.3992	297.3	144	199	.7301	220
230	1.5347-3	7.6737-2	-72.8	7.9217	7.2607	6.5998	5.9388	5.4768	1.0055	1.3995	304.0	150	207	.7282	230
240	1.4708-3	7.3539-2	-62.7	7.9644	7.3035	6.6425	5.9816	5.5196	1.0050	1.3998	310.5	155	215	.7263	240
250	1.4120-3	7.0598-2	-52.7	8.0055	7.3445	6.6836	6.0226	5.5606	1.0047	1.4000	317.0	160	222	.7245	250
260	1.3576-3	6.7882-2	-42.6	8.0449	7.3839	6.7230	6.0620	5.6000	1.0045	1.4001	323.3	165	230	.7230	260
270	1.3074-3	6.5368-2	-32.6	8.0828	7.4218	6.7609	6.0999	5.6379	1.0044	1.4002	329.4	170	237	.7216	270
280	1.2607-3	6.3034-2	-22.5	8.1193	7.4583	6.7974	6.1364	5.6744	1.0044	1.4001	335.5	175	245	.7206	280
290	1.2172-3	6.0860-2	-12.5	8.1545	7.4936	6.8326	6.1717	5.7097	1.0046	1.4001	341.4	180	252	.7197	290
298	1.1839-3	5.9196-2	-4.3	8.1824	7.5214	6.8605	6.1995	5.7375	1.0048	1.3999	346.1	184	257	.7191	298
300	1.1766-3	5.8831-2	-2.4	8.1886	7.5277	6.8667	6.2057	5.7438	1.0048	1.3999	347.2	185	259	.7190	300
310	1.1387-3	5.6934-2	7.6	8.2216	7.5606	6.8997	6.2387	5.7767	1.0052	1.3997	352.9	190	265	.7188	310
320	1.1031-3	5.5154-2	17.7	8.2535	7.5925	6.9316	6.2706	5.8086	1.0057	1.3994	358.5	194	272	.7188	320
330	1.0697-3	5.3483-2	27.7	8.2844	7.6235	6.9625	6.3016	5.8396	1.0063	1.3991	364.0	199	279	.7188	330
340	1.0382-3	5.1910-2	37.8	8.3145	7.6535	6.9926	6.3316	5.8696	1.0071	1.3987	369.5	204	285	.7188	340
350	1.0085-3	5.0427-2	47.9	8.3437	7.6827	7.0218	6.3608	5.8988	1.0079	1.3982	374.8	208	292	.7189	350
360	9.8052-4	4.9026-2	57.9	8.3721	7.7112	7.0502	6.3892	5.9273	1.0088	1.3977	380.0	212	298	.7189	360
370	9.5402-4	4.7701-2	68.0	8.3998	7.7388	7.0778	6.4169	5.9549	1.0098	1.3972	385.2	217	304	.7189	370
380	9.2892-4	4.6446-2	78.1	8.4267	7.7657	7.1048	6.4438	5.9818	1.0109	1.3966	390.3	221	311	.7189	380
390	9.0510-4	4.5255-2	88.3	8.4530	7.7920	7.1311	6.4701	6.0081	1.0120	1.3959	395.3	225	317	.7188	390
400	8.8247-4	4.4124-2	98.4	8.4786	7.8177	7.1567	6.4957	6.0338	1.0133	1.3952	400.3	229	323	.7188	400
410	8.6095-4	4.3047-2	108.5	8.5036	7.8427	7.1817	6.5208	6.0588	1.0146	1.3945	405.1	234	330	.7187	410
420	8.4045-4	4.2022-2	118.7	8.5281	7.8672	7.2062	6.5453	6.0833	1.0161	1.3938	409.9	238	336	.7186	420
430	8.2090-4	4.1045-2	128.8	8.5520	7.8911	7.2301	6.5692	6.1072	1.0175	1.3930	414.6	242	342	.7184	430
440	8.0225-4	4.0112-2	139.0	8.5755	7.9145	7.2535	6.5926	6.1306	1.0191	1.3921	419.3	246	348	.7183	440
450	7.8442-4	3.9221-2	149.2	8.5984	7.9374	7.2765	6.6155	6.1535	1.0207	1.3913	423.9	250	355	.7182	450
460	7.6737-4	3.8368-2	159.4	8.6208	7.9599	7.2989	6.6380	6.1760	1.0224	1.3904	428.5	253	361	.7181	460
470	7.5104-4	3.7552-2	169.7	8.6428	7.9819	7.3209	6.6600	6.1980	1.0241	1.3894	433.0	257	367	.7180	470
480	7.3539-4	3.6770-2	179.9	8.6644	8.0035	7.3425	6.6815	6.2196	1.0259	1.3885	437.4	261	373	.7179	480
490	7.2038-4	3.6019-2	190.2	8.6856	8.0246	7.3637	6.7027	6.2407	1.0278	1.3875	441.8	265	379	.7178	490
500	7.0598-4	3.5299-2	200.5	8.7064	8.0454	7.3845	6.7235	6.2615	1.0297	1.3865	446.1	269	385	.7178	500
510	6.9213-4	3.4607-2	210.8	8.7268	8.0658	7.4049	6.7439	6.2819	1.0317	1.3855	450.4	272	392	.7178	510
520	6.7882-4	3.3941-2	221.1	8.7468	8.0859	7.4249	6.7640	6.3020	1.0337	1.3845	454.6	276	398	.7178	520
530	6.6602-4	3.3301-2	231.5	8.7665	8.1056	7.4446	6.7837	6.3217	1.0357	1.3834	458.8	280	404	.7178	530
540	6.5368-4	3.2684-2	241.8	8.7859	8.1250	7.4640	6.8031	6.3411	1.0378	1.3823	462.9	283	410	.7179	540
550	6.4180-4	3.2090-2	252.2	8.8050	8.1440	7.4831	6.8221	6.3601	1.0399	1.3813	467.0	287	416	.7179	550
560	6.3034-4	3.1517-2	262.6	8.8237	8.1628	7.5018	6.8409	6.3789	1.0421	1.3802	471.0	291	422	.7179	560
570	6.1928-4	3.0964-2	273.1	8.8422	8.1812	7.5203	6.8593	6.3974	1.0443	1.3791	475.0	294	428	.7179	570
580	6.0860-4	3.0430-2	283.5	8.8604	8.1994	7.5385	6.8775	6.4155	1.0465	1.3780	479.0	298	434	.7179	580
590	5.9828-4	2.9914-2	294.0	8.8783	8.2173	7.5564	6.8954	6.4334	1.0488	1.3768	482.9	301	440	.7179	590

TABLE 1A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

DRY AIR ONLY; F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO= 0.0015; MW= 28.9651;
GASEOUS COMPOSITION: N2= .78084; O2= .20948; AR= .00937; CO2= .00032

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
600	5.8831-4	2.9416-2	304.5	8.8959	8.2350	7.5740	6.9131	6.4511	1.0510	1.3757	486.8	304	446	.7179	600
610	5.7867-4	2.8933-2	315.0	8.9133	8.2524	7.5914	6.9305	6.4685	1.0533	1.3746	490.6	308	452	.7178	610
620	5.6934-4	2.8467-2	325.6	8.9305	8.2695	7.6086	6.9476	6.4856	1.0557	1.3735	494.4	311	458	.7177	620
630	5.6030-4	2.8015-2	336.1	8.9474	8.2864	7.6255	6.9645	6.5025	1.0580	1.3723	498.2	315	464	.7176	630
640	5.5154-4	2.7577-2	346.7	8.9641	8.3031	7.6422	6.9812	6.5192	1.0604	1.3712	501.9	318	470	.7175	640
650	5.4306-4	2.7153-2	357.3	8.9805	8.3196	7.6586	6.9977	6.5357	1.0627	1.3701	505.6	322	476	.7173	650
660	5.3483-4	2.6742-2	368.0	8.9968	8.3358	7.6749	7.0139	6.5519	1.0651	1.3689	509.3	325	482	.7172	660
670	5.2685-4	2.6342-2	378.6	9.0128	8.3519	7.6909	7.0299	6.5680	1.0675	1.3678	512.9	328	489	.7171	670
680	5.1910-4	2.5955-2	389.3	9.0286	8.3677	7.7067	7.0458	6.5838	1.0699	1.3667	516.5	332	495	.7169	680
690	5.1158-4	2.5579-2	400.0	9.0443	8.3833	7.7224	7.0614	6.5994	1.0723	1.3655	520.1	335	501	.7168	690
700	5.0427-4	2.5213-2	410.8	9.0597	8.3988	7.7378	7.0769	6.6149	1.0747	1.3644	523.6	338	507	.7167	700
710	4.9717-4	2.4858-2	421.5	9.0750	8.4140	7.7531	7.0921	6.6301	1.0771	1.3633	527.1	341	513	.7165	710
720	4.9026-4	2.4513-2	432.3	9.0901	8.4291	7.7682	7.1072	6.6452	1.0795	1.3622	530.6	345	519	.7164	720
730	4.8355-4	2.4177-2	443.1	9.1050	8.4440	7.7831	7.1221	6.6601	1.0819	1.3611	534.1	348	525	.7163	730
740	4.7701-4	2.3851-2	453.9	9.1197	8.4588	7.7978	7.1368	6.6749	1.0843	1.3600	537.5	351	531	.7161	740
750	4.7065-4	2.3533-2	464.8	9.1343	8.4733	7.8124	7.1514	6.6894	1.0867	1.3589	540.9	354	537	.7160	750
760	4.6446-4	2.3223-2	475.7	9.1487	8.4877	7.8268	7.1658	6.7038	1.0891	1.3579	544.3	357	544	.7159	760
770	4.5843-4	2.2921-2	486.6	9.1629	8.5020	7.8410	7.1801	6.7181	1.0915	1.3568	547.6	360	550	.7158	770
780	4.5255-4	2.2627-2	497.5	9.1770	8.5161	7.8551	7.1942	6.7322	1.0939	1.3558	551.0	364	556	.7157	780
790	4.4682-4	2.2341-2	508.5	9.1910	8.5300	7.8691	7.2081	6.7461	1.0963	1.3547	554.3	367	562	.7156	790
800	4.4124-4	2.2062-2	519.4	9.2048	8.5438	7.8829	7.2219	6.7599	1.0986	1.3537	557.6	370	568	.7155	800
810	4.3579-4	2.1789-2	530.4	9.2185	8.5575	7.8966	7.2356	6.7736	1.1009	1.3527	560.8	373	574	.7154	810
820	4.3047-4	2.1524-2	541.5	9.2320	8.5710	7.9101	7.2491	6.7871	1.1033	1.3517	564.1	376	580	.7153	820
830	4.2529-4	2.1264-2	552.5	9.2454	8.5844	7.9235	7.2625	6.8005	1.1056	1.3507	567.3	379	586	.7152	830
840	4.2022-4	2.1011-2	563.6	9.2586	8.5977	7.9367	7.2758	6.8138	1.1078	1.3497	570.5	382	592	.7151	840
850	4.1528-4	2.0764-2	574.7	9.2717	8.6108	7.9498	7.2889	6.8269	1.1101	1.3488	573.7	385	598	.7150	850
860	4.1045-4	2.0523-2	585.8	9.2847	8.6238	7.9628	7.3019	6.8399	1.1123	1.3478	576.8	388	603	.7149	860
870	4.0573-4	2.0287-2	596.9	9.2976	8.6367	7.9757	7.3148	6.8528	1.1146	1.3469	580.0	391	609	.7148	870
880	4.0112-4	2.0056-2	608.1	9.3104	8.6494	7.9885	7.3275	6.8655	1.1168	1.3460	583.1	394	615	.7148	880
890	3.9662-4	1.9831-2	619.2	9.3230	8.6620	8.0011	7.3401	6.8781	1.1189	1.3451	586.2	397	621	.7147	890
900	3.9221-4	1.9610-2	630.4	9.3355	8.6746	8.0136	7.3526	6.8907	1.1211	1.3442	589.3	400	627	.7146	900
910	3.8790-4	1.9395-2	641.7	9.3479	8.6870	8.0260	7.3650	6.9031	1.1232	1.3433	592.4	403	633	.7145	910
920	3.8368-4	1.9184-2	652.9	9.3602	8.6992	8.0383	7.3773	6.9153	1.1253	1.3424	595.4	405	639	.7145	920
930	3.7956-4	1.8978-2	664.2	9.3724	8.7114	8.0505	7.3895	6.9275	1.1274	1.3416	598.5	408	644	.7144	930
940	3.7552-4	1.8776-2	675.5	9.3844	8.7235	8.0625	7.4016	6.9396	1.1294	1.3408	601.5	411	650	.7143	940
950	3.7157-4	1.8578-2	686.8	9.3964	8.7355	8.0745	7.4135	6.9516	1.1314	1.3400	604.5	414	656	.7143	950
960	3.6770-4	1.8385-2	698.1	9.4083	8.7473	8.0864	7.4254	6.9634	1.1334	1.3392	607.5	417	662	.7142	960
970	3.6391-4	1.8195-2	709.4	9.4200	8.7591	8.0981	7.4372	6.9752	1.1353	1.3384	610.5	420	667	.7142	970
980	3.6019-4	1.8010-2	720.8	9.4317	8.7707	8.1098	7.4488	6.9868	1.1372	1.3376	613.4	423	673	.7141	980
990	3.5655-4	1.7828-2	732.2	9.4432	8.7823	8.1213	7.4604	6.9984	1.1391	1.3369	616.4	425	679	.7141	990

TABLE 1A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

DRY AIR ONLY; F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO= 0.0015; MW= 28.9651;
GASEOUS COMPOSITION: N2= .78084; O2= .20948; AR= .00937; CO2= .00032

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5299-4	1.7649-2	743.6	9.4547	8.7937	8.1328	7.4718	7.0098	1.1410	1.3362	619.3	428	684	.7140	1000
1050	3.3618-4	1.6809-2	800.8	9.5106	8.8496	8.1887	7.5277	7.0657	1.1495	1.3328	633.8	442	711	.7142	1050
1100	3.2090-4	1.6045-2	858.5	9.5642	8.9033	8.2423	7.5814	7.1194	1.1576	1.3297	648.0	455	738	.7145	1100
1150	3.0695-4	1.5347-2	916.6	9.6159	8.9549	8.2939	7.6330	7.1710	1.1653	1.3269	661.8	468	764	.7148	1150
1200	2.9416-4	1.4708-2	975.0	9.6656	9.0046	8.3437	7.6827	7.2207	1.1726	1.3241	675.4	481	789	.7152	1200
1250	2.8239-4	1.4120-2	1033.8	9.7136	9.0527	8.3917	7.7308	7.2688	1.1796	1.3216	688.6	494	814	.7156	1250
1300	2.7153-4	1.3576-2	1093.0	9.7600	9.0991	8.4381	7.7771	7.3152	1.1863	1.3192	701.6	506	839	.7160	1300
1350	2.6147-4	1.3074-2	1152.5	9.8049	9.1439	8.4830	7.8220	7.3600	1.1926	1.3170	714.4	519	863	.7165	1350
1400	2.5213-4	1.2607-2	1212.2	9.8484	9.1874	8.5265	7.8655	7.4035	1.1987	1.3149	726.9	531	887	.7169	1400
1450	2.4344-4	1.2172-2	1272.3	9.8906	9.2296	8.5686	7.9077	7.4457	1.2044	1.3129	739.2	542	911	.7172	1450
1500	2.3533-4	1.1766-2	1332.7	9.9315	9.2705	8.6096	7.9486	7.4866	1.2099	1.3111	751.3	554	934	.7175	1500
1550	2.2773-4	1.1387-2	1393.3	9.9712	9.3103	8.6493	7.9884	7.5264	1.2151	1.3093	763.2	566	958	.7175	1550
1600	2.2062-4	1.1031-2	1454.2	10.0099	9.3489	8.6880	8.0270	7.5650	1.2200	1.3077	775.0	577	981	.7174	1600
1650	2.1393-4	1.0697-2	1515.3	10.0475	9.3865	8.7256	8.0646	7.6027	1.2247	1.3061	786.5	588	1004	.7173	1650
1700	2.0764-4	1.0382-2	1576.7	10.0841	9.4232	8.7622	8.1013	7.6393	1.2291	1.3047	797.9	599	1027	.7172	1700
1750	2.0171-4	1.0085-2	1638.2	10.1198	9.4589	8.7979	8.1370	7.6750	1.2334	1.3033	809.1	610	1050	.7170	1750
1800	1.9610-4	9.8052-3	1700.0	10.1546	9.4937	8.8327	8.1718	7.7098	1.2374	1.3020	820.2	621	1072	.7169	1800
1850	1.9080-4	9.5402-3	1762.0	10.1886	9.5276	8.8667	8.2057	7.7437	1.2412	1.3008	831.1	632	1094	.7168	1850
1900	1.8578-4	9.2892-3	1824.1	10.2217	9.5608	8.8998	8.2389	7.7769	1.2448	1.2997	841.9	643	1116	.7167	1900
1950	1.8102-4	9.0510-3	1886.4	10.2541	9.5932	8.9322	8.2712	7.8093	1.2483	1.2986	852.6	653	1138	.7167	1950
2000	1.7649-4	8.8247-3	1948.9	10.2858	9.6248	8.9638	8.3029	7.8409	1.2515	1.2976	863.1	664	1159	.7166	2000
2050	1.7219-4	8.6095-3	2011.6	10.3167	9.6557	8.9948	8.3338	7.8718	1.2546	1.2967	873.5	674	1180	.7168	2050
2100	1.6809-4	8.4045-3	2074.4	10.3470	9.6860	9.0251	8.3641	7.9021	1.2576	1.2958	883.8	684	1200	.7171	2100
2150	1.6418-4	8.2090-3	2137.3	10.3766	9.7156	9.0547	8.3937	7.9317	1.2604	1.2949	894.0	695	1220	.7173	2150
2200	1.6045-4	8.0225-3	2200.4	10.4056	9.7446	9.0837	8.4227	7.9607	1.2631	1.2941	904.0	705	1240	.7176	2200
2250	1.5688-4	7.8442-3	2263.6	10.4340	9.7731	9.1121	8.4511	7.9892	1.2656	1.2933	914.0	715	1260	.7179	2250
2300	1.5347-4	7.6737-3	2327.0	10.4619	9.8009	9.1399	8.4790	8.0170	1.2681	1.2926	923.8	725	1279	.7183	2300
2350	1.5021-4	7.5104-3	2390.5	10.4892	9.8282	9.1672	8.5063	8.0443	1.2704	1.2919	933.5	735	1298	.7187	2350
2400	1.4708-4	7.3539-3	2454.0	10.5159	9.8550	9.1940	8.5331	8.0711	1.2726	1.2913	943.2	744	1317	.7191	2400
2450	1.4408-4	7.2038-3	2517.7	10.5422	9.8812	9.2203	8.5593	8.0973	1.2747	1.2906	952.7	754	1336	.7195	2450
2500	1.4120-4	7.0598-3	2581.5	10.5680	9.9070	9.2460	8.5851	8.1231	1.2767	1.2900	962.2	764	1354	.7200	2500
2550	1.3843-4	6.9213-3	2645.4	10.5933	9.9323	9.2713	8.6104	8.1484	1.2787	1.2895	971.5	773	1373	.7202	2550
2600	1.3576-4	6.7882-3	2709.4	10.6181	9.9571	9.2962	8.6352	8.1733	1.2806	1.2889	980.8	783	1391	.7204	2600
2650	1.3320-4	6.6602-3	2773.4	10.6425	9.9816	9.3206	8.6596	8.1977	1.2824	1.2884	990.0	792	1410	.7206	2650
2700	1.3074-4	6.5368-3	2837.6	10.6665	10.0055	9.3446	8.6836	8.2216	1.2841	1.2879	999.1	802	1428	.7208	2700
2750	1.2836-4	6.4180-3	2901.8	10.6901	10.0291	9.3682	8.7072	8.2452	1.2858	1.2874	1008.1	811	1447	.7210	2750
2800	1.2607-4	6.3034-3	2966.2	10.7133	10.0523	9.3914	8.7304	8.2684	1.2874	1.2869	1017.0	820	1465	.7211	2800
2850	1.2386-4	6.1928-3	3030.6	10.7361	10.0751	9.4142	8.7532	8.2912	1.2890	1.2865	1025.9	830	1483	.7212	2850
2900	1.2172-4	6.0860-3	3095.1	10.7585	10.0975	9.4366	8.7756	8.3136	1.2905	1.2861	1034.7	839	1501	.7213	2900
2950	1.1966-4	5.9829-3	3159.6	10.7806	10.1196	9.4587	8.7977	8.3357	1.2920	1.2856	1043.4	848	1519	.7213	2950
3000	1.1766-4	5.8831-3	3224.3	10.8023	10.1413	9.4804	8.8194	8.3574	1.2935	1.2852	1052.0	857	1537	.7213	3000

TABLE 1.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

DRY AIR ONLY; F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO = 0.0015; P = 1.01325 KPA (0.01 ATM)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9221-6	630.5	9.3356	28.965	400	1.0000	-1.0000	1.1215	1.3440	589.2	627	.715	1.1211	1.3442	589.3	627	.715
950	3.7157-6	686.8	9.3965	28.965	414	1.0000	-1.0000	1.1322	1.3397	604.4	656	.714	1.1314	1.3400	604.5	656	.714
1000	3.5299-6	743.7	9.4548	28.965	428	1.0000	-1.0000	1.1422	1.3357	619.2	685	.714	1.1410	1.3362	619.3	684	.714
1050	3.3618-6	801.0	9.5108	28.965	442	1.0000	-1.0000	1.1513	1.3321	633.6	712	.714	1.1495	1.3328	633.8	711	.714
1100	3.2090-6	858.8	9.5645	28.965	455	1.0000	-1.0000	1.1602	1.3287	647.7	739	.715	1.1576	1.3297	648.0	738	.714
1150	3.0695-6	917.0	9.6163	28.965	468	1.0000	-1.0000	1.1690	1.3255	661.5	766	.715	1.1653	1.3269	661.8	764	.715
1200	2.9416-6	975.7	9.6662	28.965	481	1.0000	-1.0000	1.1777	1.3223	674.9	792	.715	1.1726	1.3241	675.4	789	.715
1250	2.8239-6	1034.8	9.7145	28.965	494	1.0000	-1.0000	1.1864	1.3192	688.0	819	.716	1.1796	1.3216	688.6	814	.716
1300	2.7153-6	1094.3	9.7612	28.965	506	1.0000	-1.0000	1.1951	1.3161	700.8	845	.716	1.1863	1.3192	701.6	839	.716
1350	2.6147-6	1154.3	9.8064	28.965	519	1.0000	-1.0000	1.2039	1.3131	713.3	871	.717	1.1926	1.3170	714.4	863	.716
1400	2.5213-6	1214.7	9.8504	28.965	531	1.0000	-1.0000	1.2128	1.3101	725.6	898	.717	1.1987	1.3149	726.9	887	.717
1450	2.4344-6	1275.6	9.8931	28.965	542	1.0001	-1.0000	1.2221	1.3071	737.6	924	.717	1.2044	1.3129	739.2	911	.717
1500	2.3532-6	1337.0	9.9347	28.965	554	1.0002	-1.0000	1.2319	1.3039	749.3	952	.717	1.2099	1.3111	751.3	934	.718
1550	2.2773-6	1398.8	9.9753	28.965	566	1.0003	-1.0000	1.2425	1.3007	760.7	980	.717	1.2151	1.3093	763.3	958	.717
1600	2.2061-6	1461.2	10.0149	28.964	577	1.0006	-1.0000	1.2543	1.2972	771.9	1010	.716	1.2200	1.3077	775.0	981	.717
1650	2.1392-6	1524.3	10.0537	28.963	588	1.0011	-1.0000	1.2679	1.2935	782.7	1043	.715	1.2247	1.3062	786.6	1004	.717
1700	2.0762-6	1588.1	10.0918	28.962	599	1.0018	-1.0001	1.2841	1.2892	793.2	1078	.714	1.2292	1.3047	798.0	1027	.717
1750	2.0167-6	1652.7	10.1293	28.960	610	1.0030	-1.0001	1.3040	1.2844	803.3	1119	.712	1.2334	1.3034	809.2	1050	.717
1800	1.9605-6	1718.5	10.1663	28.957	621	1.0047	-1.0001	1.3289	1.2787	812.9	1166	.708	1.2374	1.3021	820.4	1072	.717
1850	1.9072-6	1785.7	10.2032	28.952	632	1.0072	-1.0002	1.3606	1.2721	822.1	1221	.704	1.2412	1.3010	831.4	1095	.717
1900	1.8566-6	1854.7	10.2400	28.946	643	1.0108	-1.0003	1.4013	1.2644	830.7	1290	.699	1.2449	1.2999	842.3	1116	.717
1950	1.8084-6	1926.1	10.2770	28.936	653	1.0159	-1.0005	1.4536	1.2555	838.7	1374	.691	1.2484	1.2990	853.1	1138	.717
2000	1.7623-6	2000.4	10.3146	28.922	664	1.0230	-1.0008	1.5205	1.2455	846.2	1479	.683	1.2517	1.2982	863.9	1160	.717
2050	1.7181-6	2078.4	10.3532	28.902	674	1.0324	-1.0011	1.6056	1.2344	853.2	1610	.673	1.2548	1.2974	874.7	1180	.717
2100	1.6757-6	2161.3	10.3931	28.875	685	1.0450	-1.0015	1.7127	1.2225	859.8	1773	.661	1.2579	1.2969	885.5	1201	.717
2150	1.6347-6	2250.1	10.4349	28.839	695	1.0612	-1.0022	1.8460	1.2103	866.1	1976	.649	1.2608	1.2965	896.4	1222	.717
2200	1.5949-6	2346.4	10.4792	28.792	705	1.0820	-1.0029	2.0097	1.1980	872.4	2225	.637	1.2636	1.2962	907.5	1242	.717
2250	1.5562-6	2451.7	10.5265	28.731	715	1.1079	-1.0040	2.2079	1.1861	878.8	2527	.625	1.2663	1.2962	918.7	1262	.717
2300	1.5182-6	2567.8	10.5775	28.654	725	1.1397	-1.0053	2.4442	1.1750	885.6	2889	.613	1.2690	1.2964	930.2	1282	.718
2350	1.4809-6	2696.8	10.6330	28.556	735	1.1780	-1.0068	2.7209	1.1650	892.8	3313	.604	1.2716	1.2970	942.0	1302	.718
2400	1.4439-6	2840.6	10.6935	28.436	745	1.2230	-1.0088	3.0387	1.1563	900.8	3800	.596	1.2742	1.2978	954.3	1323	.718
2450	1.4072-6	3001.3	10.7598	28.291	755	1.2747	-1.0110	3.3958	1.1489	909.5	4346	.590	1.2767	1.2990	967.1	1343	.717
2500	1.3707-6	3180.7	10.8323	28.118	765	1.3323	-1.0136	3.7866	1.1428	919.1	4941	.586	1.2792	1.3007	980.6	1364	.717
2550	1.3342-6	3380.4	10.9113	27.917	775	1.3945	-1.0165	4.2009	1.1381	929.7	5564	.585	1.2817	1.3027	994.7	1386	.717
2600	1.2977-6	3601.0	10.9970	27.687	785	1.4589	-1.0196	4.6228	1.1346	941.2	6189	.586	1.2842	1.3052	1009.5	1408	.716
2650	1.2614-6	3842.4	11.0890	27.429	795	1.5222	-1.0228	5.0302	1.1323	953.7	6777	.590	1.2866	1.3082	1025.1	1431	.715
2700	1.2253-6	4103.3	11.1865	27.148	805	1.5802	-1.0258	5.3953	1.1311	967.1	7284	.596	1.2891	1.3116	1041.4	1454	.714
2750	1.1898-6	4380.7	11.2883	26.848	816	1.6280	-1.0285	5.6860	1.1310	981.4	7664	.605	1.2915	1.3154	1058.4	1478	.713
2800	1.1550-6	4670.1	11.3926	26.537	826	1.6608	-1.0306	5.8707	1.1320	996.5	7874	.616	1.2939	1.3195	1075.9	1503	.711
2850	1.1214-6	4965.6	11.4971	26.225	837	1.6745	-1.0319	5.9232	1.1340	1012.3	7887	.628	1.2962	1.3238	1093.7	1528	.710
2900	1.0892-6	5260.0	11.5996	25.920	847	1.6669	-1.0322	5.8302	1.1373	1028.6	7696	.642	1.2985	1.3281	1111.5	1554	.708
2950	1.0589-6	5546.2	11.6974	25.632	858	1.6382	-1.0314	5.5958	1.1417	1045.2	7321	.656	1.3006	1.3323	1129.1	1580	.707
3000	1.0305-6	5817.6	11.7887	25.368	869	1.5916	-1.0298	5.2433	1.1476	1062.2	6807	.669	1.3026	1.3362	1146.2	1605	.705

TABLE 1.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

DRY AIR ONLY; F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO = 0.0015; P = 10.1325 KPA (0.10 ATM)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO W/CM K	PRAN	CP	GAM	VS	COND MICRO W/CM K	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S			J/G K		M/S		
900	3.9221-5	630.5	8.6746	28.965	400	1.0000	-1.0000	1.1215	1.3440	589.2	627	.715	1.1211	1.3442	589.3	627	.715
950	3.7157-5	686.8	8.7355	28.965	414	1.0000	-1.0000	1.1322	1.3397	604.4	656	.714	1.1314	1.3400	604.5	656	.714
1000	3.5299-5	743.7	8.7938	28.965	428	1.0000	-1.0000	1.1422	1.3357	619.2	685	.714	1.1410	1.3362	619.3	684	.714
1050	3.3618-5	801.0	8.8498	28.965	442	1.0000	-1.0000	1.1513	1.3321	633.6	712	.714	1.1495	1.3328	633.8	711	.714
1100	3.2090-5	858.8	8.9036	28.965	455	1.0000	-1.0000	1.1602	1.3287	647.7	739	.715	1.1576	1.3297	648.0	738	.714
1150	3.0695-5	917.0	8.9553	28.965	468	1.0000	-1.0000	1.1690	1.3255	661.5	766	.715	1.1653	1.3269	661.8	764	.715
1200	2.9416-5	975.7	9.0053	28.965	481	1.0000	-1.0000	1.1777	1.3223	674.9	792	.715	1.1726	1.3241	675.4	789	.715
1250	2.8239-5	1034.8	9.0535	28.965	494	1.0000	-1.0000	1.1864	1.3192	688.0	819	.716	1.1796	1.3216	688.6	814	.716
1300	2.7153-5	1094.3	9.1002	28.965	506	1.0000	-1.0000	1.1950	1.3161	700.8	845	.716	1.1863	1.3192	701.6	839	.716
1350	2.6147-5	1154.3	9.1455	28.965	519	1.0000	-1.0000	1.2037	1.3132	713.4	871	.717	1.1926	1.3170	714.4	863	.716
1400	2.5213-5	1214.7	9.1894	28.965	531	1.0000	-1.0000	1.2125	1.3102	725.6	897	.717	1.1987	1.3149	726.9	887	.717
1450	2.4344-5	1275.6	9.2321	28.965	542	1.0000	-1.0000	1.2213	1.3073	737.6	923	.717	1.2044	1.3129	739.2	911	.717
1500	2.3532-5	1336.8	9.2737	28.965	554	1.0001	-1.0000	1.2304	1.3043	749.4	950	.718	1.2099	1.3110	751.3	934	.718
1550	2.2773-5	1398.6	9.3142	28.965	566	1.0001	-1.0000	1.2398	1.3014	760.9	977	.717	1.2151	1.3093	763.2	958	.717
1600	2.2062-5	1460.8	9.3537	28.965	577	1.0002	-1.0000	1.2496	1.2984	772.2	1005	.717	1.2200	1.3077	775.0	981	.717
1650	2.1393-5	1523.6	9.3923	28.965	588	1.0003	-1.0000	1.2600	1.2953	783.3	1034	.717	1.2247	1.3061	786.5	1004	.717
1700	2.0763-5	1586.8	9.4301	28.964	599	1.0006	-1.0000	1.2712	1.2921	794.1	1064	.716	1.2291	1.3047	797.9	1027	.717
1750	2.0170-5	1650.7	9.4671	28.964	610	1.0009	-1.0000	1.2836	1.2887	804.6	1095	.715	1.2334	1.3034	809.2	1050	.717
1800	1.9609-5	1715.2	9.5034	28.963	621	1.0015	-1.0000	1.2976	1.2851	814.9	1129	.714	1.2374	1.3021	820.3	1072	.717
1850	1.9078-5	1780.5	9.5392	28.961	632	1.0023	-1.0001	1.3137	1.2812	824.9	1165	.713	1.2412	1.3009	831.2	1095	.717
1900	1.8574-5	1846.6	9.5745	28.959	643	1.0034	-1.0001	1.3327	1.2768	834.6	1206	.711	1.2448	1.2998	842.0	1116	.717
1950	1.8096-5	1913.8	9.6094	28.956	653	1.0051	-1.0002	1.3554	1.2720	843.9	1251	.708	1.2483	1.2988	852.8	1138	.717
2000	1.7641-5	1982.3	9.6440	28.951	664	1.0073	-1.0002	1.3826	1.2666	852.9	1303	.704	1.2515	1.2978	863.4	1159	.717
2050	1.7207-5	2052.2	9.6786	28.945	674	1.0103	-1.0003	1.4157	1.2607	861.6	1364	.700	1.2546	1.2969	873.9	1180	.717
2100	1.6792-5	2124.0	9.7132	28.937	685	1.0144	-1.0005	1.4559	1.2540	869.9	1435	.695	1.2576	1.2961	884.4	1201	.717
2150	1.6395-5	2197.9	9.7480	28.925	695	1.0196	-1.0007	1.5047	1.2468	877.8	1519	.688	1.2604	1.2954	894.8	1221	.717
2200	1.6014-5	2274.6	9.7832	28.910	705	1.0265	-1.0010	1.5636	1.2389	885.4	1619	.681	1.2631	1.2948	905.1	1241	.718
2250	1.5648-5	2354.5	9.8191	28.890	715	1.0351	-1.0013	1.6345	1.2306	892.7	1738	.673	1.2657	1.2943	915.5	1261	.718
2300	1.5294-5	2438.3	9.8559	28.864	725	1.0459	-1.0017	1.7192	1.2218	899.7	1880	.663	1.2682	1.2939	925.9	1281	.718
2350	1.4952-5	2526.7	9.8940	28.832	735	1.0592	-1.0023	1.8193	1.2130	906.6	2047	.653	1.2706	1.2936	936.3	1300	.718
2400	1.4620-5	2620.5	9.9335	28.791	745	1.0755	-1.0030	1.9367	1.2041	913.5	2243	.643	1.2729	1.2935	946.8	1320	.719
2450	1.4296-5	2720.6	9.9748	28.741	755	1.0949	-1.0038	2.0728	1.1955	920.5	2471	.633	1.2751	1.2935	957.5	1339	.719
2500	1.3980-5	2828.1	10.0182	28.679	765	1.1179	-1.0048	2.2290	1.1872	927.6	2733	.624	1.2772	1.2936	968.3	1359	.719
2550	1.3671-5	2943.9	10.0640	28.605	775	1.1446	-1.0061	2.4059	1.1796	935.0	3032	.615	1.2793	1.2940	979.3	1378	.719
2600	1.3366-5	3069.0	10.1126	28.517	785	1.1753	-1.0075	2.6037	1.1726	942.8	3366	.607	1.2814	1.2946	990.6	1398	.719
2650	1.3066-5	3204.6	10.1643	28.412	794	1.2098	-1.0091	2.8215	1.1664	951.1	3735	.600	1.2834	1.2954	1002.3	1419	.719
2700	1.2769-5	3351.5	10.2192	28.291	804	1.2481	-1.0110	3.0575	1.1611	959.8	4134	.595	1.2853	1.2964	1014.2	1439	.718
2750	1.2476-5	3510.6	10.2775	28.152	814	1.2896	-1.0131	3.3082	1.1565	969.2	4557	.591	1.2873	1.2977	1026.6	1460	.718
2800	1.2184-5	3682.5	10.3395	27.995	824	1.3336	-1.0154	3.5689	1.1529	979.1	4995	.589	1.2892	1.2993	1039.5	1481	.717
2850	1.1895-5	3867.5	10.4050	27.819	834	1.3790	-1.0178	3.8327	1.1500	989.7	5434	.588	1.2911	1.3012	1052.8	1503	.716
2900	1.1609-5	4065.7	10.4739	27.625	844	1.4244	-1.0203	4.0910	1.1480	1001.0	5858	.590	1.2930	1.3034	1066.6	1526	.716
2950	1.1325-5	4276.4	10.5459	27.415	855	1.4680	-1.0229	4.3333	1.1467	1012.9	6249	.593	1.2949	1.3058	1080.9	1549	.715
3000	1.1046-5	4498.5	10.6206	27.191	865	1.5079	-1.0253	4.5480	1.1463	1025.4	6587	.597	1.2968	1.3086	1095.6	1572	.713

TABLE 1.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

DRY AIR ONLY; F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO = 0.0015; P = 101.325 KPA (1.00 ATM)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9221-4	630.5	8.0136	28.965	400	1.0000	-1.0000	1.1215	1.3440	589.2	627	.715	1.1211	1.3442	589.3	627	.715
950	3.7157-4	686.8	8.0746	28.965	414	1.0000	-1.0000	1.1322	1.3397	604.4	656	.714	1.1314	1.3400	604.5	656	.714
1000	3.5299-4	743.7	8.1329	28.965	428	1.0000	-1.0000	1.1422	1.3357	619.2	685	.714	1.1410	1.3362	619.3	684	.714
1050	3.3618-4	801.0	8.1888	28.965	442	1.0000	-1.0000	1.1513	1.3321	633.6	712	.714	1.1495	1.3328	633.8	711	.714
1100	3.2090-4	858.8	8.2426	28.965	455	1.0000	-1.0000	1.1602	1.3287	647.7	739	.715	1.1576	1.3297	648.0	738	.714
1150	3.0695-4	917.0	8.2944	28.965	468	1.0000	-1.0000	1.1690	1.3255	661.5	766	.715	1.1653	1.3269	661.8	764	.715
1200	2.9416-4	975.7	8.3443	28.965	481	1.0000	-1.0000	1.1777	1.3223	674.9	792	.715	1.1726	1.3241	675.4	789	.715
1250	2.8239-4	1034.8	8.3926	28.965	494	1.0000	-1.0000	1.1864	1.3192	688.0	819	.716	1.1796	1.3216	688.6	814	.716
1300	2.7153-4	1094.3	8.4393	28.965	506	1.0000	-1.0000	1.1950	1.3161	700.8	845	.716	1.1863	1.3192	701.6	839	.716
1350	2.6147-4	1154.3	8.4845	28.965	519	1.0000	-1.0000	1.2036	1.3132	713.4	871	.717	1.1926	1.3170	714.4	863	.716
1400	2.5214-4	1214.7	8.5285	28.965	531	1.0000	-1.0000	1.2123	1.3102	725.6	897	.717	1.1987	1.3149	726.9	887	.717
1450	2.4344-4	1275.5	8.5711	28.965	542	1.0000	-1.0000	1.2211	1.3073	737.7	923	.717	1.2044	1.3129	739.2	911	.717
1500	2.3533-4	1336.8	8.6127	28.965	554	1.0000	-1.0000	1.2300	1.3044	749.4	950	.718	1.2099	1.3110	751.3	934	.718
1550	2.2773-4	1398.5	8.6532	28.965	566	1.0000	-1.0000	1.2389	1.3016	761.0	977	.718	1.2151	1.3093	763.2	958	.717
1600	2.2062-4	1460.7	8.6926	28.965	577	1.0001	-1.0000	1.2481	1.2987	772.3	1004	.717	1.2200	1.3077	775.0	981	.717
1650	2.1393-4	1523.4	8.7312	28.965	588	1.0001	-1.0000	1.2575	1.2959	783.4	1031	.717	1.2247	1.3061	786.5	1004	.717
1700	2.0764-4	1586.5	8.7689	28.965	599	1.0002	-1.0000	1.2671	1.2930	794.3	1059	.717	1.2291	1.3047	797.9	1027	.717
1750	2.0171-4	1650.1	8.8058	28.965	610	1.0003	-1.0000	1.2772	1.2901	805.0	1088	.717	1.2334	1.3033	809.1	1050	.717
1800	1.9610-4	1714.2	8.8419	28.964	621	1.0005	-1.0000	1.2877	1.2872	815.5	1117	.716	1.2374	1.3021	820.2	1072	.717
1850	1.9080-4	1778.8	8.8773	28.964	632	1.0007	-1.0000	1.2989	1.2842	825.8	1147	.716	1.2412	1.3009	831.2	1095	.717
1900	1.8577-4	1844.1	8.9121	28.963	643	1.0011	-1.0000	1.3110	1.2811	835.9	1179	.715	1.2448	1.2997	842.0	1116	.717
1950	1.8100-4	1910.0	8.9463	28.962	653	1.0016	-1.0001	1.3242	1.2778	845.8	1212	.714	1.2482	1.2987	852.6	1138	.717
2000	1.7647-4	1976.5	8.9800	28.961	664	1.0023	-1.0001	1.3388	1.2744	855.4	1247	.713	1.2515	1.2977	863.2	1159	.717
2050	1.7215-4	2043.9	9.0133	28.959	674	1.0033	-1.0001	1.3552	1.2709	864.9	1285	.711	1.2546	1.2968	873.6	1180	.717
2100	1.6804-4	2112.1	9.0462	28.956	685	1.0045	-1.0002	1.3738	1.2670	874.1	1326	.710	1.2575	1.2959	884.0	1201	.717
2150	1.6411-4	2181.3	9.0787	28.953	695	1.0062	-1.0002	1.3950	1.2630	883.0	1371	.707	1.2603	1.2951	894.2	1221	.717
2200	1.6035-4	2251.6	9.1111	28.948	705	1.0084	-1.0003	1.4194	1.2586	891.8	1421	.704	1.2630	1.2944	904.4	1241	.718
2250	1.5676-4	2323.3	9.1433	28.941	715	1.0112	-1.0004	1.4476	1.2539	900.3	1478	.701	1.2655	1.2937	914.4	1261	.718
2300	1.5330-4	2396.5	9.1755	28.933	725	1.0147	-1.0006	1.4802	1.2490	908.6	1542	.697	1.2679	1.2931	924.5	1280	.718
2350	1.4999-4	2471.4	9.2077	28.923	735	1.0190	-1.0007	1.5178	1.2437	916.6	1614	.692	1.2702	1.2925	934.4	1300	.719
2400	1.4680-4	2548.4	9.2401	28.910	745	1.0244	-1.0010	1.5611	1.2382	924.5	1696	.686	1.2724	1.2920	944.4	1319	.719
2450	1.4372-4	2627.6	9.2728	28.893	755	1.0308	-1.0012	1.6110	1.2324	932.1	1790	.680	1.2746	1.2916	954.3	1338	.719
2500	1.4075-4	2709.6	9.3059	28.873	765	1.0386	-1.0016	1.6679	1.2265	939.7	1897	.673	1.2766	1.2913	964.2	1357	.720
2550	1.3787-4	2794.6	9.3395	28.848	775	1.0478	-1.0020	1.7327	1.2205	947.1	2018	.665	1.2785	1.2910	974.1	1376	.720
2600	1.3508-4	2883.0	9.3739	28.819	784	1.0587	-1.0025	1.8059	1.2144	954.4	2155	.657	1.2804	1.2909	984.0	1395	.720
2650	1.3237-4	2975.3	9.4090	28.783	794	1.0713	-1.0031	1.8880	1.2084	961.8	2309	.649	1.2822	1.2908	994.0	1414	.720
2700	1.2972-4	3071.9	9.4452	28.741	804	1.0858	-1.0038	1.9796	1.2026	969.2	2482	.641	1.2840	1.2908	1004.1	1434	.720
2750	1.2715-4	3173.4	9.4824	28.692	814	1.1024	-1.0046	2.0808	1.1970	976.7	2673	.633	1.2857	1.2910	1014.3	1453	.720
2800	1.2463-4	3280.2	9.5209	28.634	823	1.1210	-1.0056	2.1917	1.1918	984.3	2883	.626	1.2873	1.2913	1024.6	1472	.720
2850	1.2216-4	3392.7	9.5607	28.568	833	1.1418	-1.0067	2.3122	1.1869	992.2	3112	.619	1.2890	1.2916	1035.1	1492	.719
2900	1.1973-4	3511.6	9.6020	28.492	842	1.1647	-1.0079	2.4417	1.1824	1000.3	3360	.612	1.2906	1.2922	1045.7	1512	.719
2950	1.1735-4	3637.0	9.6449	28.406	852	1.1896	-1.0092	2.5795	1.1783	1008.7	3623	.607	1.2921	1.2929	1056.6	1532	.719
3000	1.1500-4	3769.6	9.6895	28.309	862	1.2164	-1.0107	2.7243	1.1748	1017.4	3901	.602	1.2937	1.2937	1067.7	1552	.718

TABLE 1.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

DRY AIR ONLY; F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO = 0.0015; P = 1013.25 KPA (10.00 ATM)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9221-3	630.5	7.3527	28.965	400	1.0000	-1.0000	1.1215	1.3440	589.2	627	.715	1.1211	1.3442	589.3	627	.715
950	3.7157-3	686.8	7.4136	28.965	414	1.0000	-1.0000	1.1322	1.3396	604.4	656	.714	1.1314	1.3400	604.5	656	.714
1000	3.5299-3	743.7	7.4719	28.965	428	1.0000	-1.0000	1.1422	1.3357	619.2	685	.714	1.1410	1.3362	619.3	684	.714
1050	3.3618-3	801.0	7.5279	28.965	442	1.0000	-1.0000	1.1513	1.3321	633.6	712	.714	1.1495	1.3328	633.8	711	.714
1100	3.2090-3	858.8	7.5817	28.965	455	1.0000	-1.0000	1.1602	1.3287	647.7	739	.715	1.1576	1.3297	648.0	738	.714
1150	3.0695-3	917.0	7.6334	28.965	468	1.0000	-1.0000	1.1690	1.3254	661.5	766	.715	1.1653	1.3268	661.8	764	.715
1200	2.9416-3	975.7	7.6834	28.965	481	1.0000	-1.0000	1.1777	1.3223	674.9	792	.715	1.1726	1.3241	675.4	789	.715
1250	2.8239-3	1034.8	7.7316	28.965	494	1.0000	-1.0000	1.1864	1.3192	688.0	819	.716	1.1796	1.3216	688.6	814	.716
1300	2.7153-3	1094.4	7.7783	28.965	506	1.0000	-1.0000	1.1950	1.3161	700.8	845	.716	1.1863	1.3192	701.6	839	.716
1350	2.6147-3	1154.3	7.8236	28.965	519	1.0000	-1.0000	1.2036	1.3131	713.3	871	.717	1.1926	1.3170	714.4	863	.716
1400	2.5214-3	1214.7	7.8675	28.965	531	1.0000	-1.0000	1.2123	1.3102	725.6	897	.717	1.1987	1.3149	726.9	887	.717
1450	2.4344-3	1275.6	7.9102	28.965	542	1.0000	-1.0000	1.2210	1.3073	737.6	923	.717	1.2044	1.3129	739.2	911	.717
1500	2.3533-3	1336.8	7.9517	28.965	554	1.0000	-1.0000	1.2298	1.3044	749.4	949	.718	1.2099	1.3110	751.3	934	.718
1550	2.2774-3	1398.5	7.9922	28.965	566	1.0000	-1.0000	1.2387	1.3016	761.0	976	.718	1.2151	1.3093	763.2	958	.717
1600	2.2062-3	1460.7	8.0317	28.965	577	1.0000	-1.0000	1.2476	1.2988	772.3	1003	.718	1.2200	1.3077	775.0	981	.717
1650	2.1393-3	1523.3	8.0702	28.965	588	1.0000	-1.0000	1.2567	1.2960	783.5	1031	.717	1.2247	1.3061	786.5	1004	.717
1700	2.0764-3	1586.4	8.1079	28.965	599	1.0000	-1.0000	1.2659	1.2933	794.4	1058	.717	1.2291	1.3047	797.9	1027	.717
1750	2.0171-3	1649.9	8.1447	28.965	610	1.0001	-1.0000	1.2751	1.2905	805.2	1086	.717	1.2334	1.3033	809.1	1050	.717
1800	1.9611-3	1713.9	8.1808	28.965	621	1.0001	-1.0000	1.2846	1.2878	815.7	1113	.717	1.2374	1.3020	820.2	1072	.717
1850	1.9081-3	1778.4	8.2161	28.965	632	1.0002	-1.0000	1.2942	1.2851	826.1	1142	.717	1.2412	1.3008	831.1	1095	.717
1900	1.8578-3	1843.3	8.2507	28.965	643	1.0003	-1.0000	1.3041	1.2824	836.3	1170	.716	1.2448	1.2997	841.9	1116	.717
1950	1.8102-3	1908.8	8.2847	28.965	653	1.0005	-1.0000	1.3144	1.2797	846.4	1200	.716	1.2482	1.2986	852.6	1138	.717
2000	1.7649-3	1974.8	8.3181	28.964	664	1.0007	-1.0000	1.3250	1.2770	856.2	1230	.716	1.2515	1.2976	863.1	1159	.717
2050	1.7218-3	2041.3	8.3510	28.964	674	1.0010	-1.0000	1.3360	1.2743	866.0	1260	.715	1.2546	1.2967	873.5	1180	.717
2100	1.6808-3	2108.4	8.3833	28.963	685	1.0014	-1.0001	1.3477	1.2715	875.5	1291	.715	1.2575	1.2958	883.8	1201	.717
2150	1.6416-3	2176.1	8.4152	28.962	695	1.0019	-1.0001	1.3602	1.2687	884.9	1324	.714	1.2603	1.2950	894.0	1221	.717
2200	1.6042-3	2244.4	8.4466	28.960	705	1.0026	-1.0001	1.3735	1.2658	894.2	1358	.713	1.2629	1.2942	904.1	1241	.718
2250	1.5685-3	2313.4	8.4776	28.958	715	1.0035	-1.0001	1.3880	1.2629	903.2	1394	.712	1.2655	1.2935	914.1	1261	.718
2300	1.5342-3	2383.2	8.5083	28.956	725	1.0046	-1.0002	1.4036	1.2599	912.2	1433	.711	1.2679	1.2928	924.0	1280	.718
2350	1.5014-3	2453.8	8.5387	28.952	735	1.0060	-1.0002	1.4208	1.2568	920.9	1474	.709	1.2701	1.2922	933.8	1300	.719
2400	1.4699-3	2525.3	8.5688	28.948	745	1.0077	-1.0003	1.4397	1.2536	929.6	1518	.707	1.2723	1.2916	943.6	1319	.719
2450	1.4397-3	2597.8	8.5987	28.943	755	1.0098	-1.0004	1.4605	1.2502	938.0	1565	.705	1.2744	1.2910	953.2	1338	.720
2500	1.4106-3	2671.4	8.6284	28.937	765	1.0123	-1.0005	1.4835	1.2468	946.4	1617	.702	1.2764	1.2905	962.8	1356	.720
2550	1.3825-3	2746.2	8.6580	28.929	775	1.0153	-1.0007	1.5089	1.2433	954.6	1674	.698	1.2783	1.2901	972.4	1375	.720
2600	1.3555-3	2822.4	8.6876	28.919	784	1.0189	-1.0008	1.5371	1.2397	962.6	1737	.694	1.2801	1.2897	981.9	1394	.720
2650	1.3294-3	2900.0	8.7172	28.908	794	1.0230	-1.0010	1.5681	1.2360	970.6	1805	.690	1.2818	1.2893	991.3	1413	.720
2700	1.3042-3	2979.2	8.7468	28.894	804	1.0279	-1.0013	1.6024	1.2322	978.5	1880	.685	1.2835	1.2890	1000.7	1432	.720
2750	1.2797-3	3060.3	8.7765	28.878	813	1.0335	-1.0015	1.6400	1.2285	986.2	1962	.680	1.2851	1.2887	1010.1	1451	.721
2800	1.2560-3	3143.3	8.8065	28.859	823	1.0399	-1.0019	1.6813	1.2247	993.9	2051	.674	1.2867	1.2885	1019.5	1469	.721
2850	1.2331-3	3228.5	8.8366	28.836	832	1.0472	-1.0022	1.7263	1.2209	1001.6	2149	.669	1.2882	1.2884	1028.9	1488	.720
2900	1.2107-3	3316.0	8.8670	28.811	842	1.0554	-1.0027	1.7753	1.2171	1009.3	2255	.663	1.2897	1.2883	1038.3	1507	.720
2950	1.1890-3	3406.1	8.8978	28.781	851	1.0646	-1.0032	1.8282	1.2135	1016.9	2371	.656	1.2911	1.2882	1047.8	1526	.720
3000	1.1678-3	3498.9	8.9290	28.748	861	1.0748	-1.0037	1.8852	1.2099	1024.6	2495	.650	1.2925	1.2883	1057.3	1545	.720

TABLE 1.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

DRY AIR ONLY; F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO = 0.0015; P = 5066.25 KPA (50.00 ATM)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9611-2	630.5	6.8907	28.965	400	1.0000	-1.0000	1.1216	1.3439	589.2	627	.715	1.1211	1.3442	589.3	627	.715
950	1.8578-2	686.8	6.9516	28.965	414	1.0000	-1.0000	1.1322	1.3396	604.4	656	.714	1.1314	1.3400	604.5	656	.714
1000	1.7650-2	743.7	7.0100	28.965	428	1.0000	-1.0000	1.1422	1.3356	619.2	685	.714	1.1410	1.3361	619.3	684	.714
1050	1.6809-2	801.0	7.0659	28.965	442	1.0000	-1.0000	1.1513	1.3321	633.6	712	.714	1.1495	1.3328	633.8	711	.714
1100	1.6045-2	858.8	7.1197	28.965	455	1.0000	-1.0000	1.1603	1.3287	647.7	739	.715	1.1576	1.3297	648.0	738	.714
1150	1.5347-2	917.1	7.1715	28.965	468	1.0000	-1.0000	1.1691	1.3254	661.5	766	.715	1.1653	1.3268	661.8	764	.715
1200	1.4708-2	975.7	7.2214	28.965	481	1.0000	-1.0000	1.1778	1.3222	674.9	792	.715	1.1726	1.3241	675.4	789	.715
1250	1.4120-2	1034.8	7.2696	28.966	494	1.0000	-1.0000	1.1864	1.3191	688.0	819	.716	1.1796	1.3216	688.6	814	.716
1300	1.3577-2	1094.4	7.3163	28.966	506	1.0000	-1.0000	1.1950	1.3161	700.8	845	.716	1.1863	1.3192	701.6	839	.716
1350	1.3074-2	1154.3	7.3616	28.966	519	0.9999	-1.0000	1.2037	1.3131	713.3	871	.717	1.1926	1.3170	714.4	863	.716
1400	1.2607-2	1214.7	7.4055	28.966	531	0.9999	-1.0000	1.2124	1.3101	725.6	897	.717	1.1987	1.3149	726.9	887	.717
1450	1.2172-2	1275.6	7.4482	28.966	542	0.9999	-1.0000	1.2211	1.3073	737.6	923	.717	1.2044	1.3129	739.2	911	.717
1500	1.1767-2	1336.8	7.4898	28.966	554	0.9999	-1.0000	1.2298	1.3044	749.4	949	.718	1.2099	1.3110	751.3	934	.718
1550	1.1387-2	1398.6	7.5303	28.966	566	0.9999	-1.0000	1.2387	1.3016	761.0	976	.718	1.2151	1.3093	763.2	958	.717
1600	1.1031-2	1460.7	7.5697	28.966	577	0.9999	-1.0000	1.2476	1.2988	772.3	1003	.718	1.2200	1.3077	775.0	981	.717
1650	1.0697-2	1523.3	7.6082	28.966	588	0.9999	-1.0000	1.2565	1.2960	783.5	1030	.717	1.2247	1.3061	786.5	1004	.717
1700	1.0382-2	1586.4	7.6459	28.966	599	0.9999	-1.0000	1.2656	1.2933	794.4	1058	.717	1.2291	1.3047	797.9	1027	.717
1750	1.0086-2	1649.9	7.6827	28.966	610	1.0000	-1.0000	1.2747	1.2906	805.2	1085	.717	1.2334	1.3033	809.1	1050	.717
1800	9.8056-3	1713.8	7.7188	28.966	621	1.0000	-1.0000	1.2839	1.2879	815.7	1113	.717	1.2374	1.3020	820.2	1072	.717
1850	9.5405-3	1778.3	7.7541	28.966	632	1.0000	-1.0000	1.2931	1.2853	826.1	1140	.717	1.2412	1.3008	831.1	1095	.717
1900	9.2895-3	1843.2	7.7887	28.966	643	1.0001	-1.0000	1.3024	1.2827	836.4	1168	.717	1.2448	1.2997	841.9	1116	.717
1950	9.0512-3	1908.5	7.8226	28.966	653	1.0001	-1.0000	1.3119	1.2801	846.5	1197	.716	1.2482	1.2986	852.6	1138	.717
2000	8.8249-3	1974.3	7.8559	28.966	664	1.0002	-1.0000	1.3215	1.2776	856.4	1225	.716	1.2515	1.2976	863.1	1159	.717
2050	8.6096-3	2040.7	7.8887	28.966	674	1.0004	-1.0000	1.3312	1.2751	866.2	1254	.716	1.2546	1.2967	873.5	1180	.717
2100	8.4045-3	2107.5	7.9209	28.965	685	1.0006	-1.0000	1.3411	1.2726	875.9	1283	.716	1.2575	1.2958	883.8	1201	.717
2150	8.2090-3	2174.8	7.9526	28.965	695	1.0008	-1.0001	1.3513	1.2702	885.4	1312	.716	1.2603	1.2949	894.0	1221	.717
2200	8.0222-3	2242.6	7.9838	28.964	705	1.0011	-1.0001	1.3618	1.2677	894.8	1342	.716	1.2629	1.2942	904.0	1241	.718
2250	7.8437-3	2311.0	8.0145	28.963	715	1.0015	-1.0001	1.3727	1.2653	904.0	1373	.715	1.2654	1.2934	914.0	1261	.718
2300	7.6729-3	2379.9	8.0448	28.962	725	1.0020	-1.0001	1.3840	1.2628	913.1	1405	.715	1.2678	1.2927	923.9	1280	.718
2350	7.5093-3	2449.4	8.0747	28.961	735	1.0026	-1.0001	1.3959	1.2604	922.1	1437	.714	1.2701	1.2921	933.6	1300	.719
2400	7.3524-3	2519.5	8.1042	28.959	745	1.0034	-1.0002	1.4085	1.2580	931.0	1472	.713	1.2723	1.2914	943.3	1319	.719
2450	7.2018-3	2590.2	8.1334	28.957	755	1.0043	-1.0002	1.4217	1.2555	939.8	1507	.712	1.2743	1.2908	952.9	1337	.720
2500	7.0570-3	2661.7	8.1622	28.954	765	1.0054	-1.0003	1.4358	1.2530	948.4	1545	.711	1.2763	1.2903	962.5	1356	.720
2550	6.9178-3	2733.8	8.1908	28.950	775	1.0068	-1.0003	1.4509	1.2505	957.0	1585	.709	1.2782	1.2898	971.9	1375	.720
2600	6.7838-3	2806.8	8.2191	28.946	784	1.0084	-1.0004	1.4671	1.2480	965.4	1627	.707	1.2800	1.2893	981.3	1394	.720
2650	6.6546-3	2880.6	8.2472	28.941	794	1.0103	-1.0005	1.4844	1.2454	973.7	1672	.705	1.2817	1.2889	990.6	1413	.720
2700	6.5300-3	2955.2	8.2752	28.935	804	1.0125	-1.0006	1.5031	1.2428	982.0	1719	.703	1.2834	1.2885	999.8	1431	.721
2750	6.4097-3	3030.9	8.3029	28.928	813	1.0150	-1.0007	1.5232	1.2402	990.1	1770	.700	1.2850	1.2881	1009.0	1450	.721
2800	6.2933-3	3107.6	8.3306	28.919	823	1.0180	-1.0009	1.5449	1.2376	998.1	1825	.697	1.2865	1.2878	1018.2	1469	.721
2850	6.1808-3	3185.4	8.3581	28.909	832	1.0213	-1.0010	1.5681	1.2350	1006.1	1883	.693	1.2880	1.2875	1027.3	1487	.721
2900	6.0718-3	3264.4	8.3856	28.897	842	1.0251	-1.0012	1.5932	1.2323	1014.0	1945	.689	1.2895	1.2872	1036.4	1506	.721
2950	5.9661-3	3344.8	8.4131	28.884	851	1.0294	-1.0015	1.6200	1.2297	1021.9	2012	.685	1.2909	1.2870	1045.4	1524	.721
3000	5.8635-3	3426.5	8.4405	28.869	860	1.0342	-1.0017	1.6488	1.2271	1029.7	2084	.681	1.2922	1.2868	1054.4	1543	.721

TABLE 2A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.017413; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 29.0163;
DRY AIR; GASEOUS COMPOSITION: CO2= .03650; H2O= .03076; N2= .76883; O2= .15469; AR= .00922

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7681-3	8.8403-2	-850.9	7.8180	7.1582	6.4984	5.8386	5.3774	1.0146	1.3936	282.6	129	175	.7453	200
210	1.6839-3	8.4193-2	-840.8	7.8675	7.2077	6.5479	5.8881	5.4269	1.0143	1.3937	289.6	134	183	.7429	210
220	1.6073-3	8.0366-2	-830.6	7.9146	7.2548	6.5951	5.9353	5.4741	1.0142	1.3938	296.4	140	192	.7405	220
230	1.5374-3	7.6872-2	-820.5	7.9597	7.2999	6.6401	5.9804	5.5192	1.0142	1.3938	303.1	145	200	.7382	230
240	1.4734-3	7.3669-2	-810.3	8.0029	7.3431	6.6833	6.0235	5.5623	1.0144	1.3937	309.6	151	208	.7361	240
250	1.4144-3	7.0722-2	-800.2	8.0443	7.3845	6.7247	6.0649	5.6038	1.0146	1.3936	316.0	156	216	.7342	250
260	1.3600-3	6.8002-2	-790.0	8.0841	7.4243	6.7645	6.1047	5.6436	1.0150	1.3934	322.2	161	223	.7325	260
270	1.3097-3	6.5484-2	-779.9	8.1224	7.4626	6.8028	6.1431	5.6819	1.0154	1.3931	328.3	166	231	.7312	270
280	1.2629-3	6.3145-2	-769.7	8.1594	7.4996	6.8398	6.1800	5.7188	1.0160	1.3928	334.3	171	238	.7301	280
290	1.2194-3	6.0968-2	-759.6	8.1950	7.5352	6.8754	6.2157	5.7545	1.0167	1.3924	340.2	176	246	.7292	290
298	1.1860-3	5.9301-2	-751.3	8.2232	7.5634	6.9036	6.2438	5.7827	1.0173	1.3921	344.9	180	252	.7287	298
300	1.1787-3	5.8935-2	-749.4	8.2295	7.5697	6.9099	6.2501	5.7890	1.0175	1.3920	345.9	181	253	.7286	300
310	1.1407-3	5.7034-2	-739.2	8.2629	7.6031	6.9433	6.2835	5.8223	1.0184	1.3915	351.6	186	260	.7284	310
320	1.1050-3	5.5252-2	-729.0	8.2952	7.6354	6.9757	6.3159	5.8547	1.0194	1.3910	357.1	191	267	.7284	320
330	1.0716-3	5.3578-2	-718.8	8.3266	7.6668	7.0070	6.3472	5.8861	1.0204	1.3904	362.6	195	273	.7285	330
340	1.0400-3	5.2002-2	-708.6	8.3571	7.6973	7.0375	6.3777	5.9166	1.0216	1.3898	368.0	200	280	.7286	340
350	1.0103-3	5.0516-2	-698.4	8.3867	7.7269	7.0671	6.4074	5.9462	1.0228	1.3892	373.3	204	287	.7288	350
360	9.8225-4	4.9113-2	-688.2	8.4156	7.7558	7.0960	6.4362	5.9750	1.0242	1.3885	378.5	209	293	.7287	360
370	9.5571-4	4.7785-2	-677.9	8.4436	7.7838	7.1241	6.4643	6.0031	1.0256	1.3877	383.6	213	300	.7285	370
380	9.3056-4	4.6528-2	-667.7	8.4710	7.8112	7.1514	6.4916	6.0305	1.0271	1.3869	388.6	217	307	.7283	380
390	9.0670-4	4.5335-2	-657.4	8.4977	7.8379	7.1781	6.5183	6.0572	1.0286	1.3861	393.6	222	313	.7282	390
400	8.8403-4	4.4201-2	-647.1	8.5238	7.8640	7.2042	6.5444	6.0832	1.0303	1.3853	398.5	226	320	.7280	400
410	8.6247-4	4.3123-2	-636.8	8.5492	7.8894	7.2297	6.5699	6.1087	1.0319	1.3844	403.3	230	326	.7278	410
420	8.4193-4	4.2097-2	-626.4	8.5741	7.9143	7.2545	6.5948	6.1336	1.0337	1.3835	408.0	234	333	.7277	420
430	8.2235-4	4.1118-2	-616.1	8.5985	7.9387	7.2789	6.6191	6.1579	1.0355	1.3826	412.7	238	339	.7276	430
440	8.0366-4	4.0183-2	-605.7	8.6223	7.9625	7.3027	6.6429	6.1818	1.0374	1.3816	417.4	243	346	.7274	440
450	7.8580-4	3.9290-2	-595.3	8.6456	7.9858	7.3260	6.6663	6.2051	1.0394	1.3806	421.9	247	352	.7274	450
460	7.6872-4	3.8436-2	-584.9	8.6685	8.0087	7.3489	6.6891	6.2280	1.0414	1.3796	426.4	250	359	.7273	460
470	7.5237-4	3.7618-2	-574.5	8.6909	8.0311	7.3713	6.7115	6.2504	1.0434	1.3786	430.9	254	365	.7272	470
480	7.3669-4	3.6835-2	-564.1	8.7129	8.0531	7.3933	6.7335	6.2724	1.0455	1.3775	435.3	258	371	.7272	480
490	7.2166-4	3.6083-2	-553.6	8.7345	8.0747	7.4149	6.7551	6.2939	1.0476	1.3765	439.6	262	378	.7271	490
500	7.0722-4	3.5361-2	-543.1	8.7557	8.0959	7.4361	6.7763	6.3151	1.0498	1.3754	443.9	266	384	.7271	500
510	6.9336-4	3.4668-2	-532.6	8.7765	8.1167	7.4569	6.7971	6.3359	1.0521	1.3743	448.1	270	390	.7271	510
520	6.8002-4	3.4001-2	-522.1	8.7969	8.1371	7.4774	6.8176	6.3564	1.0543	1.3732	452.3	273	397	.7271	520
530	6.6719-4	3.3360-2	-511.5	8.8170	8.1572	7.4975	6.8377	6.3765	1.0566	1.3721	456.5	277	403	.7270	530
540	6.5484-4	3.2742-2	-500.9	8.8368	8.1770	7.5172	6.8574	6.3963	1.0590	1.3710	460.6	281	409	.7270	540
550	6.4293-4	3.2147-2	-490.3	8.8563	8.1965	7.5367	6.8769	6.4157	1.0613	1.3698	464.6	285	415	.7269	550
560	6.3145-4	3.1572-2	-479.7	8.8754	8.2156	7.5558	6.8960	6.4349	1.0637	1.3687	468.6	288	422	.7269	560
570	6.2037-4	3.1019-2	-469.1	8.8943	8.2345	7.5747	6.9149	6.4537	1.0662	1.3675	472.6	292	428	.7268	570
580	6.0968-4	3.0484-2	-458.4	8.9128	8.2530	7.5932	6.9335	6.4723	1.0686	1.3664	476.5	295	434	.7267	580
590	5.9934-4	2.9967-2	-447.7	8.9311	8.2713	7.6115	6.9517	6.4906	1.0711	1.3652	480.4	299	441	.7266	590

TABLE 2A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.017413; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 29.0163;
DRY AIR; GASEOUS COMPOSITION: CO2= .03650; H2O= .03076; N2= .76883; O2= .15469; AR= .00922

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8935-4	2.9468-2	-437.0	8.9491	8.2893	7.6296	6.9698	6.5086	1.0736	1.3641	484.3	302	447	.7265	600
610	5.7969-4	2.8985-2	-426.2	8.9669	8.3071	7.6473	6.9875	6.5264	1.0761	1.3629	488.1	306	453	.7264	610
620	5.7034-4	2.8517-2	-415.4	8.9844	8.3246	7.6648	7.0050	6.5439	1.0787	1.3617	491.9	309	460	.7262	620
630	5.6129-4	2.8064-2	-404.6	9.0017	8.3419	7.6821	7.0223	6.5612	1.0812	1.3606	495.6	313	466	.7260	630
640	5.5252-4	2.7626-2	-393.8	9.0187	8.3590	7.6992	7.0394	6.5782	1.0838	1.3594	499.3	316	472	.7257	640
650	5.4402-4	2.7201-2	-383.0	9.0356	8.3758	7.7160	7.0562	6.5950	1.0863	1.3583	503.0	320	479	.7255	650
660	5.3578-4	2.6789-2	-372.1	9.0522	8.3924	7.7326	7.0728	6.6116	1.0889	1.3571	506.6	323	485	.7253	660
670	5.2778-4	2.6389-2	-361.2	9.0686	8.4088	7.7490	7.0892	6.6280	1.0915	1.3560	510.2	327	492	.7251	670
680	5.2002-4	2.6001-2	-350.3	9.0848	8.4250	7.7652	7.1054	6.6442	1.0941	1.3548	513.8	330	498	.7249	680
690	5.1248-4	2.5624-2	-339.3	9.1007	8.4410	7.7812	7.1214	6.6602	1.0967	1.3537	517.3	333	504	.7247	690
700	5.0516-4	2.5258-2	-328.3	9.1165	8.4568	7.7970	7.1372	6.6760	1.0993	1.3526	520.9	337	511	.7244	700
710	4.9804-4	2.4902-2	-317.3	9.1322	8.4724	7.8126	7.1528	6.6916	1.1019	1.3514	524.3	340	517	.7242	710
720	4.9113-4	2.4556-2	-306.3	9.1476	8.4878	7.8280	7.1682	6.7070	1.1045	1.3503	527.8	343	523	.7240	720
730	4.8440-4	2.4220-2	-295.2	9.1628	8.5030	7.8433	7.1835	6.7223	1.1071	1.3492	531.2	346	530	.7238	730
740	4.7785-4	2.3893-2	-284.2	9.1779	8.5181	7.8583	7.1986	6.7374	1.1097	1.3481	534.7	350	536	.7236	740
750	4.7148-4	2.3574-2	-273.0	9.1928	8.5330	7.8733	7.2135	6.7523	1.1123	1.3470	538.0	353	542	.7234	750
760	4.6528-4	2.3264-2	-261.9	9.2076	8.5478	7.8880	7.2282	6.7670	1.1148	1.3459	541.4	356	549	.7232	760
770	4.5924-4	2.2962-2	-250.7	9.2222	8.5624	7.9026	7.2428	6.7816	1.1174	1.3449	544.7	359	555	.7230	770
780	4.5335-4	2.2667-2	-239.6	9.2366	8.5768	7.9170	7.2572	6.7961	1.1200	1.3438	548.0	362	561	.7228	780
790	4.4761-4	2.2381-2	-228.3	9.2509	8.5911	7.9313	7.2715	6.8103	1.1225	1.3428	551.3	366	568	.7227	790
800	4.4201-4	2.2101-2	-217.1	9.2650	8.6052	7.9454	7.2857	6.8245	1.1250	1.3417	554.6	369	574	.7225	800
810	4.3656-4	2.1828-2	-205.8	9.2790	8.6192	7.9594	7.2996	6.8385	1.1275	1.3407	557.8	372	580	.7223	810
820	4.3123-4	2.1562-2	-194.6	9.2929	8.6331	7.9733	7.3135	6.8523	1.1300	1.3397	561.1	375	587	.7222	820
830	4.2604-4	2.1302-2	-183.2	9.3066	8.6468	7.9870	7.3272	6.8660	1.1325	1.3387	564.3	378	593	.7221	830
840	4.2097-4	2.1048-2	-171.9	9.3202	8.6604	8.0006	7.3408	6.8796	1.1350	1.3377	567.4	381	599	.7219	840
850	4.1601-4	2.0801-2	-160.5	9.3336	8.6738	8.0140	7.3542	6.8931	1.1374	1.3368	570.6	384	605	.7218	850
860	4.1118-4	2.0559-2	-149.2	9.3469	8.6871	8.0273	7.3676	6.9064	1.1398	1.3358	573.7	387	611	.7217	860
870	4.0645-4	2.0323-2	-137.8	9.3601	8.7003	8.0405	7.3807	6.9196	1.1422	1.3349	576.9	390	618	.7215	870
880	4.0183-4	2.0092-2	-126.3	9.3732	8.7134	8.0536	7.3938	6.9326	1.1446	1.3339	580.0	393	624	.7214	880
890	3.9732-4	1.9866-2	-114.9	9.3861	8.7263	8.0665	7.4068	6.9456	1.1470	1.3330	583.1	396	630	.7213	890
900	3.9290-4	1.9645-2	-103.4	9.3990	8.7392	8.0794	7.4196	6.9584	1.1493	1.3321	586.1	399	636	.7212	900
910	3.8858-4	1.9429-2	-91.9	9.4117	8.7519	8.0921	7.4323	6.9711	1.1516	1.3312	589.2	402	642	.7211	910
920	3.8436-4	1.9218-2	-80.3	9.4243	8.7645	8.1047	7.4449	6.9837	1.1539	1.3304	592.2	405	648	.7210	920
930	3.8023-4	1.9011-2	-68.8	9.4368	8.7770	8.1172	7.4574	6.9962	1.1561	1.3295	595.2	408	654	.7209	930
940	3.7618-4	1.8809-2	-57.2	9.4491	8.7893	8.1295	7.4698	7.0086	1.1583	1.3287	598.2	411	660	.7208	940
950	3.7222-4	1.8611-2	-45.6	9.4614	8.8016	8.1418	7.4820	7.0209	1.1605	1.3279	601.2	414	666	.7207	950
960	3.6835-4	1.8417-2	-34.0	9.4736	8.8138	8.1540	7.4942	7.0330	1.1627	1.3271	604.2	417	672	.7206	960
970	3.6455-4	1.8227-2	-22.4	9.4856	8.8258	8.1660	7.5063	7.0451	1.1648	1.3263	607.2	420	678	.7205	970
980	3.6083-4	1.8041-2	-10.7	9.4976	8.8378	8.1780	7.5182	7.0570	1.1669	1.3255	610.1	422	684	.7204	980
990	3.5718-4	1.7859-2	1.0	9.5094	8.8496	8.1899	7.5301	7.0689	1.1689	1.3247	613.0	425	690	.7203	990

TABLE 2A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.017413; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 29.0163;
DRY AIR; GASEOUS COMPOSITION: CO2= .03650; H2O= .03076; N2= .76883; O2= .15469; AR= .00922

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5361-4	1.7681-2	12.7	9.5212	8.8614	8.2016	7.5418	7.0807	1.1710	1.3240	615.9	428	696	.7203	1000
1050	3.3677-4	1.6839-2	71.4	9.5786	8.9188	8.2590	7.5992	7.1380	1.1803	1.3206	630.3	442	724	.7201	1050
1100	3.2147-4	1.6073-2	130.7	9.6337	8.9739	8.3141	7.6543	7.1931	1.1892	1.3174	644.4	456	752	.7201	1100
1150	3.0749-4	1.5374-2	190.4	9.6867	9.0269	8.3671	7.7074	7.2462	1.1978	1.3145	658.1	469	780	.7202	1150
1200	2.9468-4	1.4734-2	250.5	9.7379	9.0781	8.4183	7.7585	7.2973	1.2059	1.3117	671.6	482	807	.7203	1200
1250	2.8289-4	1.4144-2	310.9	9.7873	9.1275	8.4677	7.8079	7.3467	1.2136	1.3091	684.8	495	834	.7205	1250
1300	2.7201-4	1.3600-2	371.8	9.8350	9.1752	8.5154	7.8556	7.3945	1.2209	1.3067	697.7	508	860	.7207	1300
1350	2.6193-4	1.3097-2	433.0	9.8812	9.2214	8.5616	7.9018	7.4407	1.2279	1.3044	710.3	520	886	.7208	1350
1400	2.5258-4	1.2629-2	494.6	9.9260	9.2662	8.6064	7.9466	7.4854	1.2346	1.3022	722.8	532	912	.7209	1400
1450	2.4387-4	1.2194-2	556.5	9.9694	9.3096	8.6498	7.9901	7.5289	1.2409	1.3002	735.0	545	937	.7211	1450
1500	2.3574-4	1.1787-2	618.7	10.0116	9.3518	8.6920	8.0322	7.5710	1.2469	1.2984	747.0	556	962	.7211	1500
1550	2.2814-4	1.1407-2	681.2	10.0526	9.3928	8.7330	8.0732	7.6120	1.2526	1.2966	758.9	568	987	.7209	1550
1600	2.2101-4	1.1050-2	743.9	10.0924	9.4326	8.7728	8.1131	7.6519	1.2580	1.2950	770.5	580	1012	.7206	1600
1650	2.1431-4	1.0716-2	807.0	10.1312	9.4714	8.8116	8.1518	7.6907	1.2632	1.2934	782.0	591	1037	.7204	1650
1700	2.0801-4	1.0400-2	870.2	10.1690	9.5092	8.8494	8.1896	7.7285	1.2681	1.2919	793.3	603	1062	.7201	1700
1750	2.0206-4	1.0103-2	933.8	10.2058	9.5460	8.8862	8.2265	7.7653	1.2727	1.2906	804.5	614	1086	.7198	1750
1800	1.9645-4	9.8226-3	997.5	10.2417	9.5820	8.9222	8.2624	7.8012	1.2771	1.2893	815.5	625	1110	.7195	1800
1850	1.9114-4	9.5571-3	1061.5	10.2768	9.6170	8.9572	8.2974	7.8362	1.2813	1.2881	826.3	636	1133	.7192	1850
1900	1.8611-4	9.3056-3	1125.6	10.3110	9.6512	8.9914	8.3316	7.8705	1.2852	1.2869	837.0	647	1157	.7189	1900
1950	1.8134-4	9.0670-3	1190.0	10.3444	9.6847	9.0249	8.3651	7.9039	1.2890	1.2859	847.6	658	1180	.7187	1950
2000	1.7681-4	8.8403-3	1254.5	10.3771	9.7173	9.0575	8.3978	7.9366	1.2925	1.2848	858.1	669	1203	.7184	2000
2050	1.7249-4	8.6247-3	1319.2	10.4091	9.7493	9.0895	8.4297	7.9685	1.2959	1.2839	868.4	679	1225	.7184	2050
2100	1.6839-4	8.4193-3	1384.1	10.4403	9.7806	9.1208	8.4610	7.9998	1.2991	1.2830	878.6	690	1247	.7183	2100
2150	1.6447-4	8.2235-3	1449.1	10.4709	9.8112	9.1514	8.4916	8.0304	1.3021	1.2821	888.8	700	1269	.7183	2150
2200	1.6073-4	8.0366-3	1514.3	10.5009	9.8411	9.1813	8.5216	8.0604	1.3050	1.2813	898.7	711	1291	.7183	2200
2250	1.5716-4	7.8580-3	1579.6	10.5303	9.8705	9.2107	8.5509	8.0897	1.3078	1.2806	908.6	721	1312	.7183	2250
2300	1.5374-4	7.6872-3	1645.1	10.5590	9.8993	9.2395	8.5797	8.1185	1.3104	1.2799	918.4	731	1333	.7184	2300
2350	1.5047-4	7.5237-3	1710.7	10.5873	9.9275	9.2677	8.6079	8.1467	1.3129	1.2792	928.1	741	1354	.7184	2350
2400	1.4734-4	7.3669-3	1776.4	10.6149	9.9551	9.2953	8.6356	8.1744	1.3153	1.2785	937.7	751	1375	.7185	2400
2450	1.4433-4	7.2166-3	1842.2	10.6421	9.9823	9.3225	8.6627	8.2015	1.3175	1.2779	947.2	761	1395	.7185	2450
2500	1.4144-4	7.0722-3	1908.1	10.6687	10.0089	9.3491	8.6893	8.2282	1.3197	1.2774	956.6	771	1416	.7186	2500
2550	1.3867-4	6.9336-3	1974.2	10.6949	10.0351	9.3753	8.7155	8.2543	1.3218	1.2768	965.9	781	1436	.7185	2550
2600	1.3600-4	6.8002-3	2040.3	10.7205	10.0608	9.4010	8.7412	8.2800	1.3237	1.2763	975.1	790	1456	.7183	2600
2650	1.3344-4	6.6719-3	2106.5	10.7458	10.0860	9.4262	8.7664	8.3052	1.3256	1.2758	984.2	800	1476	.7182	2650
2700	1.3097-4	6.5484-3	2172.9	10.7706	10.1108	9.4510	8.7912	8.3300	1.3275	1.2753	993.3	810	1497	.7180	2700
2750	1.2859-4	6.4293-3	2239.3	10.7949	10.1352	9.4754	8.8156	8.3544	1.3292	1.2748	1002.3	819	1516	.7179	2750
2800	1.2629-4	6.3145-3	2305.8	10.8189	10.1591	9.4993	8.8395	8.3784	1.3309	1.2744	1011.2	828	1536	.7177	2800
2850	1.2407-4	6.2037-3	2372.4	10.8425	10.1827	9.5229	8.8631	8.4019	1.3326	1.2739	1020.0	838	1556	.7175	2850
2900	1.2194-4	6.0968-3	2439.1	10.8657	10.2059	9.5461	8.8863	8.4251	1.3342	1.2735	1028.7	847	1576	.7173	2900
2950	1.1987-4	5.9934-3	2505.8	10.8885	10.2287	9.5689	8.9091	8.4480	1.3357	1.2731	1037.4	856	1595	.7171	2950
3000	1.1787-4	5.8935-3	2572.6	10.9110	10.2512	9.5914	8.9316	8.4704	1.3373	1.2727	1046.0	866	1615	.7169	3000

TABLE 2.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.017413; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9290-6	-103.3	9.3990	29.016	399	1.0000	-1.0000	1.1497	1.3320	586.1	636	.721	1.1493	1.3321	586.1	636	.721
950	3.7222-6	-45.6	9.4615	29.016	414	1.0000	-1.0000	1.1611	1.3276	601.2	667	.721	1.1605	1.3279	601.2	666	.721
1000	3.5361-6	12.8	9.5213	29.016	428	1.0000	-1.0000	1.1720	1.3236	615.9	697	.720	1.1710	1.3240	615.9	696	.720
1050	3.3677-6	71.6	9.5787	29.016	442	1.0000	-1.0000	1.1819	1.3200	630.2	725	.720	1.1803	1.3206	630.3	724	.720
1100	3.2147-6	130.9	9.6339	29.016	456	1.0000	-1.0000	1.1916	1.3166	644.2	754	.720	1.1892	1.3174	644.4	752	.720
1150	3.0749-6	190.8	9.6871	29.016	469	1.0000	-1.0000	1.2011	1.3133	657.9	782	.720	1.1978	1.3145	658.1	780	.720
1200	2.9468-6	251.1	9.7384	29.016	482	1.0000	-1.0000	1.2106	1.3101	671.2	810	.720	1.2059	1.3117	671.6	807	.720
1250	2.8289-6	311.8	9.7880	29.016	495	1.0000	-1.0000	1.2200	1.3070	684.2	838	.720	1.2136	1.3091	684.8	834	.720
1300	2.7201-6	373.1	9.8361	29.016	508	1.0001	-1.0000	1.2296	1.3039	696.9	866	.721	1.2209	1.3067	697.7	860	.721
1350	2.6193-6	434.8	9.8827	29.016	520	1.0001	-1.0000	1.2394	1.3008	709.4	895	.721	1.2279	1.3044	710.3	886	.721
1400	2.5258-6	497.0	9.9279	29.016	532	1.0002	-1.0000	1.2497	1.2977	721.5	923	.721	1.2346	1.3023	722.8	912	.721
1450	2.4386-6	559.8	9.9720	29.016	545	1.0004	-1.0000	1.2607	1.2944	733.4	953	.720	1.2409	1.3003	735.0	937	.721
1500	2.3573-6	623.1	10.0149	29.015	556	1.0007	-1.0000	1.2729	1.2910	744.9	984	.720	1.2469	1.2984	747.1	962	.721
1550	2.2812-6	687.1	10.0569	29.014	568	1.0011	-1.0000	1.2866	1.2873	756.2	1018	.718	1.2526	1.2966	758.9	987	.721
1600	2.2098-6	751.8	10.0980	29.013	580	1.0017	-1.0000	1.3028	1.2832	767.0	1054	.717	1.2580	1.2950	770.6	1012	.721
1650	2.1427-6	817.4	10.1383	29.011	591	1.0027	-1.0001	1.3224	1.2785	777.5	1095	.714	1.2632	1.2935	782.1	1037	.720
1700	2.0795-6	884.1	10.1782	29.008	603	1.0041	-1.0001	1.3469	1.2730	787.6	1143	.710	1.2681	1.2920	793.4	1062	.720
1750	2.0198-6	952.2	10.2176	29.004	614	1.0063	-1.0002	1.3780	1.2666	797.1	1200	.705	1.2727	1.2907	804.7	1086	.720
1800	1.9632-6	1022.1	10.2570	28.997	625	1.0095	-1.0003	1.4183	1.2591	806.1	1272	.697	1.2771	1.2895	815.8	1110	.719
1850	1.9096-6	1094.2	10.2965	28.988	636	1.0141	-1.0004	1.4708	1.2503	814.5	1363	.687	1.2812	1.2884	826.8	1134	.719
1900	1.8585-6	1169.4	10.3366	28.975	647	1.0207	-1.0006	1.5393	1.2401	822.3	1481	.672	1.2852	1.2875	837.8	1157	.719
1950	1.8096-6	1248.5	10.3777	28.956	658	1.0298	-1.0009	1.6285	1.2286	829.4	1637	.654	1.2889	1.2866	848.8	1181	.718
2000	1.7628-6	1332.7	10.4203	28.930	668	1.0422	-1.0013	1.7437	1.2161	836.1	1842	.633	1.2924	1.2860	859.7	1204	.718
2050	1.7177-6	1423.4	10.4651	28.894	679	1.0588	-1.0019	1.8906	1.2030	842.4	2111	.608	1.2958	1.2855	870.8	1227	.717
2100	1.6740-6	1522.4	10.5128	28.846	689	1.0805	-1.0027	2.0751	1.1898	848.6	2461	.581	1.2989	1.2852	882.0	1249	.717
2150	1.6315-6	1631.6	10.5642	28.782	699	1.1084	-1.0037	2.3024	1.1771	855.0	2906	.554	1.3019	1.2852	893.4	1272	.716
2200	1.5898-6	1753.4	10.6202	28.700	709	1.1432	-1.0050	2.5765	1.1654	861.9	3460	.528	1.3047	1.2854	905.1	1295	.715
2250	1.5488-6	1890.1	10.6816	28.594	719	1.1856	-1.0067	2.8990	1.1552	869.3	4130	.505	1.3074	1.2860	917.3	1318	.713
2300	1.5081-6	2044.1	10.7493	28.463	729	1.2356	-1.0087	3.2688	1.1464	877.6	4909	.485	1.3100	1.2870	929.9	1342	.711
2350	1.4677-6	2217.7	10.8239	28.302	738	1.2931	-1.0111	3.6809	1.1394	886.9	5777	.470	1.3124	1.2884	943.1	1367	.709
2400	1.4273-6	2412.8	10.9061	28.109	748	1.3568	-1.0139	4.1267	1.1338	897.2	6695	.461	1.3149	1.2903	957.0	1393	.706
2450	1.3870-6	2630.7	10.9959	27.884	757	1.4252	-1.0170	4.5932	1.1297	908.5	7609	.457	1.3173	1.2926	971.7	1421	.702
2500	1.3467-6	2872.1	11.0935	27.626	766	1.4956	-1.0204	5.0625	1.1269	920.8	8453	.459	1.3197	1.2954	987.3	1450	.697
2550	1.3065-6	3136.6	11.1982	27.337	776	1.5645	-1.0238	5.5118	1.1252	934.2	9165	.466	1.3222	1.2987	1003.6	1481	.692
2600	1.2666-6	3422.5	11.3092	27.022	785	1.6277	-1.0271	5.9148	1.1245	948.5	9696	.479	1.3247	1.3025	1020.8	1514	.687
2650	1.2273-6	3726.9	11.4252	26.687	794	1.6808	-1.0301	6.2439	1.1247	963.6	10017	.495	1.3273	1.3067	1038.7	1548	.681
2700	1.1888-6	4045.3	11.5442	26.339	804	1.7199	-1.0325	6.4750	1.1257	979.5	10125	.514	1.3300	1.3112	1057.1	1582	.675
2750	1.1516-6	4372.4	11.6642	25.988	813	1.7421	-1.0343	6.5900	1.1275	996.0	10034	.534	1.3326	1.3159	1076.0	1617	.670
2800	1.1160-6	4702.2	11.7831	25.641	823	1.7459	-1.0351	6.5780	1.1301	1012.9	9761	.555	1.3352	1.3208	1095.1	1652	.665
2850	1.0821-6	5028.1	11.8984	25.307	833	1.7307	-1.0351	6.4354	1.1335	1030.2	9328	.575	1.3376	1.3256	1114.1	1685	.661
2900	1.0503-6	5343.6	12.0082	24.994	843	1.6972	-1.0342	6.1672	1.1379	1047.7	8758	.594	1.3400	1.3302	1132.8	1718	.658
2950	1.0207-6	5642.9	12.1105	24.708	853	1.6476	-1.0324	5.7892	1.1434	1065.4	8083	.611	1.3423	1.3346	1151.0	1750	.654
3000	9.9334-7	5921.2	12.2041	24.453	863	1.5858	-1.0299	5.3294	1.1501	1083.1	7346	.626	1.3444	1.3385	1168.5	1781	.652

TABLE 2.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.017413; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K	
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S		
900	3.9290-5	-103.3	8.7392	29.016	399	1.0000	-1.0000	1.1497	1.3320	586.1	636 .721	1.1493	1.3321	586.1	636	.721
950	3.7222-5	-45.6	8.8017	29.016	414	1.0000	-1.0000	1.1611	1.3276	601.2	667 .721	1.1605	1.3279	601.2	666	.721
1000	3.5361-5	12.8	8.8615	29.016	428	1.0000	-1.0000	1.1720	1.3236	615.9	696 .720	1.1710	1.3240	615.9	696	.720
1050	3.3677-5	71.6	8.9189	29.016	442	1.0000	-1.0000	1.1819	1.3200	630.2	725 .720	1.1803	1.3206	630.3	724	.720
1100	3.2147-5	130.9	8.9741	29.016	456	1.0000	-1.0000	1.1916	1.3166	644.2	754 .720	1.1892	1.3174	644.4	752	.720
1150	3.0749-5	190.8	9.0273	29.016	469	1.0000	-1.0000	1.2010	1.3133	657.9	782 .720	1.1978	1.3145	658.1	780	.720
1200	2.9468-5	251.0	9.0786	29.016	482	1.0000	-1.0000	1.2104	1.3102	671.2	810 .720	1.2059	1.3117	671.6	807	.720
1250	2.8289-5	311.8	9.1282	29.016	495	1.0000	-1.0000	1.2197	1.3071	684.2	838 .721	1.2136	1.3091	684.8	834	.720
1300	2.7201-5	373.0	9.1762	29.016	508	1.0000	-1.0000	1.2290	1.3041	697.0	866 .721	1.2209	1.3067	697.7	860	.721
1350	2.6193-5	434.7	9.2228	29.016	520	1.0001	-1.0000	1.2384	1.3011	709.4	894 .721	1.2279	1.3044	710.3	886	.721
1400	2.5258-5	496.9	9.2680	29.016	532	1.0001	-1.0000	1.2480	1.2981	721.6	922 .721	1.2346	1.3023	722.8	912	.721
1450	2.4387-5	559.5	9.3120	29.016	545	1.0002	-1.0000	1.2579	1.2951	733.6	950 .721	1.2409	1.3003	735.0	937	.721
1500	2.3574-5	622.6	9.3548	29.016	556	1.0003	-1.0000	1.2682	1.2921	745.2	979 .721	1.2469	1.2984	747.0	962	.721
1550	2.2813-5	686.3	9.3966	29.015	568	1.0005	-1.0000	1.2792	1.2890	756.7	1010 .720	1.2526	1.2966	758.9	987	.721
1600	2.2100-5	750.6	9.4374	29.015	580	1.0008	-1.0000	1.2912	1.2858	767.8	1041 .719	1.2580	1.2950	770.5	1012	.721
1650	2.1429-5	815.5	9.4773	29.014	591	1.0011	-1.0000	1.3044	1.2823	778.7	1075 .718	1.2632	1.2934	782.0	1037	.720
1700	2.0798-5	881.1	9.5164	29.013	603	1.0017	-1.0000	1.3194	1.2786	789.3	1110 .717	1.2681	1.2920	793.4	1062	.720
1750	2.0203-5	947.5	9.5549	29.011	614	1.0025	-1.0001	1.3368	1.2746	799.5	1149 .715	1.2727	1.2906	804.6	1086	.720
1800	1.9640-5	1014.8	9.5929	29.008	625	1.0037	-1.0001	1.3573	1.2701	809.5	1192 .712	1.2771	1.2894	815.6	1110	.719
1850	1.9107-5	1083.3	9.6304	29.005	636	1.0054	-1.0001	1.3820	1.2650	819.1	1242 .708	1.2812	1.2882	826.5	1134	.719
1900	1.8601-5	1153.1	9.6676	29.000	647	1.0077	-1.0002	1.4120	1.2594	828.3	1300 .703	1.2852	1.2871	837.4	1157	.719
1950	1.8119-5	1224.6	9.7048	28.993	658	1.0108	-1.0003	1.4489	1.2530	837.1	1369 .697	1.2889	1.2862	848.1	1180	.719
2000	1.7661-5	1298.1	9.7420	28.983	669	1.0151	-1.0005	1.4943	1.2459	845.5	1452 .688	1.2924	1.2853	858.7	1203	.718
2050	1.7222-5	1374.2	9.7796	28.971	679	1.0207	-1.0006	1.5504	1.2379	853.4	1554 .678	1.2958	1.2845	869.3	1226	.718
2100	1.6802-5	1453.4	9.8177	28.954	690	1.0281	-1.0009	1.6194	1.2293	861.0	1680 .665	1.2989	1.2838	879.9	1248	.718
2150	1.6399-5	1536.4	9.8568	28.932	700	1.0377	-1.0012	1.7038	1.2201	868.2	1837 .649	1.3019	1.2833	890.4	1270	.718
2200	1.6010-5	1624.0	9.8971	28.903	710	1.0499	-1.0017	1.8062	1.2105	875.3	2031 .632	1.3047	1.2828	901.0	1292	.717
2250	1.5634-5	1717.3	9.9390	28.865	721	1.0652	-1.0023	1.9289	1.2007	882.1	2269 .612	1.3074	1.2826	911.7	1314	.717
2300	1.5270-5	1817.3	9.9829	28.818	731	1.0840	-1.0030	2.0740	1.1911	889.0	2560 .592	1.3099	1.2825	922.5	1336	.716
2350	1.4914-5	1925.1	10.0293	28.760	740	1.1068	-1.0039	2.2430	1.1819	896.1	2909 .571	1.3123	1.2826	933.5	1357	.716
2400	1.4567-5	2042.0	10.0785	28.687	750	1.1336	-1.0051	2.4363	1.1735	903.5	3320 .550	1.3145	1.2829	944.6	1379	.715
2450	1.4226-5	2169.2	10.1310	28.599	760	1.1648	-1.0064	2.6534	1.1658	911.3	3795 .531	1.3166	1.2834	956.1	1401	.714
2500	1.3890-5	2307.7	10.1869	28.494	769	1.2003	-1.0080	2.8926	1.1592	919.6	4332 .514	1.3186	1.2842	967.9	1424	.713
2550	1.3559-5	2458.7	10.2467	28.371	779	1.2397	-1.0098	3.1511	1.1536	928.5	4920 .499	1.3206	1.2852	980.0	1447	.711
2600	1.3231-5	2623.1	10.3106	28.227	788	1.2827	-1.0119	3.4249	1.1489	938.0	5546 .487	1.3224	1.2866	992.6	1471	.708
2650	1.2906-5	2801.4	10.3785	28.064	798	1.3285	-1.0141	3.7092	1.1453	948.2	6189 .478	1.3242	1.2882	1005.7	1497	.706
2700	1.2584-5	2994.1	10.4505	27.879	807	1.3764	-1.0166	3.9982	1.1425	959.1	6823 .473	1.3261	1.2902	1019.2	1523	.703
2750	1.2264-5	3201.2	10.5265	27.675	816	1.4251	-1.0192	4.2847	1.1405	970.7	7421 .471	1.3279	1.2924	1033.3	1550	.699
2800	1.1948-5	3422.4	10.6062	27.452	825	1.4732	-1.0219	4.5608	1.1393	982.9	7956 .473	1.3297	1.2950	1047.9	1579	.695
2850	1.1636-5	3656.9	10.6892	27.212	835	1.5191	-1.0245	4.8170	1.1387	995.8	8403 .479	1.3316	1.2978	1063.1	1609	.691
2900	1.1328-5	3903.6	10.7750	26.957	844	1.5609	-1.0271	5.0433	1.1388	1009.2	8744 .487	1.3334	1.3009	1078.7	1640	.687
2950	1.1027-5	4160.6	10.8629	26.692	854	1.5967	-1.0295	5.2297	1.1395	1023.3	8971 .498	1.3354	1.3042	1094.8	1672	.682
3000	1.0732-5	4425.7	10.9520	26.419	864	1.6250	-1.0315	5.3669	1.1407	1037.8	9078 .511	1.3373	1.3078	1111.2	1705	.677

TABLE 2.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.017413; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9290-4	-103.3	8.0794	29.016	399	1.0000	-1.0000	1.1497	1.3320	586.1	636	.721	1.1493	1.3321	586.1	636	.721
950	3.7222-4	-45.6	8.1419	29.016	414	1.0000	-1.0000	1.1611	1.3276	601.2	667	.721	1.1605	1.3279	601.2	666	.721
1000	3.5361-4	12.8	8.2017	29.016	428	1.0000	-1.0000	1.1720	1.3236	615.9	696	.720	1.1710	1.3240	615.9	696	.720
1050	3.3677-4	71.6	8.2591	29.016	442	1.0000	-1.0000	1.1819	1.3200	630.2	725	.720	1.1803	1.3206	630.3	724	.720
1100	3.2147-4	130.9	8.3143	29.016	456	1.0000	-1.0000	1.1915	1.3166	644.2	754	.720	1.1892	1.3174	644.4	752	.720
1150	3.0749-4	190.8	8.3675	29.016	469	1.0000	-1.0000	1.2010	1.3133	657.9	782	.720	1.1978	1.3145	658.1	780	.720
1200	2.9468-4	251.0	8.4188	29.016	482	1.0000	-1.0000	1.2103	1.3102	671.2	810	.720	1.2059	1.3117	671.6	807	.720
1250	2.8289-4	311.8	8.4684	29.016	495	1.0000	-1.0000	1.2195	1.3071	684.2	838	.721	1.2136	1.3091	684.8	834	.720
1300	2.7201-4	373.0	8.5164	29.016	508	1.0000	-1.0000	1.2287	1.3041	697.0	866	.721	1.2209	1.3067	697.7	860	.721
1350	2.6193-4	434.7	8.5630	29.016	520	1.0000	-1.0000	1.2379	1.3012	709.5	893	.721	1.2279	1.3044	710.3	886	.721
1400	2.5258-4	496.8	8.6082	29.016	532	1.0001	-1.0000	1.2471	1.2983	721.7	921	.721	1.2346	1.3022	722.8	912	.721
1450	2.4387-4	559.4	8.6521	29.016	545	1.0001	-1.0000	1.2565	1.2955	733.7	949	.721	1.2409	1.3002	735.0	937	.721
1500	2.3574-4	622.4	8.6948	29.016	556	1.0001	-1.0000	1.2661	1.2926	745.4	977	.721	1.2469	1.2984	747.0	962	.721
1550	2.2813-4	686.0	8.7365	29.016	568	1.0002	-1.0000	1.2759	1.2898	756.9	1006	.721	1.2526	1.2966	758.9	987	.721
1600	2.2100-4	750.0	8.7772	29.016	580	1.0004	-1.0000	1.2862	1.2869	768.1	1036	.720	1.2580	1.2950	770.5	1012	.721
1650	2.1430-4	814.6	8.8169	29.015	591	1.0005	-1.0000	1.2970	1.2840	779.2	1066	.719	1.2632	1.2934	782.0	1037	.720
1700	2.0800-4	879.7	8.8558	29.015	603	1.0008	-1.0000	1.3084	1.2810	789.9	1098	.719	1.2681	1.2920	793.3	1062	.720
1750	2.0205-4	945.5	8.8939	29.014	614	1.0011	-1.0000	1.3208	1.2778	800.5	1130	.718	1.2727	1.2906	804.5	1086	.720
1800	1.9643-4	1011.8	8.9313	29.013	625	1.0016	-1.0000	1.3343	1.2746	810.8	1164	.717	1.2771	1.2893	815.5	1110	.720
1850	1.9111-4	1078.9	8.9681	29.011	636	1.0022	-1.0001	1.3493	1.2711	820.9	1201	.715	1.2812	1.2881	826.4	1134	.719
1900	1.8607-4	1146.8	9.0043	29.009	647	1.0031	-1.0001	1.3661	1.2675	830.8	1240	.713	1.2852	1.2870	837.2	1157	.719
1950	1.8128-4	1215.6	9.0400	29.006	658	1.0043	-1.0001	1.3853	1.2635	840.4	1282	.711	1.2889	1.2860	847.8	1180	.719
2000	1.7672-4	1285.4	9.0753	29.003	669	1.0058	-1.0002	1.4073	1.2593	849.7	1330	.708	1.2924	1.2850	858.4	1203	.718
2050	1.7238-4	1356.4	9.1104	28.998	679	1.0078	-1.0002	1.4330	1.2547	858.8	1383	.704	1.2958	1.2841	868.8	1226	.718
2100	1.6824-4	1428.7	9.1453	28.992	690	1.0105	-1.0003	1.4629	1.2497	867.6	1443	.700	1.2990	1.2833	879.1	1248	.718
2150	1.6428-4	1502.7	9.1801	28.983	700	1.0138	-1.0004	1.4980	1.2444	876.1	1512	.694	1.3020	1.2826	889.4	1270	.718
2200	1.6049-4	1578.6	9.2150	28.973	711	1.0181	-1.0006	1.5391	1.2386	884.3	1593	.687	1.3048	1.2819	899.6	1291	.718
2250	1.5685-4	1656.8	9.2501	28.959	721	1.0234	-1.0008	1.5874	1.2325	892.3	1687	.678	1.3075	1.2814	909.8	1313	.718
2300	1.5335-4	1737.5	9.2856	28.942	731	1.0300	-1.0011	1.6438	1.2260	900.0	1798	.669	1.3100	1.2809	920.0	1334	.718
2350	1.4998-4	1821.3	9.3216	28.921	741	1.0381	-1.0014	1.7094	1.2193	907.6	1928	.657	1.3124	1.2805	930.1	1355	.718
2400	1.4672-4	1908.6	9.3584	28.895	751	1.0479	-1.0018	1.7852	1.2125	915.0	2081	.644	1.3147	1.2802	940.3	1376	.717
2450	1.4357-4	2000.0	9.3961	28.863	761	1.0596	-1.0023	1.8718	1.2056	922.4	2259	.630	1.3169	1.2800	950.5	1397	.717
2500	1.4051-4	2096.0	9.4349	28.825	771	1.0734	-1.0029	1.9699	1.1988	929.8	2467	.616	1.3189	1.2799	960.7	1418	.717
2550	1.3753-4	2197.2	9.4749	28.778	780	1.0893	-1.0036	2.0797	1.1923	937.2	2705	.600	1.3208	1.2800	971.1	1439	.716
2600	1.3463-4	2304.2	9.5165	28.724	790	1.1076	-1.0044	2.2010	1.1861	944.8	2977	.584	1.3226	1.2802	981.6	1460	.716
2650	1.3180-4	2417.5	9.5597	28.659	800	1.1281	-1.0054	2.3333	1.1805	952.6	3281	.569	1.3243	1.2805	992.2	1482	.715
2700	1.2902-4	2537.7	9.6046	28.585	809	1.1509	-1.0065	2.4756	1.1753	960.8	3619	.554	1.3259	1.2810	1003.0	1503	.714
2750	1.2630-4	2665.2	9.6514	28.499	818	1.1758	-1.0077	2.6264	1.1708	969.2	3986	.539	1.3274	1.2817	1014.0	1525	.712
2800	1.2362-4	2800.4	9.7001	28.402	828	1.2027	-1.0091	2.7843	1.1669	978.0	4379	.526	1.3289	1.2825	1025.3	1547	.711
2850	1.2098-4	2943.7	9.7508	28.294	837	1.2313	-1.0106	2.9472	1.1636	987.2	4793	.515	1.3303	1.2835	1036.8	1570	.709
2900	1.1839-4	3095.2	9.8035	28.173	846	1.2613	-1.0122	3.1133	1.1608	996.7	5219	.505	1.3317	1.2847	1048.6	1593	.707
2950	1.1583-4	3255.0	9.8582	28.040	856	1.2923	-1.0140	3.2806	1.1587	1006.7	5648	.497	1.3331	1.2861	1060.6	1618	.705
3000	1.1332-4	3423.2	9.9147	27.895	865	1.3241	-1.0159	3.4468	1.1571	1017.2	6070	.491	1.3344	1.2876	1073.0	1642	.703

TABLE 2.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.017413; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.9290-3	-103.3	7.4196	29.016	399	1.0000	-1.0000	1.1497	1.3320	586.1	636 .721	1.1493	1.3321	586.1	636 .721
950	3.7222-3	-45.6	7.4821	29.016	414	1.0000	-1.0000	1.1612	1.3276	601.2	667 .721	1.1605	1.3279	601.2	666 .721
1000	3.5361-3	12.8	7.5419	29.016	428	1.0000	-1.0000	1.1720	1.3236	615.8	696 .720	1.1710	1.3240	615.9	696 .720
1050	3.3677-3	71.6	7.5994	29.016	442	1.0000	-1.0000	1.1819	1.3200	630.2	725 .720	1.1803	1.3206	630.3	724 .720
1100	3.2147-3	130.9	7.6546	29.016	456	1.0000	-1.0000	1.1915	1.3166	644.2	754 .720	1.1892	1.3174	644.4	752 .720
1150	3.0749-3	190.8	7.7077	29.016	469	1.0000	-1.0000	1.2010	1.3133	657.9	782 .720	1.1978	1.3145	658.1	780 .720
1200	2.9468-3	251.0	7.7590	29.016	482	1.0000	-1.0000	1.2103	1.3102	671.2	810 .720	1.2059	1.3117	671.6	807 .720
1250	2.8289-3	311.8	7.8086	29.016	495	1.0000	-1.0000	1.2194	1.3071	684.2	838 .721	1.2136	1.3091	684.8	834 .720
1300	2.7201-3	373.0	7.8566	29.016	508	1.0000	-1.0000	1.2285	1.3042	697.0	865 .721	1.2209	1.3067	697.7	860 .721
1350	2.6194-3	434.6	7.9032	29.016	520	1.0000	-1.0000	1.2376	1.3013	709.5	893 .721	1.2279	1.3044	710.3	886 .721
1400	2.5258-3	496.7	7.9483	29.016	532	1.0000	-1.0000	1.2467	1.2984	721.7	921 .721	1.2346	1.3022	722.8	912 .721
1450	2.4387-3	559.3	7.9923	29.016	545	1.0000	-1.0000	1.2558	1.2956	733.7	948 .721	1.2409	1.3002	735.0	937 .721
1500	2.3574-3	622.3	8.0350	29.016	556	1.0001	-1.0000	1.2650	1.2929	745.5	976 .721	1.2469	1.2984	747.0	962 .721
1550	2.2814-3	685.8	8.0766	29.016	568	1.0001	-1.0000	1.2744	1.2901	757.0	1005 .721	1.2526	1.2966	758.9	987 .721
1600	2.2101-3	749.8	8.1172	29.016	580	1.0002	-1.0000	1.2839	1.2874	768.3	1033 .720	1.2580	1.2950	770.5	1012 .721
1650	2.1431-3	814.2	8.1569	29.016	591	1.0002	-1.0000	1.2936	1.2847	779.4	1063 .720	1.2632	1.2934	782.0	1037 .720
1700	2.0800-3	879.1	8.1956	29.016	603	1.0004	-1.0000	1.3036	1.2820	790.2	1092 .720	1.2681	1.2919	793.3	1062 .720
1750	2.0206-3	944.6	8.2336	29.015	614	1.0005	-1.0000	1.3140	1.2792	800.9	1122 .719	1.2727	1.2906	804.5	1086 .720
1800	1.9644-3	1010.5	8.2707	29.015	625	1.0007	-1.0000	1.3248	1.2765	811.4	1153 .718	1.2771	1.2893	815.5	1110 .720
1850	1.9113-3	1077.1	8.3072	29.014	636	1.0010	-1.0000	1.3361	1.2737	821.7	1185 .718	1.2812	1.2881	826.4	1134 .719
1900	1.8609-3	1144.2	8.3430	29.013	647	1.0013	-1.0000	1.3481	1.2708	831.8	1218 .717	1.2852	1.2870	837.1	1157 .719
1950	1.8131-3	1211.9	8.3782	29.012	658	1.0018	-1.0001	1.3610	1.2679	841.7	1252 .716	1.2889	1.2859	847.7	1180 .719
2000	1.7677-3	1280.3	8.4128	29.011	669	1.0024	-1.0001	1.3748	1.2649	851.5	1287 .714	1.2925	1.2849	858.2	1203 .718
2050	1.7245-3	1349.4	8.4469	29.009	679	1.0032	-1.0001	1.3898	1.2618	861.0	1324 .713	1.2958	1.2840	868.6	1226 .718
2100	1.6833-3	1419.3	8.4806	29.006	690	1.0042	-1.0001	1.4063	1.2585	870.4	1364 .711	1.2990	1.2831	878.9	1248 .718
2150	1.6439-3	1490.0	8.5139	29.003	700	1.0055	-1.0002	1.4244	1.2552	879.6	1406 .709	1.3020	1.2823	889.0	1270 .718
2200	1.6063-3	1561.8	8.5469	28.999	711	1.0070	-1.0002	1.4446	1.2516	888.5	1452 .707	1.3049	1.2816	899.1	1291 .718
2250	1.5704-3	1634.5	8.5796	28.993	721	1.0090	-1.0003	1.4670	1.2479	897.3	1503 .704	1.3076	1.2809	909.1	1313 .718
2300	1.5359-3	1708.5	8.6121	28.987	731	1.0113	-1.0004	1.4922	1.2441	906.0	1558 .700	1.3101	1.2803	919.0	1334 .718
2350	1.5028-3	1783.8	8.6445	28.979	741	1.0142	-1.0005	1.5205	1.2401	914.4	1619 .696	1.3126	1.2797	928.9	1355 .718
2400	1.4710-3	1860.6	8.6768	28.969	751	1.0177	-1.0006	1.5522	1.2359	922.7	1688 .691	1.3149	1.2792	938.7	1376 .718
2450	1.4404-3	1939.1	8.7092	28.957	761	1.0219	-1.0008	1.5879	1.2315	930.8	1764 .685	1.3170	1.2788	948.5	1397 .718
2500	1.4109-3	2019.5	8.7417	28.943	771	1.0269	-1.0010	1.6278	1.2271	938.7	1850 .679	1.3191	1.2784	958.2	1417 .718
2550	1.3824-3	2102.0	8.7743	28.926	781	1.0327	-1.0013	1.6724	1.2225	946.6	1947 .671	1.3210	1.2781	967.9	1438 .718
2600	1.3549-3	2186.8	8.8073	28.906	791	1.0395	-1.0016	1.7219	1.2179	954.4	2055 .663	1.3229	1.2778	977.6	1458 .717
2650	1.3282-3	2274.2	8.8406	28.882	801	1.0474	-1.0019	1.7766	1.2133	962.1	2177 .653	1.3247	1.2777	987.3	1479 .717
2700	1.3024-3	2364.5	8.8744	28.854	810	1.0563	-1.0024	1.8366	1.2088	969.8	2312 .643	1.3263	1.2776	997.0	1499 .717
2750	1.2772-3	2458.0	8.9086	28.822	820	1.0664	-1.0028	1.9019	1.2043	977.4	2463 .633	1.3279	1.2775	1006.7	1520 .716
2800	1.2528-3	2554.8	8.9435	28.785	829	1.0777	-1.0034	1.9723	1.2000	985.2	2630 .622	1.3294	1.2776	1016.5	1540 .716
2850	1.2290-3	2655.3	8.9791	28.742	839	1.0902	-1.0040	2.0476	1.1960	993.0	2812 .611	1.3308	1.2777	1026.4	1561 .715
2900	1.2058-3	2759.6	9.0154	28.693	848	1.1038	-1.0047	2.1274	1.1922	1000.9	3011 .599	1.3322	1.2780	1036.3	1581 .714
2950	1.1831-3	2868.1	9.0525	28.639	857	1.1186	-1.0055	2.2110	1.1887	1009.0	3225 .588	1.3335	1.2783	1046.3	1602 .714
3000	1.1609-3	2980.8	9.0904	28.578	866	1.1343	-1.0064	2.2977	1.1856	1017.2	3454 .576	1.3347	1.2787	1056.4	1623 .713

TABLE 2.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.017413; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9645-2	-103.3	6.9585	29.016	399	1.0000	-1.0000	1.1497	1.3320	586.1	636	.721	1.1493	1.3321	586.1	636	.721
950	1.8611-2	-45.6	7.0209	29.016	414	1.0000	-1.0000	1.1612	1.3276	601.2	667	.721	1.1605	1.3279	601.2	666	.721
1000	1.7681-2	12.8	7.0808	29.016	428	1.0000	-1.0000	1.1720	1.3236	615.8	697	.720	1.1710	1.3240	615.9	696	.720
1050	1.6839-2	71.6	7.1382	29.016	442	1.0000	-1.0000	1.1819	1.3200	630.2	725	.720	1.1803	1.3206	630.3	724	.720
1100	1.6073-2	131.0	7.1934	29.016	456	1.0000	-1.0000	1.1916	1.3166	644.2	754	.720	1.1892	1.3174	644.4	752	.720
1150	1.5375-2	190.8	7.2466	29.017	469	1.0000	-1.0000	1.2010	1.3133	657.8	782	.720	1.1978	1.3145	658.1	780	.720
1200	1.4734-2	251.0	7.2979	29.017	482	1.0000	-1.0000	1.2103	1.3102	671.2	810	.720	1.2059	1.3117	671.6	807	.720
1250	1.4145-2	311.8	7.3475	29.017	495	1.0000	-1.0000	1.2194	1.3071	684.2	838	.721	1.2136	1.3091	684.8	834	.720
1300	1.3601-2	373.0	7.3955	29.017	508	1.0000	-1.0000	1.2285	1.3042	697.0	865	.721	1.2209	1.3067	697.7	860	.721
1350	1.3097-2	434.6	7.4420	29.017	520	1.0000	-1.0000	1.2375	1.3013	709.5	893	.721	1.2279	1.3044	710.3	886	.721
1400	1.2629-2	496.7	7.4872	29.017	532	1.0000	-1.0000	1.2466	1.2984	721.7	920	.721	1.2346	1.3022	722.8	912	.721
1450	1.2194-2	559.3	7.5311	29.017	545	1.0000	-1.0000	1.2556	1.2957	733.7	948	.721	1.2409	1.3002	735.0	937	.721
1500	1.1787-2	622.3	7.5738	29.017	556	1.0000	-1.0000	1.2647	1.2929	745.5	976	.721	1.2469	1.2984	747.0	962	.721
1550	1.1407-2	685.8	7.6154	29.017	568	1.0000	-1.0000	1.2738	1.2902	757.0	1004	.721	1.2526	1.2966	758.9	987	.721
1600	1.1051-2	749.7	7.6560	29.017	580	1.0001	-1.0000	1.2830	1.2876	768.3	1033	.721	1.2580	1.2949	770.5	1012	.721
1650	1.0716-2	814.1	7.6956	29.017	591	1.0001	-1.0000	1.2924	1.2849	779.4	1061	.720	1.2632	1.2934	782.0	1037	.720
1700	1.0400-2	878.9	7.7343	29.016	603	1.0002	-1.0000	1.3019	1.2823	790.3	1090	.720	1.2681	1.2919	793.3	1062	.720
1750	1.0103-2	944.3	7.7722	29.016	614	1.0003	-1.0000	1.3116	1.2797	801.1	1120	.719	1.2727	1.2906	804.5	1086	.720
1800	9.8224-3	1010.1	7.8093	29.016	625	1.0004	-1.0000	1.3215	1.2771	811.6	1149	.719	1.2771	1.2893	815.5	1110	.720
1850	9.5569-3	1076.4	7.8457	29.016	636	1.0005	-1.0000	1.3317	1.2745	822.0	1180	.718	1.2812	1.2881	826.3	1134	.719
1900	9.3052-3	1143.3	7.8813	29.015	647	1.0007	-1.0000	1.3422	1.2719	832.2	1210	.718	1.2852	1.2870	837.1	1157	.719
1950	9.0664-3	1210.6	7.9163	29.014	658	1.0010	-1.0000	1.3531	1.2693	842.2	1242	.717	1.2889	1.2859	847.7	1180	.719
2000	8.8395-3	1278.6	7.9507	29.014	669	1.0013	-1.0001	1.3644	1.2667	852.0	1274	.716	1.2925	1.2849	858.2	1203	.718
2050	8.6235-3	1347.1	7.9845	29.012	679	1.0018	-1.0001	1.3763	1.2640	861.7	1307	.716	1.2958	1.2840	868.5	1226	.718
2100	8.4178-3	1416.2	8.0179	29.011	690	1.0023	-1.0001	1.3889	1.2614	871.3	1341	.715	1.2990	1.2831	878.8	1248	.718
2150	8.2215-3	1486.0	8.0507	29.009	700	1.0030	-1.0001	1.4022	1.2586	880.7	1376	.714	1.3020	1.2823	888.9	1270	.718
2200	8.0341-3	1556.5	8.0831	29.007	711	1.0038	-1.0001	1.4164	1.2559	889.9	1413	.713	1.3049	1.2815	898.9	1291	.718
2250	7.8548-3	1627.7	8.1151	29.004	721	1.0048	-1.0002	1.4317	1.2531	899.0	1452	.711	1.3076	1.2808	908.9	1313	.718
2300	7.6831-3	1699.6	8.1467	29.001	731	1.0060	-1.0002	1.4481	1.2502	908.0	1493	.709	1.3102	1.2801	918.8	1334	.718
2350	7.5186-3	1772.5	8.1781	28.997	742	1.0074	-1.0003	1.4659	1.2472	916.8	1537	.707	1.3126	1.2795	928.5	1355	.718
2400	7.3607-3	1846.3	8.2091	28.992	752	1.0092	-1.0003	1.4853	1.2442	925.4	1584	.705	1.3149	1.2789	938.2	1376	.718
2450	7.2089-3	1921.0	8.2400	28.986	762	1.0112	-1.0004	1.5064	1.2411	933.9	1634	.702	1.3171	1.2784	947.9	1396	.718
2500	7.0630-3	1996.9	8.2706	28.978	771	1.0137	-1.0005	1.5295	1.2380	942.3	1689	.699	1.3192	1.2780	957.4	1417	.718
2550	6.9224-3	2074.0	8.3012	28.970	781	1.0166	-1.0007	1.5547	1.2347	950.6	1748	.695	1.3212	1.2775	966.9	1437	.718
2600	6.7869-3	2152.4	8.3316	28.959	791	1.0199	-1.0008	1.5822	1.2315	958.8	1813	.690	1.3230	1.2771	976.4	1458	.718
2650	6.6561-3	2232.3	8.3620	28.947	801	1.0238	-1.0010	1.6123	1.2281	966.8	1884	.686	1.3248	1.2768	985.8	1478	.718
2700	6.5296-3	2313.7	8.3925	28.933	810	1.0283	-1.0012	1.6451	1.2247	974.8	1961	.680	1.3265	1.2765	995.2	1499	.717
2750	6.4073-3	2396.9	8.4230	28.917	820	1.0333	-1.0014	1.6806	1.2214	982.7	2045	.674	1.3281	1.2763	1004.6	1519	.717
2800	6.2888-3	2481.8	8.4536	28.898	830	1.0391	-1.0017	1.7191	1.2180	990.6	2137	.667	1.3297	1.2761	1013.9	1539	.717
2850	6.1739-3	2568.8	8.4844	28.877	839	1.0455	-1.0020	1.7605	1.2147	998.4	2238	.660	1.3312	1.2760	1023.3	1559	.716
2900	6.0622-3	2657.9	8.5154	28.852	848	1.0526	-1.0024	1.8048	1.2114	1006.2	2347	.653	1.3326	1.2759	1032.6	1579	.716
2950	5.9537-3	2749.3	8.5466	28.824	858	1.0605	-1.0028	1.8519	1.2083	1014.0	2465	.645	1.3339	1.2759	1042.0	1599	.715
3000	5.8482-3	2843.2	8.5782	28.793	867	1.0691	-1.0033	1.9017	1.2053	1021.8	2592	.636	1.3352	1.2760	1051.4	1619	.715

TABLE 2C . LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.017413; EQUIV.RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
					PRESSURE = 0.01 ATM											
200	1.824-5	-904.8	7.5865	29.016	1.0510	1.789-5	29.364	132	1.000	-1.000	0.9984	1.3959	281	180	.734	200
220	1.654-5	-880.4	7.7024	29.016	1.5806	1.625-5	29.336	143	1.000	-1.000	0.9993	1.3959	295	195	.731	220
240	1.479-5	-817.5	7.9731	29.016	6.1794	1.476-5	29.061	151	1.000	-1.000	1.0122	1.3940	309	208	.735	240
					PRESSURE = 0.10 ATM											
200	1.824-4	-905.0	6.9457	29.016	1.0134	1.789-4	29.365	132	1.000	-1.000	0.9984	1.3959	281	180	.734	200
220	1.658-4	-884.4	7.0440	29.016	1.0682	1.626-4	29.362	143	1.000	-1.000	0.9981	1.3961	295	196	.730	220
240	1.516-4	-860.0	7.1499	29.016	1.5063	1.490-4	29.335	154	1.000	-1.000	0.9995	1.3958	308	211	.727	240
260	1.376-4	-810.7	7.3456	29.016	4.1247	1.366-4	29.147	162	1.000	-1.000	1.0088	1.3942	322	225	.729	260
280	1.263-4	-769.7	7.4996	29.016	1.0160	1.263-4	29.016	171	1.000	-1.000	1.0160	1.3928	334	238	.730	280
					PRESSURE = 1.00 ATM											
200	1.824-3	-905.0	6.3061	29.016	1.0096	1.789-3	29.365	132	1.000	-1.000	0.9983	1.3959	281	180	.734	200
220	1.658-3	-884.8	6.4026	29.016	1.0172	1.627-3	29.365	143	1.000	-1.000	0.9980	1.3961	295	196	.730	220
240	1.520-3	-864.1	6.4925	29.016	1.0635	1.491-3	29.362	154	1.000	-1.000	0.9982	1.3960	308	212	.726	240
260	1.400-3	-840.9	6.5850	29.016	1.3180	1.375-3	29.343	164	1.000	-1.000	0.9996	1.3956	321	227	.724	260
280	1.290-3	-802.5	6.7270	29.016	2.0679	1.273-3	29.255	173	1.000	-1.000	1.0048	1.3944	333	241	.724	280
298	1.186-3	-751.3	6.9036	29.016	1.0173	1.186-3	29.016	180	1.000	-1.000	1.0173	1.3921	345	252	.729	298
300	1.179-3	-749.4	6.9099	29.016	1.0175	1.179-3	29.016	181	1.000	-1.000	1.0175	1.3920	346	253	.729	300
320	1.105-3	-729.0	6.9756	29.016	1.0194	1.105-3	29.016	191	1.000	-1.000	1.0194	1.3910	357	267	.728	320
					PRESSURE = 10.00 ATM											
200	1.823-2	-905.0	5.6666	29.016	1.0092	1.789-2	29.365	132	1.000	-1.000	0.9983	1.3959	281	180	.734	200
220	1.658-2	-884.8	5.7629	29.016	1.0121	1.627-2	29.365	143	1.000	-1.000	0.9980	1.3961	295	196	.730	220
240	1.520-2	-864.5	5.8512	29.016	1.0194	1.491-2	29.365	154	1.000	-1.000	0.9981	1.3960	308	212	.726	240
260	1.403-2	-843.9	5.9337	29.016	1.0479	1.376-2	29.363	164	1.000	-1.000	0.9987	1.3957	321	227	.723	260
280	1.301-2	-815.7	6.0377	29.016	1.1597	1.278-2	29.354	174	1.000	-1.000	1.0001	1.3951	333	242	.721	280
298	1.220-2	-793.3	6.1151	29.016	1.3314	1.199-2	29.330	183	1.000	-1.000	1.0025	1.3942	343	255	.721	298
300	1.212-2	-790.9	6.1235	29.016	1.3581	1.191-2	29.326	184	1.000	-1.000	1.0028	1.3941	344	256	.721	300
320	1.128-2	-759.7	6.2239	29.016	1.8179	1.114-2	29.248	193	1.000	-1.000	1.0083	1.3926	356	269	.723	320
340	1.045-2	-714.9	6.3593	29.016	2.7683	1.042-2	29.064	200	1.000	-1.000	1.0193	1.3902	368	280	.727	340
360	9.823-3	-688.2	6.4362	29.016	1.0242	9.823-3	29.016	209	1.000	-1.000	1.0242	1.3885	378	293	.729	360
380	9.306-3	-667.7	6.4916	29.016	1.0271	9.306-3	29.016	217	1.000	-1.000	1.0271	1.3869	389	307	.728	380
					PRESSURE = 50.00 ATM											
200	9.104-2	-905.0	5.2196	29.016	1.0092	8.947-2	29.365	132	1.000	-1.000	0.9983	1.3959	281	180	.734	200
220	8.277-2	-884.8	5.3159	29.016	1.0117	8.133-2	29.365	143	1.000	-1.000	0.9980	1.3961	295	196	.730	220
240	7.589-2	-864.5	5.4041	29.016	1.0155	7.456-2	29.365	154	1.000	-1.000	0.9981	1.3960	308	212	.726	240
260	7.006-2	-844.2	5.4856	29.016	1.0240	6.882-2	29.365	164	1.000	-1.000	0.9986	1.3957	321	227	.723	260
280	6.506-2	-816.9	5.5863	29.016	1.0806	6.390-2	29.363	174	1.000	-1.000	0.9997	1.3952	333	242	.721	280
298	6.107-2	-797.0	5.6551	29.016	1.1153	6.000-2	29.358	183	1.000	-1.000	1.0012	1.3944	343	255	.720	298
300	6.069-2	-794.9	5.6620	29.016	1.1207	5.963-2	29.357	184	1.000	-1.000	1.0014	1.3944	344	256	.720	300
320	5.683-2	-771.7	5.7369	29.016	1.2118	5.587-2	29.342	193	1.000	-1.000	1.0039	1.3933	355	270	.720	320
340	5.332-2	-745.9	5.8152	29.016	1.3916	5.252-2	29.305	202	1.000	-1.000	1.0078	1.3918	366	283	.722	340
360	5.003-2	-715.1	5.9030	29.016	1.7110	4.947-2	29.228	211	1.000	-1.000	1.0140	1.3900	377	295	.724	360
380	4.680-2	-676.1	6.0085	29.016	2.2359	4.663-2	29.083	218	1.000	-1.000	1.0238	1.3874	388	307	.727	380
400	4.420-2	-647.1	6.0832	29.016	1.0303	4.420-2	29.016	226	1.000	-1.000	1.0303	1.3853	398	320	.728	400
420	4.210-2	-626.4	6.1336	29.016	1.0337	4.210-2	29.016	234	1.000	-1.000	1.0337	1.3835	408	333	.728	420

TABLE 3A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.034826; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 29.0659;
DRY AIR; GASEOUS COMPOSITION: CO2= .07158; H2O= .06058; N2= .75719; O2= .10157; AR= .00908

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7711-3	8.8554-2	-1573.7	7.8231	7.1645	6.5058	5.8471	5.3868	1.0211	1.3892	281.9	124	168	.7568	200
210	1.6867-3	8.4337-2	-1563.5	7.8730	7.2143	6.5556	5.8970	5.4366	1.0215	1.3889	288.9	130	176	.7537	210
220	1.6101-3	8.0504-2	-1553.2	7.9205	7.2618	6.6032	5.9445	5.4841	1.0220	1.3887	295.6	135	184	.7509	220
230	1.5401-3	7.7004-2	-1543.0	7.9659	7.3073	6.6486	5.9899	5.5296	1.0227	1.3883	302.2	141	192	.7482	230
240	1.4759-3	7.3795-2	-1532.8	8.0095	7.3508	6.6921	6.0335	5.5731	1.0234	1.3880	308.7	146	201	.7459	240
250	1.4169-3	7.0843-2	-1522.6	8.0513	7.3926	6.7339	6.0753	5.6149	1.0242	1.3875	315.0	151	209	.7438	250
260	1.3624-3	6.8119-2	-1512.3	8.0915	7.4328	6.7741	6.1155	5.6551	1.0251	1.3870	321.2	157	216	.7421	260
270	1.3119-3	6.5596-2	-1502.0	8.1302	7.4715	6.8128	6.1542	5.6938	1.0262	1.3865	327.2	162	224	.7407	270
280	1.2651-3	6.3253-2	-1491.8	8.1675	7.5088	6.8502	6.1915	5.7311	1.0273	1.3859	333.2	167	232	.7395	280
290	1.2214-3	6.1072-2	-1481.5	8.2036	7.5449	6.8862	6.2276	5.7672	1.0285	1.3853	339.0	172	239	.7387	290
298	1.1880-3	5.9402-2	-1473.1	8.2321	7.5734	6.9148	6.2561	5.7957	1.0295	1.3848	343.7	176	245	.7382	298
300	1.1807-3	5.9036-2	-1471.2	8.2385	7.5798	6.9211	6.2625	5.8021	1.0297	1.3846	344.7	177	247	.7381	300
310	1.1426-3	5.7132-2	-1460.9	8.2722	7.6136	6.9549	6.2963	5.8359	1.0311	1.3839	350.3	182	254	.7380	310
320	1.1069-3	5.5346-2	-1450.6	8.3050	7.6463	6.9877	6.3290	5.8686	1.0325	1.3832	355.8	186	261	.7380	320
330	1.0734-3	5.3669-2	-1440.3	8.3368	7.6781	7.0195	6.3608	5.9004	1.0341	1.3824	361.2	191	268	.7382	330
340	1.0418-3	5.2091-2	-1429.9	8.3677	7.7090	7.0504	6.3917	5.9313	1.0357	1.3816	366.6	196	274	.7384	340
350	1.0120-3	5.0602-2	-1419.5	8.3977	7.7391	7.0804	6.4217	5.9614	1.0373	1.3808	371.8	200	281	.7385	350
360	9.8393-4	4.9197-2	-1409.2	8.4270	7.7683	7.1097	6.4510	5.9906	1.0391	1.3799	377.0	205	288	.7383	360
370	9.5734-4	4.7867-2	-1398.8	8.4555	7.7968	7.1382	6.4795	6.0191	1.0409	1.3790	382.0	209	295	.7380	370
380	9.3215-4	4.6607-2	-1388.3	8.4833	7.8246	7.1659	6.5073	6.0469	1.0427	1.3780	387.0	214	302	.7377	380
390	9.0825-4	4.5412-2	-1377.9	8.5104	7.8517	7.1930	6.5344	6.0740	1.0446	1.3771	392.0	218	309	.7374	390
400	8.8554-4	4.4277-2	-1367.5	8.5368	7.8782	7.2195	6.5609	6.1005	1.0466	1.3761	396.8	222	316	.7370	400
410	8.6394-4	4.3197-2	-1357.0	8.5627	7.9040	7.2454	6.5867	6.1263	1.0487	1.3751	401.6	227	322	.7368	410
420	8.4337-4	4.2169-2	-1346.5	8.5880	7.9293	7.2707	6.6120	6.1516	1.0508	1.3741	406.3	231	329	.7367	420
430	8.2376-4	4.1188-2	-1336.0	8.6128	7.9541	7.2954	6.6368	6.1764	1.0529	1.3730	411.0	235	336	.7365	430
440	8.0504-4	4.0252-2	-1325.4	8.6370	7.9783	7.3197	6.6610	6.2006	1.0551	1.3719	415.5	239	342	.7364	440
450	7.8715-4	3.9357-2	-1314.9	8.6607	8.0021	7.3434	6.6847	6.2244	1.0574	1.3709	420.1	243	349	.7364	450
460	7.7004-4	3.8502-2	-1304.3	8.6840	8.0253	7.3667	6.7080	6.2476	1.0597	1.3698	424.5	247	355	.7363	460
470	7.5365-4	3.7683-2	-1293.7	8.7068	8.0481	7.3895	6.7308	6.2704	1.0620	1.3686	429.0	251	362	.7363	470
480	7.3795-4	3.6898-2	-1283.0	8.7292	8.0705	7.4119	6.7532	6.2928	1.0644	1.3675	433.3	255	369	.7363	480
490	7.2289-4	3.6145-2	-1272.4	8.7512	8.0925	7.4338	6.7752	6.3148	1.0668	1.3664	437.6	259	375	.7363	490
500	7.0843-4	3.5422-2	-1261.7	8.7727	8.1141	7.4554	6.7968	6.3364	1.0693	1.3652	441.9	263	381	.7363	500
510	6.9454-4	3.4727-2	-1251.0	8.7939	8.1353	7.4766	6.8180	6.3576	1.0718	1.3641	446.1	267	388	.7362	510
520	6.8119-4	3.4059-2	-1240.3	8.8148	8.1561	7.4974	6.8388	6.3784	1.0743	1.3629	450.3	270	395	.7361	520
530	6.6833-4	3.3417-2	-1229.5	8.8353	8.1766	7.5179	6.8593	6.3989	1.0768	1.3617	454.4	274	401	.7360	530
540	6.5596-4	3.2798-2	-1218.7	8.8554	8.1968	7.5381	6.8794	6.4190	1.0794	1.3606	458.4	278	408	.7359	540
550	6.4403-4	3.2202-2	-1207.9	8.8752	8.2166	7.5579	6.8993	6.4389	1.0820	1.3594	462.5	282	414	.7358	550
560	6.3253-4	3.1626-2	-1197.1	8.8948	8.2361	7.5774	6.9188	6.4584	1.0847	1.3582	466.4	285	421	.7356	560
570	6.2143-4	3.1072-2	-1186.2	8.9140	8.2553	7.5967	6.9380	6.4776	1.0873	1.3570	470.4	289	427	.7355	570
580	6.1072-4	3.0536-2	-1175.3	8.9329	8.2743	7.6156	6.9569	6.4965	1.0900	1.3558	474.3	293	434	.7353	580
590	6.0037-4	3.0018-2	-1164.4	8.9516	8.2929	7.6342	6.9756	6.5152	1.0927	1.3546	478.1	296	440	.7351	590

TABLE 3A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.034826; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 29.0659;
DRY AIR; GASEOUS COMPOSITION: CO2= .07158; H2O= .06058; N2= .75719; O2= .10157; AR= .00908

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.9036-4	2.9518-2	-1153.5	8.9700	8.3113	7.6526	6.9940	6.5336	1.0954	1.3534	482.0	300	447	.7349	600
610	5.8068-4	2.9034-2	-1142.5	8.9881	8.3294	7.6708	7.0121	6.5517	1.0981	1.3523	485.8	303	453	.7347	610
620	5.7132-4	2.8566-2	-1131.5	9.0060	8.3473	7.6886	7.0300	6.5696	1.1009	1.3511	489.5	307	460	.7344	620
630	5.6225-4	2.8112-2	-1120.5	9.0236	8.3649	7.7063	7.0476	6.5872	1.1036	1.3499	493.2	310	467	.7341	630
640	5.5346-4	2.7673-2	-1109.4	9.0410	8.3823	7.7237	7.0650	6.6046	1.1064	1.3487	496.9	314	473	.7338	640
650	5.4495-4	2.7247-2	-1098.4	9.0582	8.3995	7.7409	7.0822	6.6218	1.1091	1.3475	500.6	317	480	.7335	650
660	5.3669-4	2.6835-2	-1087.3	9.0751	8.4165	7.7578	7.0991	6.6388	1.1119	1.3464	504.2	321	486	.7332	660
670	5.2868-4	2.6434-2	-1076.1	9.0919	8.4332	7.7746	7.1159	6.6555	1.1147	1.3452	507.8	324	493	.7329	670
680	5.2091-4	2.6045-2	-1065.0	9.1084	8.4498	7.7911	7.1324	6.6720	1.1175	1.3440	511.3	328	500	.7326	680
690	5.1336-4	2.5668-2	-1053.8	9.1247	8.4661	7.8074	7.1488	6.6884	1.1203	1.3429	514.8	331	506	.7323	690
700	5.0602-4	2.5301-2	-1042.6	9.1409	8.4822	7.8236	7.1649	6.7045	1.1231	1.3418	518.3	334	513	.7320	700
710	4.9890-4	2.4945-2	-1031.3	9.1568	8.4982	7.8395	7.1808	6.7205	1.1258	1.3406	521.8	338	520	.7317	710
720	4.9197-4	2.4598-2	-1020.0	9.1726	8.5139	7.8553	7.1966	6.7362	1.1286	1.3395	525.2	341	526	.7314	720
730	4.8523-4	2.4261-2	-1008.7	9.1882	8.5295	7.8709	7.2122	6.7518	1.1314	1.3384	528.7	344	533	.7312	730
740	4.7867-4	2.3934-2	-997.4	9.2036	8.5449	7.8863	7.2276	6.7672	1.1342	1.3373	532.0	348	539	.7309	740
750	4.7229-4	2.3614-2	-986.1	9.2188	8.5602	7.9015	7.2429	6.7825	1.1369	1.3362	535.4	351	546	.7306	750
760	4.6607-4	2.3304-2	-974.7	9.2339	8.5753	7.9166	7.2579	6.7975	1.1397	1.3351	538.8	354	553	.7303	760
770	4.6002-4	2.3001-2	-963.3	9.2488	8.5902	7.9315	7.2729	6.8125	1.1424	1.3340	542.1	357	559	.7301	770
780	4.5412-4	2.2706-2	-951.8	9.2636	8.6049	7.9463	7.2876	6.8272	1.1451	1.3330	545.4	361	566	.7298	780
790	4.4838-4	2.2419-2	-940.4	9.2782	8.6195	7.9609	7.3022	6.8418	1.1479	1.3319	548.6	364	572	.7296	790
800	4.4277-4	2.2139-2	-928.9	9.2927	8.6340	7.9753	7.3167	6.8563	1.1506	1.3309	551.9	367	579	.7293	800
810	4.3730-4	2.1865-2	-917.4	9.3070	8.6483	7.9896	7.3310	6.8706	1.1533	1.3299	555.1	370	585	.7291	810
820	4.3197-4	2.1599-2	-905.8	9.3211	8.6625	8.0038	7.3451	6.8848	1.1559	1.3288	558.3	373	592	.7289	820
830	4.2677-4	2.1338-2	-894.2	9.3352	8.6765	8.0178	7.3592	6.8988	1.1586	1.3278	561.5	376	598	.7287	830
840	4.2169-4	2.1084-2	-882.6	9.3491	8.6904	8.0317	7.3731	6.9127	1.1612	1.3269	564.6	379	605	.7286	840
850	4.1673-4	2.0836-2	-871.0	9.3628	8.7041	8.0455	7.3868	6.9264	1.1638	1.3259	567.8	383	611	.7284	850
860	4.1188-4	2.0594-2	-859.4	9.3764	8.7178	8.0591	7.4004	6.9401	1.1664	1.3249	570.9	386	618	.7282	860
870	4.0715-4	2.0357-2	-847.7	9.3899	8.7313	8.0726	7.4139	6.9536	1.1690	1.3240	574.0	389	624	.7281	870
880	4.0252-4	2.0126-2	-836.0	9.4033	8.7446	8.0860	7.4273	6.9669	1.1715	1.3230	577.1	392	631	.7279	880
890	3.9800-4	1.9900-2	-824.3	9.4166	8.7579	8.0992	7.4406	6.9802	1.1741	1.3221	580.2	395	637	.7277	890
900	3.9357-4	1.9679-2	-812.5	9.4297	8.7710	8.1124	7.4537	6.9933	1.1766	1.3212	583.2	398	643	.7276	900
910	3.8925-4	1.9462-2	-800.7	9.4427	8.7840	8.1254	7.4667	7.0063	1.1790	1.3203	586.3	401	650	.7274	910
920	3.8502-4	1.9251-2	-788.9	9.4556	8.7969	8.1383	7.4796	7.0192	1.1815	1.3195	589.3	404	656	.7273	920
930	3.8088-4	1.9044-2	-777.1	9.4684	8.8097	8.1511	7.4924	7.0320	1.1839	1.3186	592.3	407	662	.7271	930
940	3.7683-4	1.8841-2	-765.2	9.4811	8.8224	8.1637	7.5051	7.0447	1.1863	1.3178	595.3	410	669	.7270	940
950	3.7286-4	1.8643-2	-753.4	9.4936	8.8350	8.1763	7.5176	7.0573	1.1886	1.3169	598.2	413	675	.7269	950
960	3.6898-4	1.8449-2	-741.5	9.5061	8.8474	8.1888	7.5301	7.0697	1.1909	1.3161	601.2	416	681	.7268	960
970	3.6517-4	1.8259-2	-729.5	9.5184	8.8598	8.2011	7.5425	7.0821	1.1932	1.3153	604.1	419	687	.7266	970
980	3.6145-4	1.8072-2	-717.6	9.5307	8.8720	8.2134	7.5547	7.0943	1.1955	1.3145	607.0	421	693	.7265	980
990	3.5779-4	1.7890-2	-705.6	9.5428	8.8842	8.2255	7.5669	7.1065	1.1977	1.3138	610.0	424	700	.7264	990

TABLE 3A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.034826; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 29.0659;
DRY AIR; GASEOUS COMPOSITION: CO2= .07158; H2O= .06058; N2= .75719; O2= .10157; AR= .00908

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
1000	3.5422-4	1.7711-2	-693.7	9.5549	8.8962	8.2376	7.5789	7.1185	1.1999	1.3130	612.9	427	706	.7263	1000
1050	3.3735-4	1.6867-2	-633.4	9.6137	8.9550	8.2964	7.6377	7.1773	1.2101	1.3096	627.2	441	736	.7259	1050
1100	3.2201-4	1.6101-2	-572.6	9.6702	9.0115	8.3529	7.6942	7.2338	1.2199	1.3063	641.1	455	765	.7256	1100
1150	3.0801-4	1.5401-2	-511.4	9.7246	9.0660	8.4073	7.7487	7.2883	1.2291	1.3033	654.8	469	794	.7255	1150
1200	2.9518-4	1.4759-2	-449.7	9.7771	9.1185	8.4598	7.8012	7.3408	1.2380	1.3005	668.1	482	823	.7253	1200
1250	2.8337-4	1.4169-2	-387.6	9.8279	9.1692	8.5105	7.8519	7.3915	1.2464	1.2979	681.2	495	851	.7252	1250
1300	2.7247-4	1.3624-2	-325.1	9.8769	9.2182	8.5596	7.9009	7.4405	1.2544	1.2954	694.1	508	879	.7251	1300
1350	2.6238-4	1.3119-2	-262.2	9.9244	9.2657	8.6071	7.9484	7.4880	1.2620	1.2931	706.7	521	907	.7250	1350
1400	2.5301-4	1.2651-2	-198.9	9.9704	9.3117	8.6531	7.9944	7.5340	1.2693	1.2909	719.0	533	934	.7249	1400
1450	2.4429-4	1.2214-2	-135.3	10.0151	9.3564	8.6977	8.0391	7.5787	1.2761	1.2889	731.2	546	961	.7248	1450
1500	2.3614-4	1.1807-2	-71.3	10.0584	9.3998	8.7411	8.0825	7.6221	1.2827	1.2870	743.1	558	987	.7247	1500
1550	2.2853-4	1.1426-2	-7.0	10.1006	9.4419	8.7833	8.1246	7.6642	1.2889	1.2852	754.9	570	1014	.7243	1550
1600	2.2139-4	1.1069-2	57.6	10.1416	9.4830	8.8243	8.1656	7.7052	1.2948	1.2836	766.5	582	1041	.7239	1600
1650	2.1468-4	1.0734-2	122.5	10.1815	9.5229	8.8642	8.2056	7.7452	1.3004	1.2820	777.9	594	1067	.7235	1650
1700	2.0836-4	1.0418-2	187.6	10.2204	9.5618	8.9031	8.2445	7.7841	1.3057	1.2806	789.1	605	1093	.7230	1700
1750	2.0241-4	1.0120-2	253.0	10.2584	9.5997	8.9410	8.2824	7.8220	1.3107	1.2792	800.2	617	1119	.7226	1750
1800	1.9679-4	9.8394-3	318.7	10.2954	9.6367	8.9780	8.3194	7.8590	1.3154	1.2779	811.2	628	1144	.7221	1800
1850	1.9147-4	9.5734-3	384.6	10.3315	9.6728	9.0141	8.3555	7.8951	1.3199	1.2767	822.0	639	1169	.7217	1850
1900	1.8643-4	9.3215-3	450.7	10.3667	9.7081	9.0494	8.3907	7.9303	1.3242	1.2755	832.6	650	1194	.7212	1900
1950	1.8165-4	9.0825-3	517.0	10.4012	9.7425	9.0838	8.4252	7.9648	1.3283	1.2745	843.1	661	1219	.7208	1950
2000	1.7711-4	8.8554-3	583.5	10.4348	9.7762	9.1175	8.4589	7.9985	1.3321	1.2735	853.6	672	1243	.7204	2000
2050	1.7279-4	8.6394-3	650.2	10.4678	9.8091	9.1505	8.4918	8.0314	1.3358	1.2725	863.8	683	1267	.7201	2050
2100	1.6867-4	8.4337-3	717.1	10.5000	9.8414	9.1827	8.5240	8.0636	1.3392	1.2716	874.0	694	1291	.7198	2100
2150	1.6475-4	8.2376-3	784.1	10.5316	9.8729	9.2142	8.5556	8.0952	1.3425	1.2708	884.1	705	1314	.7196	2150
2200	1.6101-4	8.0504-3	851.3	10.5625	9.9038	9.2451	8.5865	8.1261	1.3456	1.2700	894.0	715	1338	.7193	2200
2250	1.5743-4	7.8715-3	918.7	10.5927	9.9341	9.2754	8.6167	8.1564	1.3485	1.2692	903.8	726	1361	.7191	2250
2300	1.5401-4	7.7004-3	986.2	10.6224	9.9637	9.3051	8.6464	8.1860	1.3513	1.2685	913.6	736	1383	.7188	2300
2350	1.5073-4	7.5365-3	1053.8	10.6515	9.9928	9.3342	8.6755	8.2151	1.3540	1.2679	923.2	746	1406	.7185	2350
2400	1.4759-4	7.3795-3	1121.6	10.6800	10.0214	9.3627	8.7040	8.2437	1.3565	1.2672	932.7	756	1428	.7183	2400
2450	1.4458-4	7.2289-3	1189.4	10.7080	10.0494	9.3907	8.7320	8.2717	1.3589	1.2666	942.2	766	1451	.7180	2450
2500	1.4169-4	7.0843-3	1257.4	10.7355	10.0768	9.4182	8.7595	8.2991	1.3612	1.2661	951.5	776	1473	.7178	2500
2550	1.3891-4	6.9454-3	1325.6	10.7625	10.1038	9.4452	8.7865	8.3261	1.3634	1.2655	960.8	786	1495	.7173	2550
2600	1.3624-4	6.8119-3	1393.8	10.7890	10.1303	9.4716	8.8130	8.3526	1.3655	1.2650	970.0	796	1517	.7169	2600
2650	1.3367-4	6.6833-3	1462.1	10.8150	10.1563	9.4977	8.8390	8.3786	1.3675	1.2645	979.1	806	1538	.7165	2650
2700	1.3119-4	6.5596-3	1530.5	10.8406	10.1819	9.5233	8.8646	8.4042	1.3694	1.2640	988.1	816	1560	.7160	2700
2750	1.2881-4	6.4403-3	1599.0	10.8657	10.2071	9.5484	8.8897	8.4294	1.3712	1.2636	997.0	825	1582	.7156	2750
2800	1.2651-4	6.3253-3	1667.6	10.8904	10.2318	9.5731	8.9145	8.4541	1.3730	1.2632	1005.9	835	1603	.7152	2800
2850	1.2429-4	6.2143-3	1736.3	10.9148	10.2561	9.5974	8.9388	8.4784	1.3747	1.2628	1014.6	845	1624	.7147	2850
2900	1.2214-4	6.1072-3	1805.1	10.9387	10.2800	9.6214	8.9627	8.5023	1.3764	1.2624	1023.3	854	1646	.7143	2900
2950	1.2007-4	6.0037-3	1874.0	10.9622	10.3036	9.6449	8.9862	8.5259	1.3780	1.2620	1032.0	863	1667	.7139	2950
3000	1.1807-4	5.9036-3	1942.9	10.9854	10.3267	9.6681	9.0094	8.5490	1.3795	1.2616	1040.5	873	1688	.7135	3000

TABLE 3.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.034826; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9357-6	-812.5	9.4297	29.066	398	1.0000	-1.0000	1.1769	1.3211	583.2	643	.728	1.1766	1.3212	583.2	643	.728
950	3.7286-6	-753.3	9.4937	29.066	413	1.0000	-1.0000	1.1891	1.3168	598.2	675	.727	1.1886	1.3169	598.2	675	.727
1000	3.5422-6	-693.6	9.5550	29.066	427	1.0000	-1.0000	1.2008	1.3127	612.8	706	.726	1.1999	1.3130	612.9	706	.726
1050	3.3735-6	-633.3	9.6138	29.066	441	1.0000	-1.0000	1.2114	1.3091	627.1	737	.726	1.2101	1.3096	627.2	736	.726
1100	3.2202-6	-572.4	9.6704	29.066	455	1.0000	-1.0000	1.2218	1.3057	641.0	766	.726	1.2199	1.3063	641.1	765	.726
1150	3.0801-6	-511.1	9.7250	29.066	469	1.0000	-1.0000	1.2320	1.3024	654.6	796	.725	1.2291	1.3033	654.8	794	.725
1200	2.9518-6	-449.2	9.7776	29.066	482	1.0000	-1.0000	1.2420	1.2993	667.8	826	.725	1.2380	1.3005	668.1	823	.725
1250	2.8337-6	-386.9	9.8285	29.066	495	1.0001	-1.0000	1.2519	1.2962	680.8	855	.725	1.2464	1.2979	681.2	851	.725
1300	2.7247-6	-324.1	9.8778	29.066	508	1.0001	-1.0000	1.2619	1.2932	693.5	885	.725	1.2544	1.2954	694.1	879	.725
1350	2.6238-6	-260.7	9.9256	29.066	521	1.0002	-1.0000	1.2722	1.2902	705.9	914	.725	1.2620	1.2931	706.7	907	.725
1400	2.5301-6	-196.8	9.9721	29.065	533	1.0003	-1.0000	1.2830	1.2871	718.0	945	.724	1.2693	1.2909	719.0	934	.725
1450	2.4428-6	-132.4	10.0173	29.065	546	1.0005	-1.0000	1.2947	1.2840	729.8	976	.724	1.2761	1.2889	731.2	961	.725
1500	2.3613-6	-67.3	10.0614	29.064	558	1.0008	-1.0000	1.3078	1.2806	741.3	1009	.723	1.2827	1.2870	743.2	987	.725
1550	2.2851-6	-1.6	10.1045	29.063	570	1.0014	-1.0000	1.3229	1.2768	752.4	1046	.721	1.2889	1.2853	754.9	1014	.724
1600	2.2135-6	65.0	10.1468	29.062	582	1.0022	-1.0000	1.3413	1.2726	763.2	1086	.719	1.2948	1.2836	766.5	1041	.724
1650	2.1463-6	132.6	10.1884	29.059	594	1.0035	-1.0001	1.3642	1.2676	773.6	1132	.715	1.3003	1.2821	778.0	1067	.723
1700	2.0829-6	201.6	10.2296	29.055	605	1.0054	-1.0001	1.3938	1.2617	783.4	1188	.710	1.3056	1.2807	789.3	1093	.723
1750	2.0230-6	272.2	10.2705	29.050	617	1.0084	-1.0002	1.4329	1.2546	792.7	1257	.703	1.3106	1.2794	800.5	1119	.722
1800	1.9662-6	345.1	10.3116	29.041	628	1.0128	-1.0003	1.4849	1.2460	801.3	1345	.693	1.3154	1.2782	811.6	1144	.722
1850	1.9122-6	421.0	10.3531	29.029	639	1.0192	-1.0005	1.5545	1.2359	809.2	1462	.679	1.3199	1.2772	822.6	1170	.721
1900	1.8607-6	500.9	10.3958	29.010	650	1.0283	-1.0008	1.6474	1.2242	816.5	1619	.662	1.3241	1.2763	833.7	1195	.721
1950	1.8114-6	586.2	10.4401	28.985	661	1.0411	-1.0012	1.7702	1.2113	823.1	1830	.640	1.3280	1.2755	844.7	1219	.720
2000	1.7639-6	678.5	10.4868	28.948	672	1.0585	-1.0018	1.9301	1.1975	829.4	2112	.614	1.3317	1.2750	855.8	1244	.719
2050	1.7179-6	779.9	10.5369	28.899	682	1.0817	-1.0026	2.1344	1.1836	835.5	2486	.586	1.3352	1.2747	867.1	1269	.718
2100	1.6732-6	892.8	10.5913	28.832	693	1.1119	-1.0036	2.3896	1.1703	841.9	2975	.556	1.3384	1.2746	878.6	1293	.717
2150	1.6293-6	1019.8	10.6511	28.744	703	1.1498	-1.0050	2.6999	1.1582	848.7	3597	.527	1.3414	1.2749	890.4	1318	.715
2200	1.5859-6	1163.8	10.7172	28.630	713	1.1962	-1.0068	3.0664	1.1477	856.3	4369	.500	1.3441	1.2756	902.8	1342	.713
2250	1.5430-6	1327.4	10.7907	28.487	722	1.2511	-1.0089	3.4869	1.1390	864.9	5298	.475	1.3467	1.2767	915.6	1368	.711
2300	1.5001-6	1513.2	10.8724	28.311	732	1.3141	-1.0115	3.9555	1.1321	874.5	6376	.454	1.3491	1.2783	929.2	1395	.708
2350	1.4572-6	1723.6	10.9629	28.100	741	1.3845	-1.0145	4.4638	1.1268	885.2	7578	.436	1.3514	1.2803	943.5	1423	.703
2400	1.4142-6	1960.1	11.0624	27.851	750	1.4609	-1.0179	5.0012	1.1230	897.0	8860	.423	1.3536	1.2829	958.7	1453	.698
2450	1.3711-6	2224.0	11.1712	27.565	758	1.5413	-1.0216	5.5537	1.1203	909.9	10151	.415	1.3559	1.2861	974.9	1486	.692
2500	1.3280-6	2515.4	11.2890	27.243	767	1.6228	-1.0256	6.1018	1.1188	923.9	11362	.412	1.3582	1.2898	992.0	1522	.685
2550	1.2850-6	2833.6	11.4150	26.888	776	1.7013	-1.0296	6.6186	1.1181	939.0	12391	.414	1.3606	1.2941	1010.2	1561	.676
2600	1.2424-6	3176.2	11.5480	26.506	784	1.7711	-1.0334	7.0686	1.1183	955.0	13137	.422	1.3632	1.2989	1029.2	1603	.667
2650	1.2005-6	3538.7	11.6861	26.105	793	1.8260	-1.0367	7.4105	1.1194	972.0	13526	.434	1.3660	1.3041	1049.1	1647	.658
2700	1.1598-6	3914.8	11.8267	25.696	802	1.8600	-1.0391	7.6054	1.1212	989.7	13524	.451	1.3688	1.3096	1069.6	1692	.648
2750	1.1208-6	4296.3	11.9667	25.290	811	1.8691	-1.0404	7.6265	1.1238	1008.0	13147	.470	1.3717	1.3152	1090.4	1738	.640
2800	1.0838-6	4674.4	12.1030	24.900	820	1.8523	-1.0405	7.4673	1.1273	1026.6	12458	.491	1.3745	1.3209	1111.3	1784	.632
2850	1.0491-6	5040.3	12.2325	24.535	829	1.8118	-1.0394	7.1431	1.1316	1045.4	11543	.513	1.3773	1.3263	1131.8	1828	.625
2900	1.0171-6	5386.5	12.3529	24.203	839	1.7521	-1.0373	6.6856	1.1370	1064.3	10497	.534	1.3799	1.3315	1151.7	1869	.619
2950	9.8769-7	5707.3	12.4626	23.909	849	1.6790	-1.0343	6.1358	1.1434	1083.1	9401	.554	1.3824	1.3361	1170.8	1909	.615
3000	9.6085-7	5999.2	12.5608	23.653	858	1.5985	-1.0309	5.5374	1.1512	1101.8	8323	.571	1.3846	1.3403	1188.8	1946	.611

TABLE 3.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.034826; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9357-5	-812.5	8.7711	29.066	398	1.0000	-1.0000	1.1769	1.3211	583.2	643	.728	1.1766	1.3212	583.2	643	.728
950	3.7286-5	-753.3	8.8350	29.066	413	1.0000	-1.0000	1.1891	1.3168	598.2	675	.727	1.1886	1.3169	598.2	675	.727
1000	3.5422-5	-693.6	8.8963	29.066	427	1.0000	-1.0000	1.2007	1.3127	612.8	706	.726	1.1999	1.3130	612.9	706	.726
1050	3.3735-5	-633.3	8.9552	29.066	441	1.0000	-1.0000	1.2114	1.3091	627.1	737	.726	1.2101	1.3096	627.2	736	.726
1100	3.2201-5	-572.4	9.0117	29.066	455	1.0000	-1.0000	1.2217	1.3057	641.0	766	.726	1.2199	1.3063	641.1	765	.726
1150	3.0801-5	-511.1	9.0663	29.066	469	1.0000	-1.0000	1.2318	1.3025	654.6	796	.725	1.2291	1.3033	654.8	794	.725
1200	2.9518-5	-449.3	9.1189	29.066	482	1.0000	-1.0000	1.2417	1.2993	667.8	825	.725	1.2380	1.3005	668.1	823	.725
1250	2.8337-5	-386.9	9.1698	29.066	495	1.0000	-1.0000	1.2515	1.2963	680.8	855	.725	1.2464	1.2979	681.2	851	.725
1300	2.7247-5	-324.1	9.2191	29.066	508	1.0000	-1.0000	1.2612	1.2934	693.5	884	.725	1.2544	1.2954	694.1	879	.725
1350	2.6238-5	-260.8	9.2669	29.066	521	1.0001	-1.0000	1.2709	1.2905	705.9	913	.725	1.2620	1.2931	706.7	907	.725
1400	2.5301-5	-197.0	9.3133	29.066	533	1.0001	-1.0000	1.2809	1.2877	718.1	943	.725	1.2693	1.2909	719.0	934	.725
1450	2.4428-5	-132.7	9.3584	29.065	546	1.0002	-1.0000	1.2911	1.2848	730.0	973	.724	1.2761	1.2889	731.2	961	.725
1500	2.3614-5	-67.9	9.4023	29.065	558	1.0004	-1.0000	1.3018	1.2819	741.7	1003	.724	1.2827	1.2870	743.1	987	.725
1550	2.2852-5	-2.5	9.4452	29.065	570	1.0006	-1.0000	1.3134	1.2789	753.0	1035	.723	1.2889	1.2853	754.9	1014	.724
1600	2.2137-5	63.5	9.4871	29.064	582	1.0010	-1.0000	1.3261	1.2757	764.1	1069	.722	1.2948	1.2836	766.5	1041	.724
1650	2.1465-5	130.1	9.5281	29.063	594	1.0015	-1.0000	1.3405	1.2723	775.0	1105	.720	1.3004	1.2821	777.9	1067	.723
1700	2.0833-5	197.5	9.5684	29.061	605	1.0022	-1.0001	1.3572	1.2685	785.5	1143	.718	1.3056	1.2806	789.2	1093	.723
1750	2.0236-5	265.9	9.6080	29.059	617	1.0033	-1.0001	1.3772	1.2643	795.7	1187	.716	1.3107	1.2793	800.3	1119	.723
1800	1.9672-5	335.3	9.6471	29.056	628	1.0049	-1.0001	1.4016	1.2595	805.5	1236	.712	1.3154	1.2780	811.3	1144	.722
1850	1.9137-5	406.1	9.6859	29.051	639	1.0072	-1.0002	1.4319	1.2540	814.8	1294	.707	1.3199	1.2769	822.2	1169	.722
1900	1.8629-5	478.7	9.7246	29.044	650	1.0104	-1.0003	1.4699	1.2477	823.8	1364	.701	1.3242	1.2758	833.0	1194	.721
1950	1.8145-5	553.3	9.7634	29.035	661	1.0148	-1.0004	1.5179	1.2405	832.3	1450	.692	1.3282	1.2749	843.7	1219	.721
2000	1.7684-5	630.7	9.8025	29.022	672	1.0207	-1.0006	1.5786	1.2322	840.3	1557	.682	1.3319	1.2740	854.4	1244	.720
2050	1.7242-5	711.4	9.8424	29.004	683	1.0288	-1.0009	1.6550	1.2231	847.8	1691	.668	1.3355	1.2733	865.0	1268	.720
2100	1.6818-5	796.5	9.8834	28.981	694	1.0393	-1.0012	1.7505	1.2133	855.0	1861	.653	1.3388	1.2727	875.7	1291	.719
2150	1.6409-5	886.8	9.9259	28.949	704	1.0530	-1.0017	1.8684	1.2030	861.9	2075	.634	1.3420	1.2723	886.4	1315	.718
2200	1.6014-5	983.7	9.9705	28.909	714	1.0703	-1.0024	2.0119	1.1925	868.6	2342	.614	1.3449	1.2720	897.1	1339	.718
2250	1.5629-5	1088.5	10.0176	28.856	724	1.0918	-1.0032	2.1833	1.1822	875.5	2674	.592	1.3476	1.2720	908.1	1362	.717
2300	1.5255-5	1202.6	10.0677	28.790	734	1.1179	-1.0042	2.3841	1.1726	882.5	3078	.569	1.3501	1.2721	919.2	1385	.716
2350	1.4887-5	1327.4	10.1214	28.708	744	1.1488	-1.0054	2.6140	1.1639	890.0	3562	.546	1.3524	1.2725	930.6	1409	.714
2400	1.4526-5	1464.4	10.1791	28.608	754	1.1845	-1.0069	2.8714	1.1562	898.0	4131	.524	1.3545	1.2732	942.4	1433	.713
2450	1.4170-5	1614.9	10.2411	28.487	763	1.2248	-1.0086	3.1531	1.1497	906.7	4785	.503	1.3564	1.2742	954.5	1457	.711
2500	1.3818-5	1780.1	10.3078	28.346	773	1.2692	-1.0106	3.4548	1.1443	916.1	5520	.484	1.3583	1.2754	967.1	1482	.708
2550	1.3468-5	1960.7	10.3794	28.182	782	1.3174	-1.0129	3.7717	1.1401	926.1	6324	.466	1.3600	1.2770	980.2	1508	.705
2600	1.3122-5	2157.4	10.4557	27.995	791	1.3685	-1.0153	4.0989	1.1368	936.9	7183	.451	1.3616	1.2790	993.8	1535	.701
2650	1.2778-5	2370.7	10.5370	27.785	800	1.4220	-1.0180	4.4315	1.1344	948.5	8069	.439	1.3633	1.2812	1008.0	1564	.697
2700	1.2436-5	2600.5	10.6229	27.553	808	1.4768	-1.0209	4.7636	1.1328	960.7	8953	.430	1.3649	1.2838	1022.8	1595	.692
2750	1.2098-5	2846.9	10.7133	27.299	817	1.5318	-1.0239	5.0886	1.1319	973.7	9794	.425	1.3666	1.2868	1038.2	1628	.686
2800	1.1763-5	3109.1	10.8078	27.026	826	1.5854	-1.0270	5.3973	1.1316	987.3	10551	.423	1.3683	1.2901	1054.2	1662	.680
2850	1.1432-5	3386.2	10.9059	26.735	835	1.6355	-1.0300	5.6783	1.1318	1001.6	11181	.424	1.3701	1.2936	1070.8	1699	.673
2900	1.1107-5	3676.3	11.0068	26.431	844	1.6799	-1.0329	5.9181	1.1327	1016.5	11644	.429	1.3720	1.2975	1088.0	1738	.666
2950	1.0789-5	3977.0	11.1096	26.117	853	1.7158	-1.0354	6.1020	1.1340	1032.0	11914	.437	1.3740	1.3016	1105.6	1779	.659
3000	1.0480-5	4285.3	11.2132	25.799	862	1.7409	-1.0375	6.2163	1.1359	1048.0	11977	.447	1.3761	1.3058	1123.6	1821	.651

TABLE 3.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.034826; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9357-4	-812.5	8.1124	29.066	398	1.0000	-1.0000	1.1769	1.3211	583.2	643	.728	1.1766	1.3212	583.2	643	.728
950	3.7286-4	-753.3	8.1764	29.066	413	1.0000	-1.0000	1.1891	1.3168	598.2	675	.727	1.1886	1.3169	598.2	675	.727
1000	3.5422-4	-693.6	8.2376	29.066	427	1.0000	-1.0000	1.2007	1.3127	612.8	706	.726	1.1999	1.3130	612.9	706	.726
1050	3.3735-4	-633.3	8.2965	29.066	441	1.0000	-1.0000	1.2114	1.3091	627.1	737	.726	1.2101	1.3096	627.2	736	.726
1100	3.2202-4	-572.4	8.3531	29.066	455	1.0000	-1.0000	1.2217	1.3057	641.0	766	.726	1.2199	1.3063	641.1	765	.726
1150	3.0801-4	-511.1	8.4076	29.066	469	1.0000	-1.0000	1.2318	1.3025	654.6	796	.725	1.2291	1.3033	654.8	794	.725
1200	2.9518-4	-449.3	8.4602	29.066	482	1.0000	-1.0000	1.2416	1.2994	667.9	825	.725	1.2380	1.3005	668.1	823	.725
1250	2.8337-4	-386.9	8.5111	29.066	495	1.0000	-1.0000	1.2513	1.2964	680.8	854	.725	1.2464	1.2979	681.2	851	.725
1300	2.7247-4	-324.1	8.5604	29.066	508	1.0000	-1.0000	1.2608	1.2935	693.5	884	.725	1.2544	1.2954	694.1	879	.725
1350	2.6238-4	-260.9	8.6082	29.066	521	1.0000	-1.0000	1.2703	1.2907	706.0	913	.725	1.2620	1.2931	706.7	907	.725
1400	2.5301-4	-197.1	8.6545	29.066	533	1.0001	-1.0000	1.2798	1.2879	718.2	942	.725	1.2693	1.2909	719.0	934	.725
1450	2.4429-4	-132.9	8.6996	29.066	546	1.0001	-1.0000	1.2893	1.2852	730.1	971	.725	1.2761	1.2889	731.2	961	.725
1500	2.3614-4	-68.2	8.7435	29.066	558	1.0002	-1.0000	1.2991	1.2825	741.8	1001	.724	1.2827	1.2870	743.1	987	.725
1550	2.2852-4	-3.0	8.7862	29.065	570	1.0003	-1.0000	1.3091	1.2798	753.3	1031	.724	1.2889	1.2853	754.9	1014	.724
1600	2.2138-4	62.7	8.8280	29.065	582	1.0005	-1.0000	1.3196	1.2771	764.5	1062	.723	1.2948	1.2836	766.5	1041	.724
1650	2.1467-4	129.0	8.8687	29.064	594	1.0007	-1.0000	1.3307	1.2743	775.5	1094	.722	1.3004	1.2820	777.9	1067	.723
1700	2.0835-4	195.8	8.9086	29.064	605	1.0010	-1.0000	1.3427	1.2714	786.3	1127	.721	1.3056	1.2806	789.2	1093	.723
1750	2.0239-4	263.3	8.9477	29.063	617	1.0015	-1.0000	1.3559	1.2684	796.9	1161	.720	1.3107	1.2792	800.3	1119	.723
1800	1.9676-4	331.4	8.9861	29.061	628	1.0021	-1.0001	1.3706	1.2651	807.2	1198	.718	1.3154	1.2779	811.2	1144	.722
1850	1.9142-4	400.4	9.0239	29.059	639	1.0029	-1.0001	1.3873	1.2616	817.2	1238	.716	1.3199	1.2768	822.1	1169	.722
1900	1.8637-4	470.2	9.0612	29.057	650	1.0041	-1.0001	1.4066	1.2579	827.0	1282	.714	1.3242	1.2757	832.8	1194	.721
1950	1.8157-4	541.1	9.0980	29.053	662	1.0057	-1.0002	1.4294	1.2537	836.4	1330	.711	1.3282	1.2746	843.4	1219	.721
2000	1.7700-4	613.2	9.1345	29.048	672	1.0079	-1.0002	1.4564	1.2491	845.6	1385	.707	1.3320	1.2737	853.9	1244	.720
2050	1.7264-4	686.8	9.1709	29.041	683	1.0107	-1.0003	1.4886	1.2440	854.5	1449	.702	1.3356	1.2728	864.3	1267	.720
2100	1.6848-4	762.2	9.2072	29.033	694	1.0145	-1.0004	1.5274	1.2384	863.0	1523	.696	1.3390	1.2721	874.7	1291	.720
2150	1.6450-4	839.7	9.2436	29.021	705	1.0193	-1.0006	1.5740	1.2323	871.2	1610	.689	1.3422	1.2714	884.9	1315	.719
2200	1.6068-4	919.8	9.2805	29.006	715	1.0254	-1.0008	1.6299	1.2256	879.1	1714	.680	1.3452	1.2708	895.2	1338	.719
2250	1.5700-4	1002.9	9.3178	28.987	725	1.0331	-1.0011	1.6965	1.2185	886.8	1839	.669	1.3481	1.2703	905.4	1361	.718
2300	1.5346-4	1089.6	9.3559	28.963	736	1.0427	-1.0015	1.7754	1.2111	894.2	1988	.657	1.3507	1.2699	915.7	1384	.718
2350	1.5004-4	1180.6	9.3951	28.933	746	1.0544	-1.0019	1.8679	1.2035	901.5	2165	.643	1.3532	1.2696	926.0	1407	.717
2400	1.4673-4	1276.6	9.4355	28.896	756	1.0685	-1.0025	1.9749	1.1959	908.8	2376	.628	1.3555	1.2695	936.3	1429	.717
2450	1.4351-4	1378.4	9.4775	28.850	766	1.0852	-1.0032	2.0969	1.1886	916.1	2623	.612	1.3576	1.2695	946.8	1452	.716
2500	1.4037-4	1486.6	9.5212	28.795	775	1.1045	-1.0040	2.2338	1.1816	923.5	2910	.595	1.3596	1.2696	957.3	1474	.715
2550	1.3730-4	1602.0	9.5669	28.730	785	1.1265	-1.0050	2.3849	1.1751	931.2	3239	.578	1.3614	1.2700	968.1	1497	.714
2600	1.3430-4	1725.3	9.6148	28.652	794	1.1511	-1.0061	2.5487	1.1693	939.2	3613	.560	1.3631	1.2705	979.0	1520	.712
2650	1.3135-4	1857.0	9.6649	28.563	804	1.1781	-1.0073	2.7232	1.1642	947.6	4030	.543	1.3647	1.2711	990.2	1543	.711
2700	1.2846-4	1997.7	9.7175	28.460	813	1.2073	-1.0087	2.9059	1.1598	956.5	4490	.526	1.3661	1.2720	1001.7	1566	.709
2750	1.2561-4	2147.7	9.7726	28.344	822	1.2383	-1.0103	3.0944	1.1562	965.7	4988	.510	1.3675	1.2731	1013.4	1590	.707
2800	1.2280-4	2307.2	9.8300	28.215	831	1.2709	-1.0120	3.2861	1.1532	975.5	5520	.495	1.3688	1.2744	1025.4	1615	.705
2850	1.2003-4	2476.4	9.8899	28.071	840	1.3046	-1.0138	3.4788	1.1509	985.7	6079	.481	1.3700	1.2758	1037.8	1640	.702
2900	1.1731-4	2655.1	9.9521	27.915	849	1.3392	-1.0157	3.6707	1.1492	996.3	6656	.468	1.3712	1.2775	1050.5	1666	.699
2950	1.1462-4	2843.4	10.0164	27.745	858	1.3744	-1.0178	3.8600	1.1480	1007.4	7241	.457	1.3723	1.2794	1063.5	1693	.695
3000	1.1197-4	3041.0	10.0829	27.563	867	1.4099	-1.0199	4.0449	1.1472	1018.9	7820	.448	1.3735	1.2814	1076.9	1722	.692

TABLE 3.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.034826; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.9357-3	-812.5	7.4538	29.066	398	1.0000	-1.0000	1.1769	1.3211	583.2	643	.728	1.1766	1.3212	583.2	643	.728
950	3.7286-3	-753.3	7.5177	29.066	413	1.0000	-1.0000	1.1891	1.3167	598.2	675	.727	1.1886	1.3169	598.2	675	.727
1000	3.5422-3	-693.6	7.5790	29.066	427	1.0000	-1.0000	1.2007	1.3127	612.8	706	.726	1.1999	1.3130	612.9	706	.726
1050	3.3735-3	-633.3	7.6378	29.066	441	1.0000	-1.0000	1.2114	1.3091	627.1	737	.726	1.2101	1.3096	627.2	736	.726
1100	3.2202-3	-572.4	7.6944	29.066	455	1.0000	-1.0000	1.2217	1.3057	641.0	766	.726	1.2199	1.3063	641.1	765	.726
1150	3.0802-3	-511.1	7.7490	29.066	469	1.0000	-1.0000	1.2317	1.3025	654.6	796	.725	1.2291	1.3033	654.8	794	.725
1200	2.9518-3	-449.3	7.8016	29.066	482	1.0000	-1.0000	1.2415	1.2994	667.9	825	.725	1.2380	1.3005	668.1	823	.725
1250	2.8337-3	-386.9	7.8525	29.066	495	1.0000	-1.0000	1.2512	1.2964	680.8	854	.725	1.2464	1.2979	681.2	851	.725
1300	2.7247-3	-324.2	7.9017	29.066	508	1.0000	-1.0000	1.2606	1.2935	693.6	883	.725	1.2544	1.2954	694.1	879	.725
1350	2.6238-3	-260.9	7.9495	29.066	521	1.0000	-1.0000	1.2700	1.2907	706.0	912	.725	1.2620	1.2931	706.7	907	.725
1400	2.5301-3	-197.2	7.9958	29.066	533	1.0000	-1.0000	1.2792	1.2880	718.2	941	.725	1.2693	1.2909	719.0	934	.725
1450	2.4429-3	-133.0	8.0409	29.066	546	1.0001	-1.0000	1.2885	1.2854	730.2	970	.725	1.2761	1.2889	731.2	961	.725
1500	2.3614-3	-68.3	8.0847	29.066	558	1.0001	-1.0000	1.2978	1.2828	741.9	999	.725	1.2827	1.2870	743.1	987	.725
1550	2.2853-3	-3.2	8.1274	29.066	570	1.0001	-1.0000	1.3071	1.2802	753.4	1029	.724	1.2889	1.2852	754.9	1014	.724
1600	2.2138-3	62.4	8.1691	29.066	582	1.0002	-1.0000	1.3167	1.2777	764.7	1059	.724	1.2948	1.2836	766.5	1041	.724
1650	2.1467-3	128.5	8.2097	29.065	594	1.0003	-1.0000	1.3264	1.2752	775.8	1089	.723	1.3004	1.2820	777.9	1067	.723
1700	2.0836-3	195.1	8.2495	29.065	605	1.0005	-1.0000	1.3364	1.2726	786.7	1120	.722	1.3056	1.2806	789.1	1093	.723
1750	2.0240-3	262.1	8.2884	29.064	617	1.0007	-1.0000	1.3469	1.2701	797.4	1151	.722	1.3107	1.2792	800.2	1119	.723
1800	1.9677-3	329.8	8.3265	29.064	628	1.0009	-1.0000	1.3579	1.2675	807.9	1184	.721	1.3154	1.2779	811.2	1144	.722
1850	1.9145-3	397.9	8.3638	29.063	639	1.0013	-1.0000	1.3697	1.2648	818.2	1217	.720	1.3199	1.2767	822.0	1169	.722
1900	1.8640-3	466.7	8.4005	29.062	651	1.0018	-1.0001	1.3823	1.2621	828.3	1252	.718	1.3242	1.2756	832.7	1194	.721
1950	1.8161-3	536.2	8.4366	29.060	662	1.0024	-1.0001	1.3961	1.2592	838.2	1288	.717	1.3282	1.2745	843.3	1219	.721
2000	1.7706-3	606.4	8.4721	29.058	672	1.0033	-1.0001	1.4113	1.2562	847.9	1327	.715	1.3321	1.2736	853.7	1243	.720
2050	1.7273-3	677.4	8.5072	29.055	683	1.0043	-1.0001	1.4283	1.2531	857.4	1368	.713	1.3357	1.2727	864.0	1267	.720
2100	1.6859-3	749.2	8.5418	29.052	694	1.0057	-1.0002	1.4475	1.2497	866.6	1413	.711	1.3391	1.2718	874.3	1291	.720
2150	1.6465-3	822.1	8.5761	29.047	705	1.0075	-1.0002	1.4693	1.2461	875.7	1461	.708	1.3423	1.2710	884.4	1315	.720
2200	1.6087-3	896.2	8.6102	29.042	715	1.0097	-1.0003	1.4941	1.2423	884.6	1515	.705	1.3454	1.2703	894.5	1338	.719
2250	1.5726-3	971.6	8.6441	29.035	726	1.0125	-1.0004	1.5227	1.2382	893.2	1576	.701	1.3483	1.2697	904.5	1361	.719
2300	1.5379-3	1048.6	8.6779	29.025	736	1.0159	-1.0005	1.5555	1.2338	901.6	1644	.696	1.3510	1.2691	914.4	1384	.719
2350	1.5046-3	1127.2	8.7118	29.014	746	1.0202	-1.0007	1.5932	1.2292	909.8	1721	.691	1.3535	1.2686	924.3	1406	.718
2400	1.4726-3	1208.0	8.7457	29.000	756	1.0253	-1.0009	1.6364	1.2244	917.9	1808	.684	1.3560	1.2681	934.1	1429	.718
2450	1.4417-3	1291.0	8.7800	28.984	766	1.0315	-1.0012	1.6858	1.2193	925.7	1908	.677	1.3582	1.2678	943.9	1451	.717
2500	1.4119-3	1376.6	8.8146	28.963	776	1.0388	-1.0015	1.7418	1.2142	933.5	2022	.669	1.3604	1.2675	953.7	1473	.717
2550	1.3830-3	1465.3	8.8497	28.938	786	1.0474	-1.0018	1.8050	1.2089	941.1	2152	.659	1.3624	1.2673	963.6	1495	.716
2600	1.3550-3	1557.3	8.8854	28.909	796	1.0574	-1.0023	1.8756	1.2036	948.7	2300	.649	1.3642	1.2671	973.4	1518	.716
2650	1.3279-3	1653.0	8.9219	28.874	806	1.0688	-1.0028	1.9536	1.1985	956.3	2466	.638	1.3660	1.2671	983.3	1540	.715
2700	1.3014-3	1752.8	8.9592	28.834	815	1.0817	-1.0034	2.0389	1.1935	963.9	2653	.627	1.3676	1.2672	993.3	1562	.714
2750	1.2757-3	1857.0	8.9974	28.787	825	1.0960	-1.0040	2.1310	1.1888	971.7	2860	.614	1.3692	1.2673	1003.3	1584	.713
2800	1.2506-3	1966.0	9.0367	28.733	834	1.1118	-1.0048	2.2291	1.1844	979.6	3089	.602	1.3706	1.2676	1013.4	1605	.712
2850	1.2260-3	2080.0	9.0770	28.672	843	1.1289	-1.0057	2.3322	1.1804	987.7	3339	.589	1.3719	1.2680	1023.7	1627	.711
2900	1.2020-3	2199.2	9.1185	28.603	853	1.1472	-1.0066	2.4392	1.1768	996.0	3610	.576	1.3731	1.2685	1034.1	1649	.710
2950	1.1785-3	2323.9	9.1611	28.527	862	1.1664	-1.0076	2.5486	1.1737	1004.6	3900	.563	1.3743	1.2692	1044.6	1672	.708
3000	1.1554-3	2454.1	9.2049	28.443	871	1.1865	-1.0087	2.6594	1.1710	1013.4	4209	.550	1.3753	1.2699	1055.3	1694	.707

TABLE 3.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.034826; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9679-2	-812.5	6.9934	29.066	398	1.0000	-1.0000	1.1769	1.3211	583.2	643	.728	1.1766	1.3212	583.2	643	.728
950	1.8643-2	-753.3	7.0573	29.066	413	1.0000	-1.0000	1.1892	1.3167	598.2	675	.727	1.1886	1.3169	598.2	675	.727
1000	1.7711-2	-693.6	7.1186	29.066	427	1.0000	-1.0000	1.2008	1.3127	612.8	706	.726	1.1999	1.3130	612.9	706	.726
1050	1.6868-2	-633.3	7.1775	29.066	441	1.0000	-1.0000	1.2114	1.3091	627.1	737	.726	1.2101	1.3096	627.2	736	.726
1100	1.6101-2	-572.4	7.2340	29.066	455	1.0000	-1.0000	1.2217	1.3057	641.0	766	.726	1.2199	1.3063	641.1	765	.726
1150	1.5401-2	-511.1	7.2886	29.066	469	1.0000	-1.0000	1.2318	1.3025	654.6	796	.725	1.2291	1.3033	654.8	794	.725
1200	1.4759-2	-449.3	7.3412	29.066	482	1.0000	-1.0000	1.2415	1.2994	667.8	825	.725	1.2380	1.3005	668.1	823	.725
1250	1.4169-2	-386.9	7.3921	29.066	495	1.0000	-1.0000	1.2511	1.2964	680.8	854	.725	1.2464	1.2979	681.2	851	.725
1300	1.3624-2	-324.2	7.4413	29.066	508	1.0000	-1.0000	1.2605	1.2935	693.6	883	.725	1.2544	1.2954	694.1	879	.725
1350	1.3119-2	-260.9	7.4891	29.066	521	1.0000	-1.0000	1.2698	1.2908	706.0	912	.725	1.2620	1.2931	706.6	907	.725
1400	1.2651-2	-197.2	7.5354	29.066	533	1.0000	-1.0000	1.2790	1.2881	718.2	941	.725	1.2693	1.2909	719.0	934	.725
1450	1.2214-2	-133.0	7.5805	29.066	546	1.0000	-1.0000	1.2882	1.2854	730.2	970	.725	1.2761	1.2889	731.2	961	.725
1500	1.1807-2	-68.4	7.6243	29.066	558	1.0000	-1.0000	1.2973	1.2829	741.9	999	.725	1.2827	1.2870	743.1	987	.725
1550	1.1426-2	-3.3	7.6670	29.066	570	1.0001	-1.0000	1.3064	1.2804	753.5	1028	.724	1.2889	1.2852	754.9	1014	.724
1600	1.1069-2	62.3	7.7086	29.066	582	1.0001	-1.0000	1.3156	1.2779	764.8	1058	.724	1.2948	1.2836	766.5	1041	.724
1650	1.0734-2	128.3	7.7492	29.066	594	1.0002	-1.0000	1.3248	1.2755	775.9	1087	.723	1.3004	1.2820	777.9	1067	.723
1700	1.0418-2	194.8	7.7889	29.066	605	1.0003	-1.0000	1.3342	1.2731	786.8	1117	.723	1.3057	1.2806	789.1	1093	.723
1750	1.0120-2	261.7	7.8277	29.065	617	1.0004	-1.0000	1.3438	1.2707	797.6	1148	.722	1.3107	1.2792	800.2	1119	.723
1800	9.8391-3	329.2	7.8657	29.065	628	1.0005	-1.0000	1.3536	1.2683	808.1	1179	.721	1.3154	1.2779	811.2	1144	.722
1850	9.5730-3	397.1	7.9029	29.064	639	1.0007	-1.0000	1.3638	1.2659	818.5	1210	.721	1.3199	1.2767	822.0	1169	.722
1900	9.3208-3	465.5	7.9395	29.064	651	1.0010	-1.0000	1.3744	1.2635	828.7	1242	.720	1.3242	1.2756	832.7	1194	.721
1950	9.0815-3	534.5	7.9753	29.063	662	1.0014	-1.0000	1.3855	1.2610	838.7	1275	.719	1.3282	1.2745	843.2	1219	.721
2000	8.8542-3	604.1	8.0105	29.062	672	1.0018	-1.0001	1.3973	1.2585	848.6	1309	.718	1.3321	1.2735	853.6	1243	.720
2050	8.6378-3	674.3	8.0452	29.060	683	1.0024	-1.0001	1.4099	1.2560	858.3	1344	.717	1.3357	1.2726	863.9	1267	.720
2100	8.4315-3	745.1	8.0793	29.058	694	1.0031	-1.0001	1.4234	1.2534	867.8	1381	.715	1.3391	1.2717	874.2	1291	.720
2150	8.2348-3	816.6	8.1130	29.056	705	1.0040	-1.0001	1.4382	1.2507	877.2	1420	.714	1.3424	1.2709	884.3	1315	.720
2200	8.0468-3	888.9	8.1462	29.053	715	1.0052	-1.0002	1.4543	1.2479	886.4	1461	.712	1.3454	1.2702	894.3	1338	.719
2250	7.8669-3	962.1	8.1791	29.049	726	1.0066	-1.0002	1.4721	1.2450	895.4	1504	.710	1.3483	1.2695	904.2	1361	.719
2300	7.6946-3	1036.2	8.2117	29.044	736	1.0083	-1.0003	1.4919	1.2419	904.3	1552	.708	1.3511	1.2688	914.0	1384	.719
2350	7.5294-3	1111.3	8.2440	29.038	746	1.0104	-1.0004	1.5139	1.2387	913.0	1603	.705	1.3537	1.2683	923.8	1406	.718
2400	7.3708-3	1187.6	8.2761	29.031	757	1.0129	-1.0005	1.5384	1.2354	921.5	1659	.702	1.3561	1.2677	933.5	1429	.718
2450	7.2182-3	1265.2	8.3081	29.023	767	1.0160	-1.0006	1.5659	1.2319	929.9	1720	.698	1.3584	1.2673	943.1	1451	.718
2500	7.0713-3	1344.3	8.3400	29.012	777	1.0196	-1.0007	1.5966	1.2283	938.1	1788	.693	1.3606	1.2668	952.7	1473	.717
2550	6.9297-3	1424.9	8.3720	29.000	787	1.0239	-1.0009	1.6309	1.2246	946.2	1863	.688	1.3627	1.2665	962.2	1495	.717
2600	6.7929-3	1507.4	8.4040	28.985	796	1.0289	-1.0011	1.6690	1.2207	954.2	1947	.683	1.3646	1.2661	971.8	1517	.716
2650	6.6607-3	1591.9	8.4362	28.968	806	1.0347	-1.0014	1.7113	1.2168	962.0	2039	.677	1.3665	1.2659	981.3	1539	.716
2700	6.5327-3	1678.6	8.4686	28.947	816	1.0414	-1.0017	1.7580	1.2128	969.8	2142	.670	1.3682	1.2657	990.7	1561	.715
2750	6.4087-3	1767.8	8.5013	28.923	825	1.0489	-1.0020	1.8090	1.2089	977.6	2255	.662	1.3698	1.2656	1000.2	1583	.714
2800	6.2882-3	1859.6	8.5344	28.895	835	1.0574	-1.0024	1.8644	1.2050	985.3	2380	.654	1.3714	1.2655	1009.8	1604	.714
2850	6.1711-3	1954.3	8.5680	28.864	844	1.0669	-1.0029	1.9241	1.2012	993.0	2517	.646	1.3728	1.2655	1019.3	1626	.713
2900	6.0571-3	2052.1	8.6020	28.828	854	1.0773	-1.0034	1.9878	1.1976	1000.8	2666	.637	1.3742	1.2656	1028.9	1647	.712
2950	5.9460-3	2153.1	8.6365	28.787	863	1.0887	-1.0040	2.0551	1.1941	1008.7	2828	.627	1.3755	1.2658	1038.5	1669	.711
3000	5.8376-3	2257.6	8.6716	28.741	872	1.1009	-1.0046	2.1254	1.1909	1016.6	3002	.618	1.3767	1.2660	1048.2	1690	.711

TABLE 3C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.034826; EQUIV.RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S	W/CM K		K
					PRESSURE = 0.01 ATM											
200	1.885-5	-1679.8	7.3786	29.066	1.0509	1.814-5	29.777	131	1.000	-1.000	0.9889	1.3935	279	176	.734	200
220	1.709-5	-1655.5	7.4941	29.066	1.5674	1.648-5	29.748	142	1.000	-1.000	0.9911	1.3928	293	192	.731	220
240	1.529-5	-1593.9	7.7596	29.066	6.0211	1.496-5	29.463	150	1.000	-1.000	1.0052	1.3903	307	205	.735	240
					PRESSURE = 0.10 ATM											
200	1.885-4	-1680.1	6.7586	29.066	1.0145	1.814-4	29.778	131	1.000	-1.000	0.9888	1.3935	279	176	.734	200
220	1.713-4	-1659.4	6.8571	29.066	1.0716	1.649-4	29.775	142	1.000	-1.000	0.9899	1.3929	293	193	.730	220
240	1.567-4	-1635.0	6.9630	29.066	1.4995	1.510-4	29.747	153	1.000	-1.000	0.9924	1.3920	306	208	.727	240
260	1.422-4	-1586.4	7.1560	29.066	4.0370	1.385-4	29.552	161	1.000	-1.000	1.0029	1.3899	319	222	.730	260
280	1.265-4	-1491.8	7.5088	29.066	1.0273	1.265-4	29.066	167	1.000	-1.000	1.0273	1.3859	333	232	.740	280
					PRESSURE = 1.00 ATM											
200	1.885-3	-1680.1	6.1397	29.066	1.0108	1.815-3	29.779	131	1.000	-1.000	0.9888	1.3935	279	176	.734	200
220	1.714-3	-1659.8	6.2365	29.066	1.0223	1.650-3	29.778	142	1.000	-1.000	0.9897	1.3930	293	193	.730	220
240	1.571-3	-1639.0	6.3270	29.066	1.0710	1.512-3	29.775	153	1.000	-1.000	0.9912	1.3922	305	209	.726	240
260	1.447-3	-1615.7	6.4200	29.066	1.3213	1.395-3	29.756	163	1.000	-1.000	0.9937	1.3912	318	224	.724	260
280	1.333-3	-1570.9	6.5852	29.066	2.0897	1.291-3	29.664	172	1.000	-1.000	0.9999	1.3895	330	238	.725	280
298	1.225-3	-1519.2	6.7636	29.066	3.8813	1.202-3	29.412	179	1.000	-1.000	1.0135	1.3868	342	249	.730	298
300	1.213-3	-1511.7	6.7885	29.066	4.1746	1.193-3	29.370	180	1.000	-1.000	1.0156	1.3864	343	250	.731	300
320	1.107-3	-1450.6	6.9877	29.066	1.0325	1.107-3	29.066	186	1.000	-1.000	1.0325	1.3832	356	261	.738	320
					PRESSURE = 10.00 ATM											
200	1.884-2	-1680.1	5.5209	29.066	1.0105	1.815-2	29.778	131	1.000	-1.000	0.9888	1.3935	279	176	.734	200
220	1.713-2	-1659.8	5.6175	29.066	1.0173	1.650-2	29.779	142	1.000	-1.000	0.9897	1.3930	293	193	.730	220
240	1.570-2	-1639.4	5.7065	29.066	1.0284	1.512-2	29.778	153	1.000	-1.000	0.9911	1.3922	305	209	.726	240
260	1.449-2	-1618.5	5.7898	29.066	1.0600	1.396-2	29.776	163	1.000	-1.000	0.9928	1.3913	318	224	.724	260
280	1.345-2	-1583.7	5.9183	29.066	1.2110	1.296-2	29.767	173	1.000	-1.000	0.9953	1.3901	330	239	.722	280
298	1.260-2	-1560.4	5.9988	29.066	1.3776	1.216-2	29.742	182	1.000	-1.000	0.9986	1.3888	340	252	.722	298
300	1.252-2	-1557.8	6.0074	29.066	1.4035	1.208-2	29.738	183	1.000	-1.000	0.9990	1.3887	341	253	.722	300
320	1.166-2	-1525.9	6.1104	29.066	1.8491	1.129-2	29.657	192	1.000	-1.000	1.0053	1.3867	353	266	.724	320
340	1.079-2	-1480.7	6.2469	29.066	2.7697	1.056-2	29.466	199	1.000	-1.000	1.0170	1.3840	364	278	.729	340
360	9.841-3	-1409.3	6.4505	29.066	4.5673	9.840-3	29.067	205	1.000	-1.000	1.0390	1.3799	377	288	.738	360
380	9.321-3	-1388.3	6.5073	29.066	1.0427	9.321-3	29.066	214	1.000	-1.000	1.0427	1.3780	387	302	.738	380
					PRESSURE = 50.00 ATM											
200	9.390-2	-1680.1	5.0884	29.066	1.0105	9.073-2	29.779	131	1.000	-1.000	0.9888	1.3935	279	176	.734	200
220	8.540-2	-1659.8	5.1850	29.066	1.0169	8.248-2	29.779	142	1.000	-1.000	0.9897	1.3930	293	193	.730	220
240	7.830-2	-1639.4	5.2738	29.066	1.0246	7.560-2	29.779	153	1.000	-1.000	0.9911	1.3922	305	209	.726	240
260	7.229-2	-1618.8	5.3563	29.066	1.0368	6.979-2	29.778	163	1.000	-1.000	0.9928	1.3913	318	224	.724	260
280	6.715-2	-1584.8	5.4815	29.066	1.1344	6.480-2	29.776	173	1.000	-1.000	0.9949	1.3902	330	239	.722	280
298	6.305-2	-1564.0	5.5537	29.066	1.1685	6.084-2	29.771	182	1.000	-1.000	0.9972	1.3890	340	252	.721	298
300	6.265-2	-1561.8	5.5610	29.066	1.1737	6.047-2	29.770	183	1.000	-1.000	0.9975	1.3888	341	254	.721	300
320	5.867-2	-1537.5	5.6392	29.066	1.2627	5.666-2	29.754	193	1.000	-1.000	1.0009	1.3873	352	267	.721	320
340	5.505-2	-1510.7	5.7204	29.066	1.4377	5.326-2	29.716	201	1.000	-1.000	1.0056	1.3855	363	280	.723	340
360	5.165-2	-1479.1	5.8106	29.066	1.7478	5.016-2	29.636	210	1.000	-1.000	1.0125	1.3833	374	293	.725	360
380	4.832-2	-1439.5	5.9177	29.066	2.2569	4.728-2	29.486	217	1.000	-1.000	1.0230	1.3805	385	305	.729	380
400	4.490-2	-1387.0	6.0522	29.066	3.0545	4.452-2	29.226	224	1.000	-1.000	1.0390	1.3770	396	317	.734	400
420	4.217-2	-1346.5	6.1516	29.066	1.0508	4.217-2	29.066	231	1.000	-1.000	1.0508	1.3741	406	329	.737	420

TABLE 4A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.052240; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 29.1140;
DRY AIR; GASEOUS COMPOSITION: CO2= .10562; H2O= .08952; N2= .74589; O2= .05002; AR= .00895

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7740-3	8.8701-2	-2272.5	7.8110	7.1535	6.4959	5.8383	5.3787	1.0274	1.3850	281.3	120	160	.7682	200
210	1.6895-3	8.4477-2	-2262.2	7.8612	7.2036	6.5460	5.8885	5.4288	1.0284	1.3844	288.1	125	169	.7645	210
220	1.6127-3	8.0637-2	-2251.9	7.9091	7.2515	6.5939	5.9363	5.4767	1.0296	1.3839	294.9	131	177	.7612	220
230	1.5426-3	7.7131-2	-2241.6	7.9549	7.2973	6.6397	5.9821	5.5225	1.0308	1.3832	301.4	136	185	.7582	230
240	1.4783-3	7.3917-2	-2231.3	7.9987	7.3412	6.6836	6.0260	5.5664	1.0321	1.3825	307.8	142	193	.7556	240
250	1.4192-3	7.0961-2	-2221.0	8.0409	7.3833	6.7258	6.0682	5.6086	1.0335	1.3818	314.1	147	202	.7534	250
260	1.3646-3	6.8231-2	-2210.7	8.0815	7.4239	6.7663	6.1088	5.6491	1.0350	1.3811	320.2	152	209	.7515	260
270	1.3141-3	6.5704-2	-2200.3	8.1206	7.4630	6.8054	6.1478	5.6882	1.0365	1.3803	326.2	157	217	.7500	270
280	1.2672-3	6.3358-2	-2189.9	8.1583	7.5007	6.8431	6.1856	5.7259	1.0381	1.3795	332.1	162	225	.7489	280
290	1.2235-3	6.1173-2	-2179.5	8.1947	7.5372	6.8796	6.2220	5.7624	1.0398	1.3786	337.9	167	233	.7480	290
298	1.1900-3	5.9501-2	-2171.1	8.2236	7.5660	6.9084	6.2509	5.7912	1.0412	1.3779	342.5	171	239	.7475	298
300	1.1827-3	5.9134-2	-2169.1	8.2300	7.5724	6.9149	6.2573	5.7977	1.0416	1.3778	343.6	172	240	.7474	300
310	1.1445-3	5.7226-2	-2158.7	8.2642	7.6066	6.9491	6.2915	5.8319	1.0434	1.3769	349.1	177	247	.7474	310
320	1.1088-3	5.5438-2	-2148.3	8.2974	7.6398	6.9822	6.3246	5.8650	1.0453	1.3759	354.6	182	254	.7475	320
330	1.0752-3	5.3758-2	-2137.8	8.3296	7.6720	7.0144	6.3568	5.8972	1.0472	1.3750	360.0	187	261	.7477	330
340	1.0435-3	5.2177-2	-2127.3	8.3608	7.7033	7.0457	6.3881	5.9285	1.0492	1.3740	365.3	191	268	.7479	340
350	1.0137-3	5.0686-2	-2116.8	8.3913	7.7337	7.0761	6.4186	5.9589	1.0513	1.3730	370.4	196	275	.7480	350
360	9.8556-4	4.9278-2	-2106.3	8.4209	7.7634	7.1058	6.4482	5.9886	1.0534	1.3719	375.6	200	282	.7477	360
370	9.5893-4	4.7946-2	-2095.8	8.4498	7.7923	7.1347	6.4771	6.0175	1.0556	1.3709	380.6	205	289	.7473	370
380	9.3369-4	4.6685-2	-2085.2	8.4780	7.8204	7.1629	6.5053	6.0457	1.0579	1.3698	385.6	209	297	.7469	380
390	9.0975-4	4.5488-2	-2074.6	8.5055	7.8479	7.1904	6.5328	6.0732	1.0601	1.3687	390.4	214	304	.7464	390
400	8.8701-4	4.4350-2	-2064.0	8.5324	7.8748	7.2172	6.5597	6.1000	1.0625	1.3676	395.3	218	311	.7459	400
410	8.6537-4	4.3269-2	-2053.3	8.5587	7.9011	7.2435	6.5859	6.1263	1.0649	1.3665	400.0	222	318	.7457	410
420	8.4477-4	4.2239-2	-2042.7	8.5843	7.9268	7.2692	6.6116	6.1520	1.0673	1.3653	404.7	227	325	.7455	420
430	8.2512-4	4.1256-2	-2032.0	8.6095	7.9519	7.2943	6.6368	6.1771	1.0698	1.3642	409.3	231	331	.7453	430
440	8.0637-4	4.0319-2	-2021.3	8.6341	7.9765	7.3190	6.6614	6.2018	1.0723	1.3630	413.8	235	338	.7452	440
450	7.8845-4	3.9423-2	-2010.6	8.6582	8.0007	7.3431	6.6855	6.2259	1.0748	1.3618	418.3	239	345	.7451	450
460	7.7131-4	3.8566-2	-1999.8	8.6819	8.0243	7.3667	6.7092	6.2495	1.0774	1.3607	422.8	243	352	.7451	460
470	7.5490-4	3.7745-2	-1989.0	8.7051	8.0475	7.3899	6.7324	6.2727	1.0800	1.3595	427.2	247	358	.7451	470
480	7.3917-4	3.6959-2	-1978.2	8.7279	8.0703	7.4127	6.7551	6.2955	1.0827	1.3583	431.5	251	365	.7451	480
490	7.2409-4	3.6204-2	-1967.4	8.7502	8.0926	7.4351	6.7775	6.3179	1.0854	1.3571	435.8	255	372	.7452	490
500	7.0961-4	3.5480-2	-1956.5	8.7722	8.1146	7.4570	6.7994	6.3398	1.0881	1.3559	440.0	259	378	.7452	500
510	6.9569-4	3.4785-2	-1945.6	8.7937	8.1362	7.4786	6.8210	6.3614	1.0908	1.3547	444.2	263	385	.7451	510
520	6.8231-4	3.4116-2	-1934.7	8.8149	8.1574	7.4998	6.8422	6.3826	1.0936	1.3534	448.3	267	392	.7449	520
530	6.6944-4	3.3472-2	-1923.7	8.8358	8.1782	7.5206	6.8631	6.4035	1.0964	1.3522	452.4	271	398	.7447	530
540	6.5704-4	3.2852-2	-1912.7	8.8563	8.1987	7.5412	6.8836	6.4240	1.0992	1.3510	456.4	274	405	.7445	540
550	6.4510-4	3.2255-2	-1901.7	8.8765	8.2189	7.5614	6.9038	6.4442	1.1020	1.3498	460.4	278	412	.7443	550
560	6.3358-4	3.1679-2	-1890.7	8.8964	8.2388	7.5812	6.9237	6.4640	1.1049	1.3486	464.4	282	419	.7441	560
570	6.2246-4	3.1123-2	-1879.6	8.9160	8.2584	7.6008	6.9433	6.4836	1.1078	1.3473	468.3	286	425	.7439	570
580	6.1173-4	3.0587-2	-1868.5	8.9353	8.2777	7.6201	6.9625	6.5029	1.1107	1.3461	472.2	289	432	.7436	580
590	6.0136-4	3.0068-2	-1857.4	8.9543	8.2967	7.6391	6.9816	6.5219	1.1136	1.3449	476.0	293	439	.7433	590

TABLE 4A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.052240; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 29.1140;
DRY AIR; GASEOUS COMPOSITION: CO2= .10562; H2O= .08952; N2= .74589; O2= .05002; AR= .00895

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.9134-4	2.9567-2	-1846.3	8.9730	8.3154	7.6579	7.0003	6.5407	1.1165	1.3437	479.8	297	446	.7431	600
610	5.8164-4	2.9082-2	-1835.1	8.9915	8.3339	7.6763	7.0188	6.5591	1.1194	1.3425	483.6	300	452	.7427	610
620	5.7226-4	2.8613-2	-1823.9	9.0097	8.3521	7.6946	7.0370	6.5774	1.1223	1.3413	487.3	304	459	.7424	620
630	5.6318-4	2.8159-2	-1812.6	9.0277	8.3701	7.7126	7.0550	6.5954	1.1253	1.3401	491.0	307	466	.7420	630
640	5.5438-4	2.7719-2	-1801.4	9.0454	8.3879	7.7303	7.0727	6.6131	1.1282	1.3389	494.7	311	473	.7416	640
650	5.4585-4	2.7293-2	-1790.1	9.0630	8.4054	7.7478	7.0902	6.6306	1.1312	1.3377	498.3	314	480	.7412	650
660	5.3758-4	2.6879-2	-1778.8	9.0803	8.4227	7.7651	7.1075	6.6479	1.1342	1.3365	501.9	318	487	.7408	660
670	5.2956-4	2.6478-2	-1767.4	9.0973	8.4398	7.7822	7.1246	6.6650	1.1371	1.3354	505.5	321	494	.7405	670
680	5.2177-4	2.6088-2	-1756.0	9.1142	8.4566	7.7991	7.1415	6.6819	1.1401	1.3342	509.0	325	500	.7401	680
690	5.1421-4	2.5710-2	-1744.6	9.1309	8.4733	7.8157	7.1581	6.6985	1.1431	1.3330	512.5	328	507	.7397	690
700	5.0686-4	2.5343-2	-1733.2	9.1473	8.4898	7.8322	7.1746	6.7150	1.1460	1.3319	516.0	332	514	.7393	700
710	4.9972-4	2.4986-2	-1721.7	9.1636	8.5060	7.8485	7.1909	6.7313	1.1490	1.3308	519.4	335	521	.7389	710
720	4.9278-4	2.4639-2	-1710.2	9.1797	8.5221	7.8646	7.2070	6.7474	1.1519	1.3296	522.9	338	528	.7386	720
730	4.8603-4	2.4302-2	-1698.6	9.1956	8.5380	7.8805	7.2229	6.7633	1.1549	1.3285	526.3	342	535	.7382	730
740	4.7946-4	2.3973-2	-1687.1	9.2113	8.5538	7.8962	7.2386	6.7790	1.1578	1.3274	529.6	345	541	.7379	740
750	4.7307-4	2.3654-2	-1675.5	9.2269	8.5693	7.9118	7.2542	6.7946	1.1608	1.3263	533.0	348	548	.7375	750
760	4.6685-4	2.3342-2	-1663.9	9.2423	8.5847	7.9272	7.2696	6.8100	1.1637	1.3252	536.3	352	555	.7372	760
770	4.6078-4	2.3039-2	-1652.2	9.2575	8.6000	7.9424	7.2848	6.8252	1.1666	1.3241	539.6	355	562	.7368	770
780	4.5488-4	2.2744-2	-1640.5	9.2726	8.6150	7.9575	7.2999	6.8403	1.1695	1.3231	542.9	358	569	.7365	780
790	4.4912-4	2.2456-2	-1628.8	9.2875	8.6299	7.9724	7.3148	6.8552	1.1724	1.3220	546.1	361	576	.7362	790
800	4.4350-4	2.2175-2	-1617.1	9.3023	8.6447	7.9871	7.3296	6.8699	1.1753	1.3210	549.4	365	582	.7359	800
810	4.3803-4	2.1901-2	-1605.3	9.3169	8.6593	8.0018	7.3442	6.8846	1.1781	1.3200	552.6	368	589	.7356	810
820	4.3269-4	2.1634-2	-1593.5	9.3314	8.6738	8.0162	7.3587	6.8990	1.1810	1.3190	555.8	371	596	.7354	820
830	4.2747-4	2.1374-2	-1581.7	9.3457	8.6881	8.0306	7.3730	6.9134	1.1838	1.3180	558.9	374	603	.7351	830
840	4.2239-4	2.1119-2	-1569.8	9.3599	8.7023	8.0448	7.3872	6.9276	1.1866	1.3170	562.1	377	609	.7349	840
850	4.1742-4	2.0871-2	-1558.0	9.3740	8.7164	8.0588	7.4012	6.9416	1.1894	1.3160	565.2	380	616	.7347	850
860	4.1256-4	2.0628-2	-1546.1	9.3879	8.7303	8.0727	7.4152	6.9555	1.1921	1.3150	568.3	384	623	.7345	860
870	4.0782-4	2.0391-2	-1534.1	9.4017	8.7441	8.0865	7.4290	6.9693	1.1948	1.3141	571.4	387	629	.7343	870
880	4.0319-4	2.0159-2	-1522.2	9.4154	8.7578	8.1002	7.4426	6.9830	1.1976	1.3131	574.5	390	636	.7341	880
890	3.9866-4	1.9933-2	-1510.2	9.4289	8.7713	8.1138	7.4562	6.9966	1.2002	1.3122	577.5	393	642	.7339	890
900	3.9423-4	1.9711-2	-1498.2	9.4423	8.7848	8.1272	7.4696	7.0100	1.2029	1.3113	580.5	396	649	.7337	900
910	3.8989-4	1.9495-2	-1486.1	9.4556	8.7981	8.1405	7.4829	7.0233	1.2055	1.3104	583.6	399	656	.7335	910
920	3.8566-4	1.9283-2	-1474.0	9.4688	8.8113	8.1537	7.4961	7.0365	1.2082	1.3095	586.6	402	662	.7333	920
930	3.8151-4	1.9075-2	-1461.9	9.4819	8.8243	8.1668	7.5092	7.0496	1.2107	1.3087	589.6	405	669	.7331	930
940	3.7745-4	1.8873-2	-1449.8	9.4949	8.8373	8.1797	7.5221	7.0625	1.2133	1.3078	592.5	408	675	.7330	940
950	3.7348-4	1.8674-2	-1437.7	9.5077	8.8501	8.1926	7.5350	7.0754	1.2158	1.3070	595.5	411	682	.7328	950
960	3.6959-4	1.8479-2	-1425.5	9.5205	8.8629	8.2053	7.5477	7.0881	1.2183	1.3062	598.4	414	688	.7326	960
970	3.6578-4	1.8289-2	-1413.3	9.5331	8.8755	8.2179	7.5604	7.1008	1.2208	1.3054	601.3	417	695	.7325	970
980	3.6204-4	1.8102-2	-1401.1	9.5456	8.8881	8.2305	7.5729	7.1133	1.2232	1.3046	604.2	420	701	.7323	980
990	3.5839-4	1.7919-2	-1388.9	9.5581	8.9005	8.2429	7.5853	7.1257	1.2256	1.3038	607.1	423	708	.7322	990

TABLE 4A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.052240; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 29.1140;
DRY AIR; GASEOUS COMPOSITION: CO2= .10562; H2O= .08952; N2= .74589; O2= .05002; AR= .00895

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5480-4	1.7740-2	-1376.6	9.5704	8.9128	8.2552	7.5977	7.1380	1.2279	1.3031	610.0	426	714	.7320	1000
1050	3.3791-4	1.6895-2	-1314.9	9.6306	8.9730	8.3154	7.6578	7.1982	1.2390	1.2995	624.2	440	745	.7314	1050
1100	3.2255-4	1.6127-2	-1252.7	9.6885	9.0309	8.3733	7.7157	7.2561	1.2495	1.2963	638.1	454	776	.7309	1100
1150	3.0852-4	1.5426-2	-1190.0	9.7442	9.0866	8.4291	7.7715	7.3119	1.2595	1.2932	651.7	468	807	.7304	1150
1200	2.9567-4	1.4783-2	-1126.8	9.7980	9.1404	8.4829	7.8253	7.3657	1.2690	1.2904	665.0	481	837	.7301	1200
1250	2.8384-4	1.4192-2	-1063.1	9.8500	9.1924	8.5349	7.8773	7.4177	1.2781	1.2877	678.0	495	866	.7297	1250
1300	2.7293-4	1.3646-2	-999.0	9.9003	9.2427	8.5852	7.9276	7.4680	1.2868	1.2852	690.8	508	896	.7294	1300
1350	2.6282-4	1.3141-2	-934.4	9.9490	9.2915	8.6339	7.9763	7.5167	1.2950	1.2829	703.3	521	925	.7291	1350
1400	2.5343-4	1.2672-2	-869.5	9.9963	9.3387	8.6811	8.0235	7.5639	1.3028	1.2807	715.6	533	954	.7288	1400
1450	2.4469-4	1.2235-2	-804.1	10.0421	9.3845	8.7270	8.0694	7.6098	1.3102	1.2787	727.7	546	982	.7284	1450
1500	2.3654-4	1.1827-2	-738.4	10.0867	9.4291	8.7715	8.1139	7.6543	1.3173	1.2768	739.6	558	1010	.7281	1500
1550	2.2891-4	1.1445-2	-672.4	10.1300	9.4724	8.8148	8.1572	7.6976	1.3240	1.2750	751.3	571	1039	.7275	1550
1600	2.2175-4	1.1088-2	-606.1	10.1721	9.5145	8.8569	8.1994	7.7397	1.3303	1.2734	762.8	583	1066	.7270	1600
1650	2.1503-4	1.0752-2	-539.4	10.2131	9.5555	8.8980	8.2404	7.7808	1.3363	1.2718	774.1	595	1094	.7265	1650
1700	2.0871-4	1.0435-2	-472.4	10.2531	9.5955	8.9380	8.2804	7.8208	1.3420	1.2703	785.3	607	1122	.7259	1700
1750	2.0274-4	1.0137-2	-405.2	10.2921	9.6345	8.9769	8.3194	7.8597	1.3474	1.2690	796.4	618	1149	.7253	1750
1800	1.9711-4	9.8557-3	-337.7	10.3301	9.6725	9.0150	8.3574	7.8978	1.3525	1.2677	807.2	630	1176	.7247	1800
1850	1.9179-4	9.5893-3	-269.9	10.3672	9.7097	9.0521	8.3945	7.9349	1.3574	1.2665	818.0	641	1202	.7242	1850
1900	1.8674-4	9.3369-3	-202.0	10.4035	9.7459	9.0883	8.4308	7.9711	1.3620	1.2653	828.6	653	1229	.7236	1900
1950	1.8195-4	9.0975-3	-133.8	10.4389	9.7814	9.1238	8.4662	8.0066	1.3663	1.2643	839.1	664	1255	.7230	1950
2000	1.7740-4	8.8701-3	-65.3	10.4736	9.8160	9.1584	8.5008	8.0412	1.3704	1.2632	849.4	675	1281	.7224	2000
2050	1.7307-4	8.6537-3	3.3	10.5075	9.8499	9.1923	8.5347	8.0751	1.3743	1.2623	859.7	686	1306	.7219	2050
2100	1.6895-4	8.4477-3	72.1	10.5406	9.8830	9.2255	8.5679	8.1083	1.3780	1.2614	869.8	697	1331	.7214	2100
2150	1.6502-4	8.2512-3	141.1	10.5731	9.9155	9.2579	8.6004	8.1407	1.3815	1.2606	879.8	708	1356	.7210	2150
2200	1.6127-4	8.0637-3	210.2	10.6049	9.9473	9.2897	8.6322	8.1725	1.3848	1.2598	889.7	719	1381	.7205	2200
2250	1.5769-4	7.8845-3	279.6	10.6360	9.9785	9.3209	8.6633	8.2037	1.3879	1.2591	899.5	729	1406	.7200	2250
2300	1.5426-4	7.7131-3	349.0	10.6666	10.0090	9.3514	8.6939	8.2342	1.3909	1.2584	909.1	740	1430	.7195	2300
2350	1.5098-4	7.5490-3	418.6	10.6965	10.0389	9.3814	8.7238	8.2642	1.3937	1.2577	918.7	750	1454	.7189	2350
2400	1.4783-4	7.3917-3	488.4	10.7259	10.0683	9.4107	8.7532	8.2935	1.3964	1.2571	928.2	760	1478	.7184	2400
2450	1.4482-4	7.2409-3	558.3	10.7547	10.0971	9.4396	8.7820	8.3224	1.3989	1.2565	937.6	771	1502	.7178	2450
2500	1.4192-4	7.0961-3	628.3	10.7830	10.1254	9.4678	8.8103	8.3506	1.4013	1.2560	946.9	781	1525	.7173	2500
2550	1.3914-4	6.9569-3	698.4	10.8108	10.1532	9.4956	8.8380	8.3784	1.4036	1.2554	956.2	791	1549	.7166	2550
2600	1.3646-4	6.8231-3	768.6	10.8380	10.1805	9.5229	8.8653	8.4057	1.4058	1.2549	965.3	801	1573	.7159	2600
2650	1.3389-4	6.6944-3	839.0	10.8648	10.2073	9.5497	8.8921	8.4325	1.4079	1.2545	974.3	811	1596	.7152	2650
2700	1.3141-4	6.5704-3	909.4	10.8912	10.2336	9.5760	8.9185	8.4588	1.4099	1.2540	983.3	821	1619	.7145	2700
2750	1.2902-4	6.4510-3	980.0	10.9171	10.2595	9.6019	8.9443	8.4847	1.4118	1.2536	992.2	830	1643	.7138	2750
2800	1.2672-4	6.3358-3	1050.6	10.9425	10.2850	9.6274	8.9698	8.5102	1.4137	1.2531	1001.0	840	1665	.7132	2800
2850	1.2449-4	6.2246-3	1121.3	10.9676	10.3100	9.6524	8.9948	8.5352	1.4155	1.2528	1009.8	850	1688	.7125	2850
2900	1.2235-4	6.1173-3	1192.2	10.9922	10.3346	9.6770	9.0195	8.5598	1.4172	1.2524	1018.4	859	1711	.7119	2900
2950	1.2027-4	6.0136-3	1263.1	11.0164	10.3589	9.7013	9.0437	8.5841	1.4188	1.2520	1027.0	869	1733	.7113	2950
3000	1.1827-4	5.9134-3	1334.0	11.0403	10.3827	9.7251	9.0676	8.6079	1.4204	1.2516	1035.5	878	1756	.7107	3000

TABLE 4.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.052240; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.9423-6	-1498.1	9.4424	29.114	396	1.0000	-1.0000	1.2031	1.3112	580.5	649	.734	1.2029	1.3113	580.5	649	.734
950	3.7348-6	-1437.7	9.5077	29.114	411	1.0000	-1.0000	1.2162	1.3069	595.4	682	.733	1.2158	1.3070	595.5	682	.733
1000	3.5480-6	-1376.5	9.5704	29.114	426	1.0000	-1.0000	1.2285	1.3029	610.0	714	.732	1.2279	1.3031	610.0	714	.732
1050	3.3791-6	-1314.8	9.6307	29.114	440	1.0000	-1.0000	1.2399	1.2993	624.2	746	.731	1.2390	1.2995	624.2	745	.731
1100	3.2255-6	-1252.6	9.6886	29.114	454	1.0000	-1.0000	1.2509	1.2959	638.0	777	.731	1.2495	1.2963	638.1	776	.731
1150	3.0852-6	-1189.7	9.7444	29.114	468	1.0000	-1.0000	1.2615	1.2926	651.6	808	.730	1.2595	1.2932	651.7	807	.730
1200	2.9567-6	-1126.4	9.7983	29.114	481	1.0000	-1.0000	1.2720	1.2895	664.8	839	.730	1.2690	1.2904	665.0	837	.730
1250	2.8384-6	-1062.5	9.8505	29.114	495	1.0001	-1.0000	1.2823	1.2866	677.7	869	.730	1.2781	1.2877	678.0	866	.730
1300	2.7292-6	-998.2	9.9010	29.114	508	1.0001	-1.0000	1.2926	1.2837	690.3	900	.729	1.2868	1.2852	690.8	896	.729
1350	2.6281-6	-933.3	9.9500	29.114	521	1.0002	-1.0000	1.3031	1.2808	702.7	931	.729	1.2950	1.2829	703.3	925	.729
1400	2.5343-6	-867.8	9.9975	29.113	533	1.0003	-1.0000	1.3142	1.2779	714.8	963	.728	1.3028	1.2808	715.6	954	.729
1450	2.4468-6	-801.8	10.0439	29.113	546	1.0006	-1.0000	1.3263	1.2748	726.6	996	.727	1.3102	1.2787	727.7	982	.728
1500	2.3652-6	-735.2	10.0891	29.112	558	1.0010	-1.0000	1.3401	1.2715	738.0	1031	.726	1.3173	1.2768	739.6	1010	.728
1550	2.2888-6	-667.8	10.1333	29.111	571	1.0016	-1.0000	1.3567	1.2677	749.1	1070	.724	1.3239	1.2751	751.3	1039	.728
1600	2.2171-6	-599.4	10.1767	29.109	583	1.0027	-1.0001	1.3777	1.2633	759.8	1114	.720	1.3303	1.2734	762.9	1066	.727
1650	2.1497-6	-529.9	10.2194	29.106	595	1.0045	-1.0001	1.4052	1.2579	770.0	1167	.716	1.3363	1.2719	774.3	1094	.726
1700	2.0861-6	-458.8	10.2619	29.101	607	1.0072	-1.0002	1.4426	1.2512	779.6	1233	.709	1.3420	1.2705	785.5	1122	.726
1750	2.0260-6	-385.4	10.3044	29.093	618	1.0114	-1.0003	1.4939	1.2429	788.4	1319	.700	1.3473	1.2692	796.7	1149	.725
1800	1.9689-6	-309.0	10.3475	29.081	630	1.0178	-1.0005	1.5649	1.2327	796.5	1434	.687	1.3524	1.2681	807.8	1176	.724
1850	1.9145-6	-228.5	10.3916	29.064	641	1.0271	-1.0008	1.6623	1.2207	803.8	1590	.670	1.3571	1.2671	818.9	1202	.724
1900	1.8625-6	-142.2	10.4376	29.038	652	1.0404	-1.0012	1.7942	1.2071	810.4	1803	.649	1.3616	1.2663	830.0	1229	.723
1950	1.8124-6	-48.4	10.4864	29.001	663	1.0588	-1.0017	1.9688	1.1926	816.5	2091	.625	1.3657	1.2657	841.2	1255	.722
2000	1.7640-6	55.5	10.5389	28.949	674	1.0836	-1.0026	2.1937	1.1781	822.6	2475	.598	1.3695	1.2654	852.6	1281	.720
2050	1.7167-6	171.9	10.5964	28.879	685	1.1156	-1.0036	2.4741	1.1644	829.0	2975	.569	1.3730	1.2653	864.2	1307	.719
2100	1.6704-6	303.9	10.6600	28.785	695	1.1555	-1.0050	2.8116	1.1523	836.0	3610	.541	1.3762	1.2656	876.2	1333	.717
2150	1.6247-6	454.0	10.7306	28.664	705	1.2036	-1.0068	3.2042	1.1420	843.9	4396	.514	1.3791	1.2664	888.7	1360	.715
2200	1.5794-6	625.1	10.8093	28.512	714	1.2596	-1.0089	3.6468	1.1337	852.8	5343	.488	1.3817	1.2675	901.8	1387	.712
2250	1.5343-6	819.4	10.8966	28.327	724	1.3230	-1.0114	4.1328	1.1272	862.8	6456	.463	1.3840	1.2692	915.5	1415	.708
2300	1.4892-6	1039.0	10.9931	28.105	733	1.3933	-1.0143	4.6557	1.1224	873.9	7730	.441	1.3862	1.2713	930.1	1444	.703
2350	1.4440-6	1285.5	11.0991	27.846	742	1.4699	-1.0176	5.2097	1.1188	886.0	9145	.423	1.3883	1.2740	945.5	1476	.698
2400	1.3988-6	1560.4	11.2148	27.548	750	1.5519	-1.0214	5.7881	1.1164	899.2	10662	.407	1.3904	1.2773	961.9	1511	.690
2450	1.3536-6	1864.6	11.3402	27.213	759	1.6377	-1.0254	6.3811	1.1148	913.5	12212	.396	1.3926	1.2811	979.3	1549	.682
2500	1.3084-6	2198.5	11.4751	26.841	767	1.7246	-1.0297	6.9714	1.1141	928.9	13700	.390	1.3949	1.2855	997.7	1590	.672
2550	1.2634-6	2561.2	11.6188	26.436	775	1.8082	-1.0341	7.5305	1.1141	945.3	15004	.389	1.3974	1.2904	1017.3	1637	.662
2600	1.2189-6	2950.3	11.7699	26.005	783	1.8821	-1.0382	8.0166	1.1149	962.7	15988	.393	1.4001	1.2959	1037.9	1687	.650
2650	1.1753-6	3360.8	11.9262	25.557	791	1.9389	-1.0418	8.3783	1.1163	981.0	16535	.401	1.4030	1.3019	1059.4	1740	.638
2700	1.1331-6	3785.2	12.0849	25.104	799	1.9708	-1.0443	8.5629	1.1185	1000.1	16566	.413	1.4061	1.3081	1081.6	1796	.626
2750	1.0928-6	4213.5	12.2421	24.660	808	1.9724	-1.0454	8.5320	1.1215	1019.7	16074	.429	1.4092	1.3145	1104.0	1852	.615
2800	1.0549-6	4634.6	12.3938	24.237	817	1.9424	-1.0450	8.2750	1.1253	1039.7	15127	.447	1.4124	1.3208	1126.4	1908	.604
2850	1.0197-6	5037.6	12.5365	23.847	826	1.8839	-1.0432	7.8150	1.1301	1059.7	13850	.466	1.4155	1.3268	1148.2	1962	.596
2900	9.8750-7	5413.5	12.6673	23.499	835	1.8040	-1.0401	7.2028	1.1360	1079.7	12396	.485	1.4183	1.3324	1169.2	2012	.588
2950	9.5826-7	5756.4	12.7845	23.196	844	1.7115	-1.0363	6.5021	1.1431	1099.4	10903	.503	1.4210	1.3373	1189.1	2059	.582
3000	9.3184-7	6063.3	12.8877	22.939	854	1.6147	-1.0320	5.7751	1.1516	1119.0	9481	.520	1.4234	1.3416	1207.8	2103	.578

TABLE 4.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.052240; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9423-5	-1498.1	8.7848	29.114	396	1.0000	-1.0000	1.2031	1.3112	580.5	649	.734	1.2029	1.3113	580.5	649	.734
950	3.7348-5	-1437.7	8.8502	29.114	411	1.0000	-1.0000	1.2162	1.3069	595.4	682	.733	1.2158	1.3070	595.5	682	.733
1000	3.5480-5	-1376.5	8.9129	29.114	426	1.0000	-1.0000	1.2285	1.3029	610.0	714	.732	1.2279	1.3031	610.0	714	.732
1050	3.3791-5	-1314.8	8.9731	29.114	440	1.0000	-1.0000	1.2399	1.2993	624.2	746	.731	1.2390	1.2995	624.2	745	.731
1100	3.2255-5	-1252.6	9.0310	29.114	454	1.0000	-1.0000	1.2508	1.2959	638.0	777	.731	1.2495	1.2963	638.1	776	.731
1150	3.0852-5	-1189.7	9.0869	29.114	468	1.0000	-1.0000	1.2614	1.2927	651.6	808	.730	1.2595	1.2932	651.7	807	.730
1200	2.9567-5	-1126.4	9.1408	29.114	481	1.0000	-1.0000	1.2717	1.2896	664.8	839	.730	1.2690	1.2904	665.0	837	.730
1250	2.8384-5	-1062.6	9.1929	29.114	495	1.0000	-1.0000	1.2818	1.2867	677.7	869	.730	1.2781	1.2877	678.0	866	.730
1300	2.7292-5	-998.2	9.2433	29.114	508	1.0001	-1.0000	1.2918	1.2839	690.4	899	.729	1.2868	1.2852	690.8	896	.729
1350	2.6282-5	-933.4	9.2923	29.114	521	1.0001	-1.0000	1.3017	1.2811	702.8	930	.729	1.2950	1.2829	703.3	925	.729
1400	2.5343-5	-868.1	9.3398	29.114	533	1.0002	-1.0000	1.3117	1.2784	714.9	961	.728	1.3028	1.2807	715.6	954	.729
1450	2.4469-5	-802.2	9.3860	29.114	546	1.0003	-1.0000	1.3220	1.2757	726.8	992	.728	1.3102	1.2787	727.7	982	.728
1500	2.3653-5	-735.9	9.4310	29.113	558	1.0004	-1.0000	1.3329	1.2730	738.5	1024	.727	1.3173	1.2768	739.6	1010	.728
1550	2.2889-5	-668.9	9.4749	29.113	571	1.0007	-1.0000	1.3447	1.2701	749.8	1057	.726	1.3240	1.2750	751.3	1039	.728
1600	2.2173-5	-601.4	9.5178	29.112	583	1.0011	-1.0000	1.3580	1.2670	760.9	1092	.725	1.3303	1.2734	762.8	1066	.727
1650	2.1501-5	-533.1	9.5598	29.111	595	1.0018	-1.0000	1.3735	1.2637	771.7	1130	.723	1.3363	1.2718	774.2	1094	.726
1700	2.0867-5	-463.9	9.6011	29.109	607	1.0028	-1.0001	1.3923	1.2598	782.1	1173	.720	1.3420	1.2704	785.4	1122	.726
1750	2.0269-5	-393.8	9.6418	29.106	618	1.0043	-1.0001	1.4158	1.2553	792.2	1221	.717	1.3474	1.2691	796.5	1149	.725
1800	1.9703-5	-322.3	9.6821	29.101	630	1.0065	-1.0002	1.4458	1.2500	801.8	1279	.712	1.3525	1.2678	807.5	1176	.725
1850	1.9166-5	-249.0	9.7222	29.095	641	1.0097	-1.0003	1.4847	1.2437	810.9	1349	.706	1.3573	1.2667	818.3	1202	.724
1900	1.8656-5	-173.6	9.7624	29.086	653	1.0143	-1.0004	1.5354	1.2363	819.4	1437	.697	1.3618	1.2657	829.1	1229	.723
1950	1.8169-5	-95.2	9.8031	29.072	664	1.0208	-1.0006	1.6015	1.2277	827.4	1548	.687	1.3661	1.2648	839.8	1255	.723
2000	1.7704-5	-13.1	9.8447	29.054	675	1.0296	-1.0009	1.6868	1.2179	834.9	1690	.674	1.3701	1.2640	850.6	1281	.722
2050	1.7257-5	73.8	9.8876	29.029	686	1.0414	-1.0013	1.7956	1.2073	841.9	1871	.658	1.3738	1.2634	861.3	1306	.721
2100	1.6826-5	166.9	9.9325	28.995	696	1.0568	-1.0018	1.9318	1.1961	848.7	2102	.640	1.3773	1.2630	872.1	1332	.720
2150	1.6409-5	267.5	9.9798	28.950	707	1.0764	-1.0025	2.0983	1.1850	855.4	2392	.620	1.3804	1.2627	883.0	1357	.719
2200	1.6004-5	377.3	10.0303	28.891	717	1.1006	-1.0034	2.2968	1.1743	862.2	2751	.599	1.3834	1.2627	894.1	1382	.718
2250	1.5608-5	497.7	10.0844	28.817	727	1.1296	-1.0045	2.5269	1.1645	869.5	3185	.577	1.3860	1.2629	905.5	1407	.717
2300	1.5220-5	630.4	10.1427	28.725	737	1.1634	-1.0058	2.7862	1.1559	877.2	3702	.555	1.3884	1.2634	917.1	1432	.715
2350	1.4838-5	776.8	10.2057	28.612	747	1.2017	-1.0073	3.0708	1.1486	885.6	4305	.533	1.3906	1.2642	929.1	1457	.713
2400	1.4461-5	937.9	10.2735	28.479	756	1.2441	-1.0091	3.3760	1.1425	894.7	4996	.511	1.3925	1.2653	941.6	1483	.710
2450	1.4088-5	1114.6	10.3464	28.322	765	1.2900	-1.0111	3.6970	1.1377	904.6	5775	.490	1.3943	1.2667	954.5	1509	.707
2500	1.3719-5	1307.8	10.4244	28.143	774	1.3392	-1.0133	4.0297	1.1340	915.2	6640	.470	1.3959	1.2685	967.9	1536	.704
2550	1.3353-5	1517.7	10.5076	27.940	783	1.3911	-1.0158	4.3708	1.1312	926.5	7582	.452	1.3974	1.2706	981.9	1566	.699
2600	1.2990-5	1744.9	10.5958	27.715	792	1.4454	-1.0185	4.7178	1.1292	938.5	8589	.435	1.3989	1.2730	996.5	1596	.694
2650	1.2631-5	1989.6	10.6890	27.466	800	1.5017	-1.0214	5.0681	1.1278	951.2	9637	.421	1.4004	1.2758	1011.7	1629	.688
2700	1.2275-5	2251.7	10.7870	27.195	809	1.5593	-1.0245	5.4180	1.1271	964.6	10696	.410	1.4019	1.2789	1027.5	1664	.681
2750	1.1922-5	2531.3	10.8895	26.903	817	1.6172	-1.0277	5.7616	1.1269	978.6	11722	.402	1.4035	1.2824	1044.0	1702	.674
2800	1.1574-5	2827.7	10.9963	26.592	826	1.6736	-1.0310	6.0896	1.1271	993.4	12666	.397	1.4052	1.2862	1061.1	1742	.666
2850	1.1231-5	3139.8	11.1068	26.264	834	1.7263	-1.0343	6.3888	1.1279	1008.7	13471	.396	1.4071	1.2903	1078.9	1786	.657
2900	1.0894-5	3465.8	11.2202	25.924	843	1.7725	-1.0374	6.6425	1.1291	1024.8	14084	.397	1.4091	1.2947	1097.3	1832	.648
2950	1.0565-5	3803.0	11.3355	25.576	851	1.8090	-1.0401	6.8321	1.1308	1041.4	14459	.402	1.4112	1.2993	1116.3	1880	.639
3000	1.0247-5	4147.6	11.4513	25.225	860	1.8328	-1.0422	6.9394	1.1330	1058.4	14565	.410	1.4134	1.3041	1135.6	1931	.629

TABLE 4.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.052240; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE		J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
900	3.9423-4	-1498.1	8.1272	29.114	396	1.0000 -1.0000	1.2031	1.3112	580.5	649	.734	1.2029	1.3113	580.5	649 .734
950	3.7348-4	-1437.7	8.1926	29.114	411	1.0000 -1.0000	1.2162	1.3069	595.4	682	.733	1.2158	1.3070	595.5	682 .733
1000	3.5480-4	-1376.5	8.2553	29.114	426	1.0000 -1.0000	1.2285	1.3029	610.0	714	.732	1.2279	1.3031	610.0	714 .732
1050	3.3791-4	-1314.8	8.3155	29.114	440	1.0000 -1.0000	1.2398	1.2993	624.2	746	.731	1.2390	1.2995	624.2	745 .731
1100	3.2255-4	-1252.6	8.3734	29.114	454	1.0000 -1.0000	1.2508	1.2959	638.0	777	.731	1.2495	1.2963	638.1	776 .731
1150	3.0852-4	-1189.8	8.4293	29.114	468	1.0000 -1.0000	1.2613	1.2927	651.6	808	.730	1.2595	1.2932	651.7	807 .730
1200	2.9567-4	-1126.4	8.4832	29.114	481	1.0000 -1.0000	1.2716	1.2896	664.8	838	.730	1.2690	1.2904	665.0	837 .730
1250	2.8384-4	-1062.6	8.5353	29.114	495	1.0000 -1.0000	1.2816	1.2867	677.7	869	.730	1.2781	1.2877	678.0	866 .730
1300	2.7293-4	-998.3	8.5857	29.114	508	1.0000 -1.0000	1.2914	1.2840	690.4	899	.729	1.2868	1.2852	690.8	896 .729
1350	2.6282-4	-933.5	8.6347	29.114	521	1.0000 -1.0000	1.3010	1.2813	702.8	929	.729	1.2950	1.2829	703.3	925 .729
1400	2.5343-4	-868.2	8.6821	29.114	533	1.0001 -1.0000	1.3105	1.2787	715.0	959	.729	1.3028	1.2807	715.6	954 .729
1450	2.4469-4	-802.4	8.7283	29.114	546	1.0001 -1.0000	1.3201	1.2761	726.9	990	.728	1.3102	1.2787	727.7	982 .728
1500	2.3653-4	-736.2	8.7732	29.114	558	1.0002 -1.0000	1.3298	1.2736	738.6	1020	.728	1.3173	1.2768	739.6	1010 .728
1550	2.2890-4	-669.4	8.8170	29.113	571	1.0003 -1.0000	1.3397	1.2711	750.1	1052	.727	1.3240	1.2750	751.3	1039 .728
1600	2.2174-4	-602.2	8.8597	29.113	583	1.0005 -1.0000	1.3501	1.2686	761.4	1084	.726	1.3303	1.2734	762.8	1066 .727
1650	2.1502-4	-534.4	8.9014	29.112	595	1.0008 -1.0000	1.3613	1.2660	772.4	1117	.725	1.3363	1.2718	774.2	1094 .726
1700	2.0869-4	-466.0	8.9422	29.112	607	1.0012 -1.0000	1.3736	1.2633	783.2	1151	.724	1.3420	1.2704	785.4	1122 .726
1750	2.0272-4	-397.0	8.9822	29.110	618	1.0018 -1.0000	1.3874	1.2603	793.7	1188	.722	1.3474	1.2690	796.4	1149 .725
1800	1.9708-4	-327.3	9.0215	29.109	630	1.0026 -1.0001	1.4034	1.2571	803.9	1228	.720	1.3525	1.2677	807.3	1176 .725
1850	1.9173-4	-256.6	9.0602	29.106	641	1.0038 -1.0001	1.4223	1.2535	813.9	1271	.718	1.3573	1.2666	818.1	1202 .724
1900	1.8666-4	-185.0	9.0985	29.103	653	1.0054 -1.0001	1.4452	1.2495	823.6	1320	.714	1.3619	1.2655	828.8	1229 .723
1950	1.8185-4	-112.0	9.1363	29.098	664	1.0077 -1.0002	1.4732	1.2449	832.9	1377	.710	1.3662	1.2645	839.4	1255 .723
2000	1.7726-4	-37.5	9.1741	29.091	675	1.0108 -1.0003	1.5079	1.2397	841.8	1443	.705	1.3703	1.2635	849.9	1281 .722
2050	1.7288-4	38.9	9.2118	29.082	686	1.0149 -1.0005	1.5508	1.2337	850.3	1522	.699	1.3741	1.2627	860.3	1306 .722
2100	1.6870-4	117.7	9.2498	29.069	697	1.0204 -1.0006	1.6039	1.2271	858.5	1616	.691	1.3777	1.2620	870.6	1331 .721
2150	1.6468-4	199.5	9.2883	29.053	707	1.0276 -1.0009	1.6692	1.2197	866.3	1731	.682	1.3811	1.2614	881.0	1356 .720
2200	1.6082-4	284.9	9.3275	29.032	718	1.0367 -1.0012	1.7486	1.2119	873.8	1870	.671	1.3842	1.2609	891.3	1381 .720
2250	1.5710-4	374.6	9.3679	29.004	728	1.0481 -1.0016	1.8440	1.2036	881.1	2038	.659	1.3871	1.2605	901.7	1406 .719
2300	1.5350-4	469.6	9.4096	28.969	739	1.0622 -1.0021	1.9565	1.1952	888.3	2240	.645	1.3898	1.2602	912.1	1430 .718
2350	1.5000-4	570.6	9.4530	28.926	749	1.0790 -1.0028	2.0867	1.1870	895.4	2479	.630	1.3923	1.2602	922.6	1454 .717
2400	1.4660-4	678.5	9.4985	28.872	759	1.0986 -1.0036	2.2343	1.1792	902.8	2758	.615	1.3946	1.2602	933.3	1478 .716
2450	1.4329-4	794.3	9.5462	28.807	769	1.1211 -1.0045	2.3978	1.1720	910.4	3081	.598	1.3967	1.2605	944.1	1502 .715
2500	1.4004-4	918.5	9.5964	28.729	778	1.1462 -1.0056	2.5752	1.1656	918.3	3448	.581	1.3985	1.2609	955.1	1526 .713
2550	1.3686-4	1052.0	9.6492	28.638	788	1.1738 -1.0068	2.7636	1.1600	926.7	3859	.564	1.4002	1.2616	966.4	1551 .711
2600	1.3374-4	1195.0	9.7048	28.534	797	1.2034 -1.0081	2.9599	1.1553	935.6	4315	.547	1.4018	1.2624	978.0	1575 .709
2650	1.3067-4	1348.0	9.7631	28.415	806	1.2346 -1.0096	3.1611	1.1514	944.9	4815	.529	1.4031	1.2635	989.8	1600 .707
2700	1.2765-4	1511.2	9.8241	28.282	816	1.2673 -1.0112	3.3646	1.1483	954.7	5357	.512	1.4044	1.2648	1001.9	1626 .704
2750	1.2468-4	1684.5	9.8877	28.135	824	1.3010 -1.0129	3.5683	1.1458	965.0	5939	.495	1.4055	1.2662	1014.4	1652 .702
2800	1.2175-4	1868.0	9.9538	27.974	833	1.3356 -1.0147	3.7709	1.1440	975.7	6559	.479	1.4066	1.2679	1027.2	1679 .698
2850	1.1887-4	2061.6	10.0223	27.800	842	1.3710 -1.0167	3.9714	1.1427	986.9	7211	.464	1.4077	1.2698	1040.4	1707 .695
2900	1.1604-4	2265.1	10.0931	27.613	851	1.4069 -1.0187	4.1692	1.1418	998.5	7887	.450	1.4087	1.2719	1053.9	1736 .690
2950	1.1324-4	2478.4	10.1660	27.413	859	1.4433 -1.0209	4.3638	1.1414	1010.6	8578	.437	1.4097	1.2741	1067.7	1766 .686
3000	1.1050-4	2701.4	10.2410	27.201	868	1.4800 -1.0232	4.5541	1.1413	1023.0	9270	.426	1.4108	1.2766	1082.0	1799 .681

TABLE 4.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.052240; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.9423-3	-1498.1	7.4696	29.114	396	1.0000	-1.0000	1.2031	1.3112	580.5	649	.734	1.2029	1.3113	580.5	649	.734
950	3.7348-3	-1437.7	7.5350	29.114	411	1.0000	-1.0000	1.2162	1.3069	595.4	682	.733	1.2158	1.3070	595.5	682	.733
1000	3.5480-3	-1376.5	7.5977	29.114	426	1.0000	-1.0000	1.2285	1.3029	610.0	714	.732	1.2279	1.3031	610.0	714	.732
1050	3.3791-3	-1314.8	7.6579	29.114	440	1.0000	-1.0000	1.2398	1.2993	624.2	746	.731	1.2390	1.2995	624.2	745	.731
1100	3.2255-3	-1252.6	7.7159	29.114	454	1.0000	-1.0000	1.2508	1.2959	638.0	777	.731	1.2495	1.2963	638.1	776	.731
1150	3.0852-3	-1189.8	7.7717	29.114	468	1.0000	-1.0000	1.2613	1.2927	651.6	808	.730	1.2595	1.2932	651.7	807	.730
1200	2.9567-3	-1126.4	7.8256	29.114	481	1.0000	-1.0000	1.2715	1.2896	664.8	838	.730	1.2690	1.2904	665.0	837	.730
1250	2.8384-3	-1062.6	7.8777	29.114	495	1.0000	-1.0000	1.2815	1.2868	677.7	869	.730	1.2781	1.2877	678.0	866	.730
1300	2.7293-3	-998.3	7.9282	29.114	508	1.0000	-1.0000	1.2912	1.2840	690.4	899	.729	1.2868	1.2852	690.8	896	.729
1350	2.6282-3	-933.5	7.9771	29.114	521	1.0000	-1.0000	1.3006	1.2814	702.9	929	.729	1.2950	1.2829	703.3	925	.729
1400	2.5343-3	-868.2	8.0245	29.114	533	1.0000	-1.0000	1.3099	1.2788	715.0	959	.729	1.3028	1.2807	715.6	954	.729
1450	2.4469-3	-802.5	8.0707	29.114	546	1.0001	-1.0000	1.3191	1.2763	727.0	989	.728	1.3102	1.2787	727.7	982	.728
1500	2.3653-3	-736.3	8.1155	29.114	558	1.0001	-1.0000	1.3283	1.2740	738.7	1019	.728	1.3173	1.2768	739.6	1010	.728
1550	2.2890-3	-669.7	8.1592	29.114	571	1.0002	-1.0000	1.3374	1.2716	750.3	1049	.727	1.3240	1.2750	751.3	1039	.728
1600	2.2175-3	-602.6	8.2019	29.114	583	1.0002	-1.0000	1.3467	1.2693	761.6	1080	.727	1.3303	1.2734	762.8	1066	.727
1650	2.1503-3	-535.0	8.2434	29.113	595	1.0004	-1.0000	1.3561	1.2670	772.7	1111	.726	1.3363	1.2718	774.1	1094	.726
1700	2.0870-3	-466.9	8.2841	29.113	607	1.0005	-1.0000	1.3659	1.2647	783.6	1143	.725	1.3420	1.2703	785.3	1122	.726
1750	2.0273-3	-398.4	8.3238	29.112	618	1.0008	-1.0000	1.3762	1.2624	794.3	1175	.724	1.3474	1.2690	796.4	1149	.725
1800	1.9710-3	-329.3	8.3627	29.112	630	1.0011	-1.0000	1.3871	1.2600	804.8	1209	.723	1.3525	1.2677	807.3	1176	.725
1850	1.9176-3	-259.7	8.4009	29.111	641	1.0016	-1.0000	1.3990	1.2575	815.1	1243	.722	1.3573	1.2665	818.0	1202	.724
1900	1.8671-3	-189.4	8.4384	29.109	653	1.0022	-1.0001	1.4123	1.2548	825.2	1280	.720	1.3619	1.2654	828.7	1229	.724
1950	1.8191-3	-118.4	8.4752	29.107	664	1.0031	-1.0001	1.4271	1.2520	835.1	1319	.718	1.3663	1.2643	839.2	1255	.723
2000	1.7734-3	-46.6	8.5116	29.104	675	1.0042	-1.0001	1.4442	1.2490	844.8	1361	.716	1.3703	1.2634	849.6	1281	.722
2050	1.7300-3	26.1	8.5475	29.101	686	1.0057	-1.0002	1.4640	1.2457	854.2	1407	.714	1.3742	1.2625	859.9	1306	.722
2100	1.6885-3	99.8	8.5830	29.096	697	1.0077	-1.0002	1.4872	1.2420	863.3	1458	.711	1.3778	1.2617	870.1	1331	.721
2150	1.6489-3	174.8	8.6183	29.090	708	1.0102	-1.0003	1.5146	1.2380	872.2	1516	.707	1.3813	1.2609	880.2	1356	.721
2200	1.6110-3	251.4	8.6535	29.082	718	1.0135	-1.0004	1.5470	1.2336	880.9	1581	.703	1.3845	1.2602	890.3	1381	.720
2250	1.5746-3	329.6	8.6887	29.072	729	1.0176	-1.0006	1.5854	1.2288	889.2	1656	.698	1.3876	1.2596	900.3	1406	.720
2300	1.5397-3	410.0	8.7240	29.059	739	1.0228	-1.0008	1.6306	1.2237	897.4	1743	.692	1.3904	1.2591	910.3	1430	.719
2350	1.5061-3	492.8	8.7597	29.043	750	1.0292	-1.0010	1.6837	1.2181	905.3	1843	.685	1.3931	1.2586	920.2	1454	.718
2400	1.4737-3	578.5	8.7957	29.023	760	1.0369	-1.0013	1.7454	1.2123	913.0	1960	.677	1.3956	1.2583	930.1	1478	.718
2450	1.4424-3	667.5	8.8324	28.998	770	1.0461	-1.0017	1.8163	1.2064	920.6	2093	.668	1.3979	1.2580	940.1	1502	.717
2500	1.4121-3	760.3	8.8699	28.968	780	1.0570	-1.0021	1.8967	1.2004	928.1	2247	.659	1.4001	1.2579	950.0	1525	.716
2550	1.3827-3	857.4	8.9084	28.932	790	1.0695	-1.0027	1.9866	1.1945	935.6	2421	.648	1.4021	1.2578	960.1	1549	.715
2600	1.3541-3	959.1	8.9479	28.889	800	1.0837	-1.0033	2.0855	1.1888	943.2	2618	.637	1.4039	1.2579	970.2	1573	.714
2650	1.3262-3	1066.0	8.9886	28.839	809	1.0995	-1.0040	2.1924	1.1834	950.9	2837	.625	1.4056	1.2580	980.4	1596	.713
2700	1.2990-3	1178.5	9.0306	28.781	819	1.1169	-1.0048	2.3061	1.1785	958.8	3078	.613	1.4072	1.2583	990.7	1620	.711
2750	1.2725-3	1296.7	9.0740	28.714	828	1.1356	-1.0056	2.4251	1.1742	966.9	3342	.601	1.4086	1.2588	1001.2	1643	.710
2800	1.2465-3	1421.0	9.1188	28.639	838	1.1553	-1.0066	2.5475	1.1703	975.4	3626	.588	1.4098	1.2593	1011.8	1666	.709
2850	1.2210-3	1551.5	9.1650	28.555	847	1.1760	-1.0076	2.6716	1.1670	984.1	3932	.575	1.4110	1.2600	1022.5	1690	.707
2900	1.1961-3	1688.2	9.2125	28.463	856	1.1973	-1.0087	2.7958	1.1642	993.1	4256	.562	1.4121	1.2608	1033.5	1713	.705
2950	1.1716-3	1831.1	9.2614	28.362	865	1.2190	-1.0099	2.9187	1.1619	1002.4	4600	.549	1.4130	1.2618	1044.6	1737	.703
3000	1.1477-3	1980.0	9.3115	28.252	874	1.2411	-1.0111	3.0391	1.1601	1012.0	4961	.535	1.4139	1.2628	1055.9	1762	.701

TABLE 4.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.052240; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9711-2	-1498.1	7.0100	29.114	396	1.0000	-1.0000	1.2031	1.3112	580.5	649	.734	1.2029	1.3113	580.5	649	.734
950	1.8674-2	-1437.6	7.0754	29.114	411	1.0000	-1.0000	1.2162	1.3069	595.4	682	.733	1.2158	1.3070	595.5	682	.733
1000	1.7740-2	-1376.5	7.1381	29.114	426	1.0000	-1.0000	1.2285	1.3029	610.0	714	.732	1.2279	1.3031	610.0	714	.732
1050	1.6895-2	-1314.8	7.1983	29.114	440	1.0000	-1.0000	1.2398	1.2993	624.2	746	.731	1.2390	1.2995	624.2	745	.731
1100	1.6127-2	-1252.6	7.2562	29.114	454	1.0000	-1.0000	1.2508	1.2959	638.0	777	.731	1.2495	1.2963	638.1	776	.731
1150	1.5426-2	-1189.7	7.3121	29.114	468	1.0000	-1.0000	1.2613	1.2927	651.6	808	.730	1.2595	1.2932	651.7	807	.730
1200	1.4784-2	-1126.4	7.3660	29.114	481	1.0000	-1.0000	1.2715	1.2896	664.8	838	.730	1.2690	1.2904	665.0	837	.730
1250	1.4192-2	-1062.6	7.4181	29.114	495	1.0000	-1.0000	1.2814	1.2868	677.7	869	.730	1.2781	1.2877	678.0	866	.730
1300	1.3646-2	-998.3	7.4685	29.114	508	1.0000	-1.0000	1.2911	1.2840	690.4	899	.729	1.2868	1.2852	690.8	896	.729
1350	1.3141-2	-933.5	7.5174	29.114	521	1.0000	-1.0000	1.3005	1.2814	702.9	929	.729	1.2950	1.2829	703.3	925	.729
1400	1.2672-2	-868.2	7.5649	29.114	533	1.0000	-1.0000	1.3097	1.2789	715.1	959	.729	1.3028	1.2807	715.6	954	.729
1450	1.2235-2	-802.5	7.6110	29.114	546	1.0000	-1.0000	1.3188	1.2764	727.0	989	.728	1.3102	1.2787	727.7	982	.728
1500	1.1827-2	-736.4	7.6559	29.114	558	1.0001	-1.0000	1.3277	1.2741	738.8	1018	.728	1.3173	1.2768	739.6	1010	.728
1550	1.1445-2	-669.8	7.6996	29.114	571	1.0001	-1.0000	1.3366	1.2718	750.3	1049	.727	1.3240	1.2750	751.3	1039	.728
1600	1.1088-2	-602.7	7.7421	29.114	583	1.0001	-1.0000	1.3454	1.2695	761.6	1079	.727	1.3303	1.2734	762.8	1066	.727
1650	1.0751-2	-535.2	7.7837	29.114	595	1.0002	-1.0000	1.3543	1.2673	772.8	1109	.726	1.3363	1.2718	774.1	1094	.726
1700	1.0435-2	-467.3	7.8242	29.114	607	1.0003	-1.0000	1.3633	1.2652	783.7	1140	.725	1.3420	1.2703	785.3	1122	.726
1750	1.0137-2	-398.9	7.8639	29.113	618	1.0004	-1.0000	1.3724	1.2630	794.5	1171	.725	1.3474	1.2690	796.4	1149	.725
1800	9.8552-3	-330.0	7.9027	29.113	630	1.0006	-1.0000	1.3819	1.2609	805.1	1203	.724	1.3525	1.2677	807.3	1176	.725
1850	9.5887-3	-260.7	7.9407	29.112	641	1.0009	-1.0000	1.3917	1.2587	815.5	1235	.723	1.3574	1.2665	818.0	1202	.724
1900	9.3361-3	-190.8	7.9779	29.111	653	1.0012	-1.0000	1.4021	1.2565	825.8	1268	.722	1.3619	1.2654	828.6	1229	.724
1950	9.0963-3	-120.5	8.0145	29.110	664	1.0017	-1.0001	1.4132	1.2543	835.8	1302	.721	1.3663	1.2643	839.1	1255	.723
2000	8.8685-3	-49.5	8.0504	29.109	675	1.0023	-1.0001	1.4253	1.2519	845.7	1338	.719	1.3704	1.2633	849.5	1281	.722
2050	8.6516-3	22.1	8.0858	29.107	686	1.0030	-1.0001	1.4386	1.2495	855.4	1375	.718	1.3742	1.2624	859.8	1306	.722
2100	8.4449-3	94.4	8.1206	29.104	697	1.0040	-1.0001	1.4534	1.2469	864.9	1415	.716	1.3779	1.2616	870.0	1331	.721
2150	8.2476-3	167.5	8.1550	29.101	708	1.0053	-1.0002	1.4702	1.2441	874.2	1457	.714	1.3814	1.2608	880.0	1356	.721
2200	8.0591-3	241.4	8.1890	29.097	718	1.0069	-1.0002	1.4892	1.2412	883.3	1503	.712	1.3846	1.2600	890.0	1381	.720
2250	7.8786-3	316.4	8.2227	29.092	729	1.0089	-1.0003	1.5110	1.2380	892.2	1554	.709	1.3877	1.2594	899.9	1406	.720
2300	7.7056-3	392.6	8.2562	29.086	740	1.0115	-1.0004	1.5360	1.2346	900.9	1609	.706	1.3906	1.2588	909.7	1430	.719
2350	7.5395-3	470.1	8.2895	29.077	750	1.0146	-1.0005	1.5648	1.2309	909.5	1671	.702	1.3933	1.2582	919.5	1454	.719
2400	7.3799-3	549.1	8.3228	29.067	760	1.0184	-1.0007	1.5980	1.2270	917.8	1741	.698	1.3959	1.2577	929.2	1478	.718
2450	7.2262-3	630.0	8.3561	29.055	770	1.0230	-1.0008	1.6360	1.2228	925.9	1819	.693	1.3983	1.2573	938.9	1502	.717
2500	7.0780-3	712.8	8.3896	29.040	781	1.0286	-1.0011	1.6793	1.2185	933.9	1907	.688	1.4006	1.2569	948.5	1525	.717
2550	6.9349-3	798.0	8.4234	29.022	791	1.0351	-1.0013	1.7283	1.2140	941.7	2006	.681	1.4027	1.2567	958.1	1549	.716
2600	6.7964-3	885.8	8.4574	29.000	800	1.0426	-1.0017	1.7834	1.2094	949.5	2116	.674	1.4047	1.2564	967.8	1573	.715
2650	6.6622-3	976.4	8.4920	28.974	810	1.0514	-1.0020	1.8445	1.2047	957.1	2240	.667	1.4066	1.2563	977.4	1596	.714
2700	6.5320-3	1070.3	8.5271	28.944	820	1.0612	-1.0025	1.9115	1.2001	964.8	2377	.659	1.4083	1.2562	987.1	1619	.713
2750	6.4054-3	1167.7	8.5628	28.908	830	1.0722	-1.0030	1.9842	1.1957	972.5	2528	.651	1.4099	1.2563	996.8	1642	.712
2800	6.2821-3	1268.8	8.5992	28.868	839	1.0843	-1.0035	2.0618	1.1915	980.2	2693	.642	1.4114	1.2564	1006.6	1665	.711
2850	6.1620-3	1373.9	8.6365	28.821	848	1.0974	-1.0042	2.1437	1.1875	988.1	2872	.633	1.4128	1.2566	1016.4	1688	.710
2900	6.0448-3	1483.2	8.6745	28.769	858	1.1115	-1.0049	2.2287	1.1839	996.1	3064	.624	1.4140	1.2569	1026.4	1711	.709
2950	5.9303-3	1596.8	8.7133	28.711	867	1.1262	-1.0056	2.3159	1.1806	1004.3	3269	.614	1.4152	1.2573	1036.4	1734	.708
3000	5.8183-3	1714.8	8.7530	28.646	876	1.1416	-1.0064	2.4042	1.1777	1012.7	3486	.604	1.4163	1.2578	1046.5	1756	.707

TABLE 4C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.052240; EQUIV.RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.948-5	-2429.2	7.1649	29.114	1.0508	1.840-5	30.203	130	1.000	-1.000	0.9793	1.3910	277	173	.734	200
220	1.767-5	-2405.0	7.2802	29.114	1.5546	1.671-5	30.173	141	1.000	-1.000	0.9828	1.3896	290	189	.731	220
240	1.580-5	-2344.6	7.5405	29.114	5.8680	1.517-5	29.879	149	1.000	-1.000	0.9980	1.3866	304	202	.735	240
						PRESSURE = 0.10 ATM										
200	1.948-4	-2429.5	6.5650	29.114	1.0156	1.840-4	30.205	130	1.000	-1.000	0.9792	1.3910	277	173	.734	200
220	1.771-4	-2408.7	6.6637	29.114	1.0749	1.673-4	30.202	141	1.000	-1.000	0.9816	1.3898	290	189	.730	220
240	1.619-4	-2384.3	6.7697	29.114	1.4930	1.532-4	30.173	151	1.000	-1.000	0.9854	1.3882	303	205	.727	240
260	1.470-4	-2336.5	6.9600	29.114	3.9522	1.405-4	29.971	160	1.000	-1.000	0.9969	1.3856	316	219	.730	260
280	1.267-4	-2189.9	7.5007	29.114	1.0381	1.267-4	29.114	162	1.000	-1.000	1.0381	1.3795	332	225	.749	280
						PRESSURE = 1.00 ATM										
200	1.948-3	-2429.5	5.9662	29.114	1.0121	1.841-3	30.205	130	1.000	-1.000	0.9792	1.3910	277	173	.734	200
220	1.771-3	-2409.1	6.0632	29.114	1.0272	1.673-3	30.205	141	1.000	-1.000	0.9815	1.3898	290	189	.730	220
240	1.623-3	-2388.2	6.1543	29.114	1.0784	1.534-3	30.202	152	1.000	-1.000	0.9841	1.3884	303	205	.727	240
260	1.496-3	-2364.8	6.2479	29.114	1.3245	1.415-3	30.182	162	1.000	-1.000	0.9878	1.3867	315	221	.724	260
280	1.378-3	-2313.8	6.4355	29.114	2.1108	1.309-3	30.086	171	1.000	-1.000	0.9950	1.3845	327	235	.725	280
298	1.266-3	-2262.2	6.6137	29.114	3.8448	1.219-3	29.826	178	1.000	-1.000	1.0093	1.3816	339	246	.731	298
300	1.254-3	-2254.8	6.6383	29.114	4.1287	1.210-3	29.782	178	1.000	-1.000	1.0116	1.3812	340	247	.732	300
320	1.109-3	-2148.3	6.9822	29.114	1.0453	1.109-3	29.114	182	1.000	-1.000	1.0453	1.3759	355	254	.747	320
						PRESSURE = 10.00 ATM										
200	1.946-2	-2429.5	5.3675	29.114	1.0117	1.841-2	30.205	130	1.000	-1.000	0.9792	1.3910	277	173	.734	200
220	1.769-2	-2409.2	5.4644	29.114	1.0224	1.673-2	30.205	141	1.000	-1.000	0.9815	1.3898	290	189	.730	220
240	1.622-2	-2388.6	5.5539	29.114	1.0371	1.534-2	30.205	152	1.000	-1.000	0.9840	1.3884	303	206	.726	240
260	1.497-2	-2367.5	5.6380	29.114	1.0717	1.416-2	30.203	162	1.000	-1.000	0.9869	1.3868	315	221	.724	260
280	1.389-2	-2326.2	5.7902	29.114	1.2606	1.314-2	30.193	172	1.000	-1.000	0.9904	1.3851	327	236	.722	280
298	1.302-2	-2302.1	5.8737	29.114	1.4222	1.233-2	30.167	181	1.000	-1.000	0.9946	1.3833	337	249	.722	298
300	1.294-2	-2299.4	5.8826	29.114	1.4473	1.225-2	30.163	182	1.000	-1.000	0.9951	1.3831	338	250	.722	300
320	1.204-2	-2266.7	5.9880	29.114	1.8793	1.146-2	30.079	191	1.000	-1.000	1.0023	1.3808	349	264	.725	320
340	1.115-2	-2221.2	6.1256	29.114	2.7710	1.071-2	29.882	198	1.000	-1.000	1.0147	1.3778	361	275	.730	340
360	1.017-2	-2150.3	6.3278	29.114	4.5115	9.976-3	29.468	204	1.000	-1.000	1.0372	1.3737	374	285	.740	360
380	9.337-3	-2085.2	6.5053	29.114	1.0579	9.337-3	29.114	209	1.000	-1.000	1.0579	1.3698	386	297	.747	380
						PRESSURE = 50.00 ATM										
200	9.685-2	-2429.5	4.9490	29.114	1.0117	9.203-2	30.205	130	1.000	-1.000	0.9792	1.3910	277	173	.734	200
220	8.809-2	-2409.2	5.0459	29.114	1.0220	8.366-2	30.205	141	1.000	-1.000	0.9815	1.3898	290	189	.730	220
240	8.079-2	-2388.6	5.1353	29.114	1.0335	7.669-2	30.205	152	1.000	-1.000	0.9840	1.3884	303	206	.726	240
260	7.460-2	-2367.8	5.2186	29.114	1.0493	7.079-2	30.205	162	1.000	-1.000	0.9869	1.3868	315	221	.724	260
280	6.931-2	-2327.3	5.3676	29.114	1.1865	6.573-2	30.203	172	1.000	-1.000	0.9900	1.3851	327	236	.722	280
298	6.508-2	-2305.5	5.4430	29.114	1.2199	6.172-2	30.198	181	1.000	-1.000	0.9933	1.3835	337	250	.722	298
300	6.467-2	-2303.3	5.4506	29.114	1.2250	6.133-2	30.197	182	1.000	-1.000	0.9936	1.3833	338	251	.722	300
320	6.056-2	-2278.0	5.5321	29.114	1.3119	5.747-2	30.180	192	1.000	-1.000	0.9979	1.3813	349	265	.723	320
340	5.683-2	-2250.2	5.6162	29.114	1.4822	5.402-2	30.141	201	1.000	-1.000	1.0034	1.3791	360	278	.724	340
360	5.333-2	-2217.9	5.7087	29.114	1.7833	5.088-2	30.058	209	1.000	-1.000	1.0110	1.3766	370	291	.727	360
380	4.989-2	-2177.6	5.8173	29.114	2.2772	4.795-2	29.902	216	1.000	-1.000	1.0221	1.3737	381	303	.730	380
400	4.636-2	-2124.9	5.9523	29.114	3.0502	4.514-2	29.632	223	1.000	-1.000	1.0386	1.3701	392	314	.736	400
420	4.255-2	-2052.9	6.1279	29.114	4.2425	4.236-2	29.199	227	1.000	-1.000	1.0633	1.3657	404	325	.744	420

TABLE 5A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.069653; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 29.1608;
DRY AIR; GASEOUS COMPOSITION: CO2= .13866; H2O= .11760; N2= .73493; O2= .00000; AR= .00881

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7769-3	8.8843-2	-2948.6	7.7737	7.1172	6.4607	5.8042	5.3453	1.0335	1.3810	280.6	115	153	.7795	200
210	1.6923-3	8.4613-2	-2938.3	7.8242	7.1677	6.5112	5.8546	5.3958	1.0351	1.3802	287.5	121	161	.7752	210
220	1.6153-3	8.0767-2	-2927.9	7.8724	7.2159	6.5594	5.9028	5.4439	1.0369	1.3793	294.1	126	170	.7714	220
230	1.5451-3	7.7255-2	-2917.5	7.9185	7.2620	6.6055	5.9490	5.4901	1.0387	1.3784	300.7	132	178	.7680	230
240	1.4807-3	7.4036-2	-2907.1	7.9628	7.3062	6.6497	5.9932	5.5343	1.0405	1.3774	307.0	137	186	.7652	240
250	1.4215-3	7.1075-2	-2896.7	8.0053	7.3488	6.6922	6.0357	5.5768	1.0425	1.3765	313.2	142	194	.7628	250
260	1.3668-3	6.8341-2	-2886.3	8.0462	7.3897	6.7332	6.0766	5.6178	1.0445	1.3755	319.3	147	202	.7608	260
270	1.3162-3	6.5810-2	-2875.8	8.0857	7.4291	6.7726	6.1161	5.6572	1.0465	1.3745	325.3	153	210	.7592	270
280	1.2692-3	6.3459-2	-2865.3	8.1238	7.4672	6.8107	6.1542	5.6953	1.0486	1.3734	331.1	158	218	.7580	280
290	1.2254-3	6.1271-2	-2854.8	8.1606	7.5041	6.8476	6.1910	5.7321	1.0508	1.3724	336.9	163	226	.7571	290
298	1.1919-3	5.9596-2	-2846.3	8.1897	7.5332	6.8767	6.2202	5.7613	1.0526	1.3715	341.5	167	232	.7566	298
300	1.1846-3	5.9229-2	-2844.3	8.1963	7.5397	6.8832	6.2267	5.7678	1.0530	1.3713	342.5	168	233	.7565	300
310	1.1464-3	5.7318-2	-2833.8	8.2308	7.5743	6.9178	6.2613	5.8024	1.0553	1.3702	348.0	172	240	.7565	310
320	1.1105-3	5.5527-2	-2823.2	8.2644	7.6078	6.9513	6.2948	5.8359	1.0576	1.3691	353.4	177	248	.7566	320
330	1.0769-3	5.3844-2	-2812.6	8.2969	7.6404	6.9839	6.3274	5.8685	1.0600	1.3680	358.8	182	255	.7569	330
340	1.0452-3	5.2261-2	-2802.0	8.3286	7.6721	7.0156	6.3591	5.9002	1.0624	1.3668	364.0	187	262	.7571	340
350	1.0154-3	5.0768-2	-2791.4	8.3595	7.7029	7.0464	6.3899	5.9310	1.0648	1.3657	369.2	191	269	.7573	350
360	9.8715-4	4.9357-2	-2780.7	8.3895	7.7330	7.0764	6.4199	5.9610	1.0674	1.3645	374.2	196	276	.7569	360
370	9.6047-4	4.8023-2	-2770.0	8.4188	7.7622	7.1057	6.4492	5.9903	1.0699	1.3633	379.2	200	284	.7563	370
380	9.3519-4	4.6760-2	-2759.3	8.4473	7.7908	7.1343	6.4778	6.0189	1.0725	1.3621	384.2	205	291	.7557	380
390	9.1121-4	4.5561-2	-2748.6	8.4752	7.8187	7.1622	6.5057	6.0468	1.0751	1.3609	389.0	209	298	.7551	390
400	8.8843-4	4.4422-2	-2737.8	8.5025	7.8460	7.1894	6.5329	6.0740	1.0778	1.3597	393.8	214	305	.7545	400
410	8.6676-4	4.3338-2	-2727.0	8.5291	7.8726	7.2161	6.5596	6.1007	1.0805	1.3585	398.5	218	312	.7542	410
420	8.4613-4	4.2306-2	-2716.2	8.5552	7.8987	7.2422	6.5856	6.1267	1.0833	1.3572	403.2	222	319	.7540	420
430	8.2645-4	4.1322-2	-2705.4	8.5807	7.9242	7.2677	6.6112	6.1523	1.0860	1.3560	407.7	227	326	.7538	430
440	8.0767-4	4.0383-2	-2694.5	8.6057	7.9492	7.2927	6.6362	6.1773	1.0888	1.3548	412.3	231	333	.7537	440
450	7.8972-4	3.9486-2	-2683.6	8.6302	7.9737	7.3172	6.6607	6.2018	1.0917	1.3535	416.7	235	340	.7536	450
460	7.7255-4	3.8628-2	-2672.7	8.6542	7.9977	7.3412	6.6847	6.2258	1.0945	1.3523	421.1	239	347	.7536	460
470	7.5611-4	3.7806-2	-2661.7	8.6778	8.0213	7.3648	6.7083	6.2494	1.0974	1.3510	425.5	243	354	.7536	470
480	7.4036-4	3.7018-2	-2650.7	8.7009	8.0444	7.3879	6.7314	6.2725	1.1003	1.3497	429.8	247	361	.7536	480
490	7.2525-4	3.6263-2	-2639.7	8.7237	8.0671	7.4106	6.7541	6.2952	1.1033	1.3485	434.0	251	367	.7537	490
500	7.1075-4	3.5537-2	-2628.6	8.7460	8.0895	7.4329	6.7764	6.3175	1.1063	1.3472	438.3	255	374	.7538	500
510	6.9681-4	3.4840-2	-2617.6	8.7679	8.1114	7.4549	6.7984	6.3395	1.1092	1.3460	442.4	259	381	.7536	510
520	6.8341-4	3.4170-2	-2606.5	8.7895	8.1330	7.4764	6.8199	6.3610	1.1122	1.3447	446.5	263	388	.7534	520
530	6.7051-4	3.3526-2	-2595.3	8.8107	8.1542	7.4977	6.8411	6.3823	1.1153	1.3435	450.6	267	395	.7531	530
540	6.5810-4	3.2905-2	-2584.2	8.8316	8.1751	7.5185	6.8620	6.4031	1.1183	1.3422	454.6	270	402	.7529	540
550	6.4613-4	3.2307-2	-2573.0	8.8521	8.1956	7.5391	6.8826	6.4237	1.1214	1.3410	458.6	274	409	.7526	550
560	6.3459-4	3.1730-2	-2561.7	8.8724	8.2158	7.5593	6.9028	6.4439	1.1245	1.3397	462.5	278	416	.7523	560
570	6.2346-4	3.1173-2	-2550.5	8.8923	8.2358	7.5793	6.9227	6.4638	1.1275	1.3385	466.4	282	423	.7519	570
580	6.1271-4	3.0636-2	-2539.2	8.9119	8.2554	7.5989	6.9424	6.4835	1.1306	1.3372	470.3	286	430	.7516	580
590	6.0233-4	3.0116-2	-2527.9	8.9313	8.2748	7.6182	6.9617	6.5028	1.1337	1.3360	474.1	289	437	.7512	590

TABLE 5A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.069653; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 29.1608;
DRY AIR; GASEOUS COMPOSITION: CO2= .13866; H2O= .11760; N2= .73493; O2= .00000; AR= .00881

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.9229-4	2.9614-2	-2516.5	8.9504	8.2938	7.6373	6.9808	6.5219	1.1369	1.3348	477.9	293	444	.7509	600
610	5.8258-4	2.9129-2	-2505.1	8.9692	8.3127	7.6561	6.9996	6.5407	1.1400	1.3335	481.6	297	451	.7504	610
620	5.7318-4	2.8659-2	-2493.7	8.9877	8.3312	7.6747	7.0182	6.5593	1.1431	1.3323	485.3	300	458	.7500	620
630	5.6408-4	2.8204-2	-2482.3	9.0061	8.3495	7.6930	7.0365	6.5776	1.1463	1.3311	489.0	304	465	.7495	630
640	5.5527-4	2.7764-2	-2470.8	9.0241	8.3676	7.7111	7.0546	6.5957	1.1494	1.3299	492.6	307	472	.7491	640
650	5.4673-4	2.7336-2	-2459.3	9.0420	8.3855	7.7289	7.0724	6.6135	1.1525	1.3287	496.2	311	479	.7486	650
660	5.3844-4	2.6922-2	-2447.7	9.0596	8.4031	7.7466	7.0900	6.6312	1.1557	1.3275	499.8	314	486	.7481	660
670	5.3041-4	2.6520-2	-2436.2	9.0770	8.4205	7.7640	7.1074	6.6486	1.1588	1.3263	503.4	318	493	.7477	670
680	5.2261-4	2.6130-2	-2424.6	9.0942	8.4377	7.7812	7.1246	6.6657	1.1620	1.3252	506.9	321	500	.7472	680
690	5.1503-4	2.5752-2	-2412.9	9.1112	8.4547	7.7981	7.1416	6.6827	1.1651	1.3240	510.4	325	507	.7467	690
700	5.0768-4	2.5384-2	-2401.2	9.1280	8.4714	7.8149	7.1584	6.6995	1.1682	1.3229	513.8	328	514	.7463	700
710	5.0052-4	2.5026-2	-2389.6	9.1446	8.4880	7.8315	7.1750	6.7161	1.1714	1.3217	517.3	332	521	.7458	710
720	4.9357-4	2.4679-2	-2377.8	9.1610	8.5044	7.8479	7.1914	6.7325	1.1745	1.3206	520.7	335	528	.7454	720
730	4.8681-4	2.4341-2	-2366.1	9.1772	8.5207	7.8641	7.2076	6.7487	1.1776	1.3195	524.1	339	535	.7449	730
740	4.8023-4	2.4012-2	-2354.3	9.1932	8.5367	7.8802	7.2237	6.7648	1.1807	1.3184	527.4	342	542	.7445	740
750	4.7383-4	2.3692-2	-2342.4	9.2091	8.5526	7.8961	7.2395	6.7807	1.1838	1.3173	530.7	345	549	.7441	750
760	4.6760-4	2.3380-2	-2330.6	9.2248	8.5683	7.9118	7.2552	6.7964	1.1869	1.3162	534.0	349	556	.7437	760
770	4.6152-4	2.3076-2	-2318.7	9.2403	8.5838	7.9273	7.2708	6.8119	1.1900	1.3151	537.3	352	563	.7432	770
780	4.5561-4	2.2780-2	-2306.8	9.2557	8.5992	7.9427	7.2861	6.8273	1.1931	1.3140	540.6	355	571	.7428	780
790	4.4984-4	2.2492-2	-2294.8	9.2709	8.6144	7.9579	7.3014	6.8425	1.1961	1.3130	543.8	359	578	.7425	790
800	4.4422-4	2.2211-2	-2282.9	9.2860	8.6295	7.9730	7.3164	6.8575	1.1991	1.3119	547.0	362	585	.7421	800
810	4.3873-4	2.1937-2	-2270.9	9.3009	8.6444	7.9879	7.3313	6.8725	1.2022	1.3109	550.2	365	592	.7418	810
820	4.3338-4	2.1669-2	-2258.8	9.3157	8.6592	8.0026	7.3461	6.8872	1.2052	1.3099	553.4	368	598	.7415	820
830	4.2816-4	2.1408-2	-2246.8	9.3303	8.6738	8.0173	7.3607	6.9019	1.2081	1.3089	556.6	371	605	.7412	830
840	4.2306-4	2.1153-2	-2234.7	9.3448	8.6883	8.0317	7.3752	6.9163	1.2111	1.3079	559.7	375	612	.7409	840
850	4.1809-4	2.0904-2	-2222.5	9.3591	8.7026	8.0461	7.3896	6.9307	1.2140	1.3069	562.8	378	619	.7407	850
860	4.1322-4	2.0661-2	-2210.4	9.3734	8.7168	8.0603	7.4038	6.9449	1.2170	1.3060	565.9	381	626	.7404	860
870	4.0847-4	2.0424-2	-2198.2	9.3874	8.7309	8.0744	7.4179	6.9590	1.2199	1.3050	569.0	384	633	.7402	870
880	4.0383-4	2.0192-2	-2186.0	9.4014	8.7449	8.0884	7.4318	6.9730	1.2227	1.3041	572.0	387	640	.7399	880
890	3.9930-4	1.9965-2	-2173.7	9.4152	8.7587	8.1022	7.4457	6.9868	1.2256	1.3032	575.1	390	647	.7397	890
900	3.9486-4	1.9743-2	-2161.5	9.4289	8.7724	8.1159	7.4594	7.0005	1.2284	1.3023	578.1	393	653	.7395	900
910	3.9052-4	1.9526-2	-2149.2	9.4425	8.7860	8.1295	7.4730	7.0141	1.2312	1.3014	581.1	396	660	.7392	910
920	3.8627-4	1.9314-2	-2136.9	9.4560	8.7995	8.1430	7.4864	7.0276	1.2340	1.3005	584.1	400	667	.7390	920
930	3.8212-4	1.9106-2	-2124.5	9.4694	8.8128	8.1563	7.4998	7.0409	1.2367	1.2996	587.0	403	674	.7388	930
940	3.7806-4	1.8903-2	-2112.1	9.4826	8.8261	8.1696	7.5130	7.0542	1.2394	1.2988	590.0	406	681	.7386	940
950	3.7408-4	1.8704-2	-2099.7	9.4957	8.8392	8.1827	7.5262	7.0673	1.2421	1.2979	592.9	409	687	.7384	950
960	3.7018-4	1.8509-2	-2087.3	9.5087	8.8522	8.1957	7.5392	7.0803	1.2448	1.2971	595.9	412	694	.7382	960
970	3.6636-4	1.8318-2	-2074.8	9.5217	8.8651	8.2086	7.5521	7.0932	1.2474	1.2963	598.8	415	701	.7380	970
980	3.6263-4	1.8131-2	-2062.3	9.5345	8.8779	8.2214	7.5649	7.1060	1.2500	1.2955	601.7	418	707	.7378	980
990	3.5896-4	1.7948-2	-2049.8	9.5472	8.8907	8.2341	7.5776	7.1187	1.2525	1.2947	604.5	421	714	.7376	990

TABLE 5A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.069653; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 29.1608;
DRY AIR; GASEOUS COMPOSITION: CO2= .13866; H2O= .11760; N2= .73493; O2= .00000; AR= .00881

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5537-4	1.7769-2	-2037.3	9.5598	8.9033	8.2467	7.5902	7.1313	1.2550	1.2940	607.4	423	721	.7375	1000
1050	3.3845-4	1.6923-2	-1974.2	9.6213	8.9648	8.3083	7.6517	7.1928	1.2668	1.2904	621.6	438	753	.7366	1050
1100	3.2307-4	1.6153-2	-1910.6	9.6805	9.0240	8.3674	7.7109	7.2520	1.2781	1.2871	635.4	452	786	.7358	1100
1150	3.0902-4	1.5451-2	-1846.4	9.7375	9.0810	8.4245	7.7680	7.3091	1.2889	1.2841	648.9	466	817	.7351	1150
1200	2.9614-4	1.4807-2	-1781.7	9.7926	9.1361	8.4796	7.8231	7.3642	1.2991	1.2812	662.1	480	849	.7345	1200
1250	2.8430-4	1.4215-2	-1716.5	9.8458	9.1893	8.5328	7.8763	7.4174	1.3088	1.2785	675.0	493	880	.7339	1250
1300	2.7336-4	1.3668-2	-1650.8	9.8974	9.2408	8.5843	7.9278	7.4689	1.3181	1.2760	687.7	507	911	.7334	1300
1350	2.6324-4	1.3162-2	-1584.7	9.9473	9.2908	8.6342	7.9777	7.5188	1.3269	1.2737	700.2	520	941	.7329	1350
1400	2.5384-4	1.2692-2	-1518.2	9.9957	9.3392	8.6826	8.0261	7.5672	1.3352	1.2715	712.4	533	971	.7323	1400
1450	2.4508-4	1.2254-2	-1451.2	10.0427	9.3862	8.7296	8.0731	7.6142	1.3432	1.2695	724.5	546	1001	.7318	1450
1500	2.3692-4	1.1846-2	-1383.9	10.0883	9.4318	8.7753	8.1188	7.6599	1.3507	1.2676	736.3	558	1031	.7313	1500
1550	2.2927-4	1.1464-2	-1316.1	10.1327	9.4762	8.8197	8.1632	7.7043	1.3579	1.2658	747.9	571	1060	.7306	1550
1600	2.2211-4	1.1105-2	-1248.1	10.1760	9.5194	8.8629	8.2064	7.7475	1.3647	1.2641	759.4	583	1090	.7300	1600
1650	2.1538-4	1.0769-2	-1179.7	10.2181	9.5615	8.9050	8.2485	7.7896	1.3711	1.2626	770.7	595	1119	.7293	1650
1700	2.0904-4	1.0452-2	-1111.0	10.2591	9.6026	8.9460	8.2895	7.8306	1.3772	1.2611	781.8	607	1148	.7286	1700
1750	2.0307-4	1.0154-2	-1042.0	10.2991	9.6426	8.9860	8.3295	7.8706	1.3829	1.2597	792.8	619	1176	.7279	1750
1800	1.9743-4	9.8715-3	-972.7	10.3381	9.6816	9.0251	8.3686	7.9097	1.3884	1.2584	803.7	631	1204	.7272	1800
1850	1.9209-4	9.6047-3	-903.1	10.3762	9.7197	9.0632	8.4067	7.9478	1.3936	1.2572	814.3	643	1232	.7265	1850
1900	1.8704-4	9.3519-3	-833.3	10.4135	9.7569	9.1004	8.4439	7.9850	1.3985	1.2561	824.9	654	1260	.7258	1900
1950	1.8224-4	9.1121-3	-763.3	10.4498	9.7933	9.1368	8.4803	8.0214	1.4031	1.2550	835.3	665	1288	.7251	1950
2000	1.7769-4	8.8843-3	-693.0	10.4854	9.8289	9.1724	8.5159	8.0570	1.4075	1.2540	845.6	677	1315	.7243	2000
2050	1.7335-4	8.6676-3	-622.5	10.5202	9.8637	9.2072	8.5507	8.0918	1.4116	1.2531	855.8	688	1342	.7237	2050
2100	1.6923-4	8.4613-3	-551.9	10.5543	9.8978	9.2413	8.5847	8.1258	1.4155	1.2522	865.9	699	1368	.7230	2100
2150	1.6529-4	8.2645-3	-481.0	10.5876	9.9311	9.2746	8.6181	8.1592	1.4192	1.2514	875.9	710	1395	.7223	2150
2200	1.6153-4	8.0767-3	-410.0	10.6203	9.9638	9.3073	8.6508	8.1919	1.4227	1.2506	885.7	721	1421	.7216	2200
2250	1.5794-4	7.8972-3	-338.7	10.6523	9.9958	9.3393	8.6828	8.2239	1.4260	1.2499	895.5	732	1447	.7209	2250
2300	1.5451-4	7.7255-3	-267.4	10.6837	10.0272	9.3707	8.7141	8.2553	1.4292	1.2492	905.1	742	1473	.7202	2300
2350	1.5122-4	7.5611-3	-195.8	10.7145	10.0579	9.4014	8.7449	8.2860	1.4321	1.2486	914.7	753	1499	.7194	2350
2400	1.4807-4	7.4036-3	-124.1	10.7446	10.0881	9.4316	8.7751	8.3162	1.4349	1.2480	924.1	763	1524	.7186	2400
2450	1.4505-4	7.2525-3	-52.3	10.7743	10.1177	9.4612	8.8047	8.3458	1.4376	1.2474	933.5	774	1550	.7178	2450
2500	1.4215-4	7.1075-3	19.6	10.8033	10.1468	9.4903	8.8338	8.3749	1.4402	1.2469	942.7	784	1575	.7170	2500
2550	1.3936-4	6.9681-3	91.7	10.8319	10.1754	9.5188	8.8623	8.4034	1.4426	1.2463	951.9	794	1600	.7160	2550
2600	1.3668-4	6.8341-3	163.9	10.8599	10.2034	9.5469	8.8904	8.4315	1.4449	1.2459	961.0	804	1625	.7151	2600
2650	1.3410-4	6.7051-3	236.2	10.8875	10.2309	9.5744	8.9179	8.4590	1.4470	1.2454	970.0	814	1650	.7142	2650
2700	1.3162-4	6.5810-3	308.6	10.9145	10.2580	9.6015	8.9450	8.4861	1.4491	1.2449	979.0	824	1675	.7133	2700
2750	1.2923-4	6.4613-3	381.1	10.9411	10.2846	9.6281	8.9716	8.5127	1.4511	1.2445	987.8	834	1699	.7124	2750
2800	1.2692-4	6.3459-3	453.7	10.9673	10.3108	9.6543	8.9977	8.5388	1.4530	1.2441	996.6	844	1724	.7115	2800
2850	1.2469-4	6.2346-3	526.4	10.9930	10.3365	9.6800	9.0235	8.5646	1.4549	1.2437	1005.3	854	1748	.7107	2850
2900	1.2254-4	6.1271-3	599.2	11.0183	10.3618	9.7053	9.0488	8.5899	1.4567	1.2434	1013.9	863	1772	.7099	2900
2950	1.2047-4	6.0233-3	672.0	11.0433	10.3867	9.7302	9.0737	8.6148	1.4584	1.2430	1022.5	873	1796	.7091	2950
3000	1.1846-4	5.9229-3	745.0	11.0678	10.4113	9.7547	9.0982	8.6393	1.4600	1.2427	1031.0	883	1819	.7083	3000

TABLE 5.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.069653; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9486-6	-2161.5	9.4289	29.161	393	1.0000	-1.0000	1.2284	1.3023	578.1	653	.739	1.2284	1.3023	578.1	653	.739
950	3.7408-6	-2099.7	9.4957	29.161	409	1.0000	-1.0000	1.2421	1.2979	592.9	687	.738	1.2421	1.2979	592.9	687	.738
1000	3.5537-6	-2037.3	9.5598	29.161	423	1.0000	-1.0000	1.2551	1.2940	607.4	721	.737	1.2550	1.2940	607.4	721	.737
1050	3.3845-6	-1974.2	9.6213	29.161	438	1.0000	-1.0000	1.2671	1.2904	621.5	754	.736	1.2668	1.2904	621.6	753	.737
1100	3.2307-6	-1910.6	9.6805	29.161	452	1.0000	-1.0000	1.2786	1.2870	635.3	786	.736	1.2781	1.2871	635.4	786	.736
1150	3.0902-6	-1846.4	9.7376	29.161	466	1.0001	-1.0000	1.2900	1.2838	648.8	818	.735	1.2889	1.2841	648.9	817	.735
1200	2.9614-6	-1781.6	9.7927	29.161	480	1.0001	-1.0000	1.3013	1.2807	662.0	851	.734	1.2991	1.2812	662.1	849	.734
1250	2.8429-6	-1716.2	9.8461	29.160	493	1.0003	-1.0000	1.3131	1.2776	674.8	884	.733	1.3088	1.2785	675.0	880	.734
1300	2.7336-6	-1650.3	9.8978	29.160	507	1.0005	-1.0000	1.3258	1.2743	687.3	917	.732	1.3181	1.2760	687.7	911	.733
1350	2.6322-6	-1583.6	9.9481	29.159	520	1.0009	-1.0000	1.3404	1.2708	699.4	953	.731	1.3269	1.2737	700.2	941	.733
1400	2.5381-6	-1516.2	9.9972	29.158	533	1.0016	-1.0000	1.3578	1.2669	711.2	992	.729	1.3352	1.2716	712.5	971	.732
1450	2.4504-6	-1447.8	10.0452	29.156	545	1.0027	-1.0001	1.3795	1.2623	722.5	1035	.727	1.3432	1.2695	724.5	1001	.732
1500	2.3684-6	-1378.1	10.0924	29.152	558	1.0044	-1.0001	1.4072	1.2568	733.3	1084	.724	1.3507	1.2677	736.4	1031	.731
1550	2.2916-6	-1306.9	10.1391	29.147	571	1.0068	-1.0002	1.4433	1.2503	743.5	1143	.721	1.3578	1.2660	748.2	1061	.730
1600	2.2194-6	-1233.6	10.1857	29.139	583	1.0104	-1.0002	1.4904	1.2425	753.2	1214	.716	1.3645	1.2644	759.8	1090	.730
1650	2.1513-6	-1157.6	10.2324	29.128	595	1.0154	-1.0004	1.5514	1.2335	762.2	1301	.709	1.3708	1.2630	771.3	1119	.729
1700	2.0869-6	-1078.2	10.2798	29.111	607	1.0222	-1.0006	1.6300	1.2233	770.7	1411	.701	1.3768	1.2617	782.7	1148	.728
1750	2.0257-6	-994.3	10.3285	29.089	619	1.0314	-1.0008	1.7300	1.2120	778.6	1550	.691	1.3824	1.2607	794.1	1176	.727
1800	1.9674-6	-904.7	10.3789	29.059	630	1.0435	-1.0012	1.8554	1.2001	786.2	1725	.678	1.3876	1.2598	805.5	1205	.726
1850	1.9115-6	-808.2	10.4318	29.018	642	1.0590	-1.0016	2.0104	1.1879	793.5	1948	.662	1.3924	1.2591	816.9	1233	.725
1900	1.8578-6	-703.1	10.4878	28.965	653	1.0788	-1.0023	2.1989	1.1760	800.9	2230	.643	1.3969	1.2586	828.5	1260	.723
1950	1.8060-6	-587.7	10.5478	28.897	664	1.1033	-1.0030	2.4246	1.1647	808.4	2586	.622	1.4010	1.2584	840.3	1288	.722
2000	1.7556-6	-460.0	10.6124	28.811	674	1.1331	-1.0040	2.6903	1.1543	816.2	3030	.599	1.4047	1.2586	852.3	1316	.720
2050	1.7064-6	-318.0	10.6826	28.704	685	1.1690	-1.0053	2.9983	1.1451	824.6	3583	.573	1.4081	1.2590	864.6	1343	.718
2100	1.6582-6	-159.5	10.7589	28.574	695	1.2112	-1.0068	3.3496	1.1372	833.6	4263	.546	1.4112	1.2598	877.4	1371	.715
2150	1.6107-6	17.7	10.8423	28.416	705	1.2602	-1.0086	3.7447	1.1305	843.3	5091	.518	1.4139	1.2609	890.6	1400	.712
2200	1.5637-6	215.7	10.9333	28.229	714	1.3162	-1.0108	4.1831	1.1250	853.8	6088	.491	1.4164	1.2625	904.5	1429	.708
2250	1.5171-6	436.7	11.0326	28.010	723	1.3794	-1.0134	4.6641	1.1207	865.2	7268	.464	1.4187	1.2646	919.0	1460	.703
2300	1.4707-6	682.8	11.1408	27.756	732	1.4499	-1.0164	5.1867	1.1174	877.4	8636	.440	1.4208	1.2672	934.4	1493	.697
2350	1.4243-6	956.1	11.2583	27.466	741	1.5275	-1.0198	5.7489	1.1149	890.6	10183	.418	1.4229	1.2702	950.6	1529	.690
2400	1.3781-6	1258.3	11.3855	27.139	749	1.6115	-1.0237	6.3464	1.1132	904.7	11874	.400	1.4251	1.2739	967.8	1568	.681
2450	1.3318-6	1591.1	11.5228	26.775	757	1.7005	-1.0280	6.9691	1.1122	919.9	13640	.387	1.4273	1.2781	986.1	1611	.671
2500	1.2857-6	1955.3	11.6699	26.374	765	1.7914	-1.0325	7.5977	1.1119	936.1	15380	.378	1.4298	1.2828	1005.5	1659	.659
2550	1.2398-6	2350.5	11.8264	25.941	773	1.8794	-1.0372	8.1994	1.1122	953.4	16953	.374	1.4325	1.2882	1026.1	1712	.647
2600	1.1944-6	2774.0	11.9909	25.482	781	1.9572	-1.0416	8.7259	1.1131	971.8	18198	.374	1.4354	1.2942	1047.8	1770	.633
2650	1.1500-6	3220.8	12.1610	25.007	789	2.0164	-1.0454	9.1162	1.1148	991.1	18957	.379	1.4386	1.3006	1070.5	1832	.619
2700	1.1071-6	3682.3	12.3336	24.528	797	2.0482	-1.0480	9.3074	1.1171	1011.1	19110	.388	1.4420	1.3073	1093.8	1897	.605
2750	1.0662-6	4147.4	12.5042	24.060	805	2.0459	-1.0490	9.2511	1.1202	1031.8	18616	.400	1.4455	1.3142	1117.5	1963	.593
2800	1.0279-6	4603.0	12.6685	23.618	813	2.0077	-1.0484	8.9317	1.1242	1052.7	17535	.414	1.4490	1.3209	1141.1	2028	.581
2850	9.9261-7	5036.6	12.8219	23.213	822	1.9374	-1.0460	8.3758	1.1293	1073.7	16011	.430	1.4523	1.3274	1164.0	2090	.571
2900	9.6048-7	5437.7	12.9615	22.856	831	1.8435	-1.0423	7.6472	1.1355	1094.5	14241	.446	1.4555	1.3332	1185.9	2149	.563
2950	9.3152-7	5799.8	13.0853	22.549	840	1.7369	-1.0378	6.8276	1.1430	1115.0	12416	.462	1.4584	1.3384	1206.6	2204	.556
3000	9.0555-7	6120.3	13.1931	22.292	849	1.6278	-1.0329	5.9956	1.1520	1135.4	10685	.476	1.4610	1.3428	1225.8	2254	.550

TABLE 5.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.069653; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9486-5	-2161.5	8.7724	29.161	393	1.0000	-1.0000	1.2284	1.3023	578.1	653	.739	1.2284	1.3023	578.1	653	.739
950	3.7408-5	-2099.7	8.8392	29.161	409	1.0000	-1.0000	1.2421	1.2979	592.9	687	.738	1.2421	1.2979	592.9	687	.738
1000	3.5537-5	-2037.3	8.9033	29.161	423	1.0000	-1.0000	1.2550	1.2940	607.4	721	.737	1.2550	1.2940	607.4	721	.737
1050	3.3845-5	-1974.2	8.9648	29.161	438	1.0000	-1.0000	1.2669	1.2904	621.5	753	.737	1.2668	1.2904	621.6	753	.737
1100	3.2307-5	-1910.6	9.0240	29.161	452	1.0000	-1.0000	1.2784	1.2871	635.4	786	.736	1.2781	1.2871	635.4	786	.736
1150	3.0902-5	-1846.4	9.0811	29.161	466	1.0000	-1.0000	1.2894	1.2839	648.8	818	.735	1.2889	1.2841	648.9	817	.735
1200	2.9614-5	-1781.7	9.1361	29.161	480	1.0001	-1.0000	1.3001	1.2809	662.0	850	.734	1.2991	1.2812	662.1	849	.735
1250	2.8430-5	-1716.4	9.1894	29.161	493	1.0001	-1.0000	1.3108	1.2781	674.9	882	.734	1.3088	1.2785	675.0	880	.734
1300	2.7336-5	-1650.6	9.2411	29.160	507	1.0002	-1.0000	1.3218	1.2752	687.5	914	.733	1.3181	1.2760	687.7	911	.733
1350	2.6323-5	-1584.2	9.2912	29.160	520	1.0004	-1.0000	1.3333	1.2723	699.8	947	.732	1.3269	1.2737	700.2	941	.733
1400	2.5383-5	-1517.2	9.3399	29.159	533	1.0008	-1.0000	1.3459	1.2693	711.8	981	.731	1.3352	1.2715	712.4	971	.732
1450	2.4506-5	-1449.6	9.3873	29.158	546	1.0013	-1.0000	1.3604	1.2660	723.5	1017	.730	1.3432	1.2695	724.5	1001	.732
1500	2.3688-5	-1381.1	9.4337	29.157	558	1.0020	-1.0000	1.3775	1.2623	734.8	1056	.728	1.3507	1.2676	736.4	1031	.731
1550	2.2922-5	-1311.8	9.4792	29.154	571	1.0032	-1.0001	1.3982	1.2582	745.8	1099	.726	1.3578	1.2659	748.0	1061	.731
1600	2.2203-5	-1241.2	9.5240	29.151	583	1.0048	-1.0001	1.4240	1.2533	756.3	1147	.724	1.3646	1.2643	759.6	1090	.730
1650	2.1526-5	-1169.3	9.5683	29.145	595	1.0072	-1.0002	1.4561	1.2477	766.4	1203	.721	1.3710	1.2628	771.0	1119	.729
1700	2.0888-5	-1095.5	9.6124	29.138	607	1.0103	-1.0003	1.4963	1.2413	776.0	1267	.717	1.3770	1.2614	782.2	1148	.728
1750	2.0284-5	-1019.5	9.6564	29.127	619	1.0146	-1.0004	1.5463	1.2340	785.1	1344	.712	1.3827	1.2602	793.4	1176	.728
1800	1.9711-5	-940.7	9.7008	29.113	631	1.0202	-1.0005	1.6081	1.2259	793.9	1437	.706	1.3880	1.2591	804.5	1204	.727
1850	1.9166-5	-858.4	9.7459	29.094	642	1.0274	-1.0008	1.6838	1.2171	802.2	1548	.699	1.3930	1.2581	815.6	1232	.726
1900	1.8645-5	-772.0	9.7920	29.070	653	1.0366	-1.0010	1.7753	1.2078	810.2	1682	.690	1.3977	1.2573	826.6	1260	.725
1950	1.8147-5	-680.6	9.8394	29.038	665	1.0480	-1.0014	1.8847	1.1983	818.0	1844	.679	1.4020	1.2566	837.6	1288	.724
2000	1.7669-5	-583.2	9.8888	28.998	676	1.0620	-1.0019	2.0137	1.1887	825.6	2039	.667	1.4061	1.2562	848.7	1315	.722
2050	1.7208-5	-478.9	9.9403	28.947	686	1.0790	-1.0024	2.1638	1.1794	833.3	2274	.653	1.4098	1.2559	859.9	1342	.721
2100	1.6763-5	-366.5	9.9944	28.886	697	1.0991	-1.0031	2.3359	1.1706	841.2	2555	.637	1.4132	1.2558	871.2	1368	.720
2150	1.6330-5	-244.9	10.0516	28.811	707	1.1225	-1.0040	2.5307	1.1624	849.3	2890	.619	1.4162	1.2559	882.8	1395	.718
2200	1.5910-5	-113.0	10.1123	28.721	718	1.1496	-1.0050	2.7481	1.1551	857.7	3287	.600	1.4190	1.2563	894.5	1421	.717
2250	1.5499-5	30.3	10.1767	28.615	728	1.1804	-1.0062	2.9873	1.1486	866.5	3753	.579	1.4216	1.2569	906.5	1448	.714
2300	1.5096-5	186.0	10.2451	28.491	737	1.2148	-1.0075	3.2472	1.1430	875.9	4298	.557	1.4238	1.2578	918.8	1475	.712
2350	1.4701-5	355.3	10.3179	28.348	747	1.2529	-1.0091	3.5263	1.1382	885.7	4930	.534	1.4258	1.2590	931.5	1502	.709
2400	1.4312-5	539.0	10.3952	28.186	756	1.2946	-1.0109	3.8228	1.1343	896.1	5655	.511	1.4277	1.2604	944.6	1530	.706
2450	1.3929-5	737.8	10.4772	28.002	765	1.3398	-1.0129	4.1351	1.1312	907.1	6480	.488	1.4294	1.2622	958.2	1559	.702
2500	1.3550-5	952.7	10.5641	27.797	774	1.3884	-1.0152	4.4619	1.1287	918.7	7407	.466	1.4309	1.2643	972.3	1590	.697
2550	1.3176-5	1184.3	10.6557	27.570	783	1.4403	-1.0177	4.8018	1.1268	930.9	8431	.446	1.4324	1.2667	987.0	1622	.691
2600	1.2806-5	1433.1	10.7524	27.321	791	1.4953	-1.0205	5.1533	1.1255	943.7	9543	.427	1.4339	1.2694	1002.2	1657	.685
2650	1.2439-5	1699.7	10.8540	27.050	800	1.5529	-1.0235	5.5143	1.1247	957.2	10719	.411	1.4354	1.2725	1018.1	1694	.678
2700	1.2077-5	1984.6	10.9604	26.757	808	1.6125	-1.0268	5.8805	1.1244	971.3	11928	.398	1.4370	1.2759	1034.6	1734	.670
2750	1.1718-5	2287.8	11.0717	26.443	816	1.6728	-1.0302	6.2447	1.1245	986.0	13122	.388	1.4387	1.2797	1051.9	1777	.661
2800	1.1364-5	2608.9	11.1874	26.111	824	1.7319	-1.0337	6.5958	1.1250	1001.5	14246	.382	1.4406	1.2838	1069.9	1823	.651
2850	1.1016-5	2946.9	11.3070	25.762	832	1.7873	-1.0372	6.9181	1.1259	1017.6	15233	.378	1.4426	1.2882	1088.5	1873	.641
2900	1.0674-5	3299.9	11.4298	25.400	840	1.8357	-1.0405	7.1918	1.1272	1034.4	16015	.377	1.4448	1.2929	1107.9	1925	.631
2950	1.0341-5	3664.9	11.5546	25.032	849	1.8735	-1.0433	7.3948	1.1291	1051.8	16529	.380	1.4471	1.2979	1127.7	1981	.620
3000	1.0018-5	4037.8	11.6799	24.661	857	1.8973	-1.0456	7.5057	1.1314	1069.7	16731	.384	1.4495	1.3031	1148.0	2039	.609

TABLE 5.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.069653; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO W/CM K	PRAN	CP	GAM	VS	COND MICRO W/CM K	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S			J/G K		M/S		
900	3.9486-4	-2161.5	8.1159	29.161	393	1.0000	-1.0000	1.2284	1.3023	578.1	653	.739	1.2284	1.3023	578.1	653	.739
950	3.7408-4	-2099.7	8.1827	29.161	409	1.0000	-1.0000	1.2421	1.2979	592.9	687	.738	1.2421	1.2979	592.9	687	.738
1000	3.5537-4	-2037.3	8.2467	29.161	423	1.0000	-1.0000	1.2550	1.2940	607.4	721	.737	1.2550	1.2940	607.4	721	.737
1050	3.3845-4	-1974.2	8.3083	29.161	438	1.0000	-1.0000	1.2669	1.2904	621.6	753	.737	1.2668	1.2904	621.6	753	.737
1100	3.2307-4	-1910.6	8.3675	29.161	452	1.0000	-1.0000	1.2782	1.2871	635.4	786	.736	1.2781	1.2871	635.4	786	.736
1150	3.0902-4	-1846.4	8.4245	29.161	466	1.0000	-1.0000	1.2891	1.2840	648.9	818	.735	1.2889	1.2841	648.9	817	.735
1200	2.9614-4	-1781.7	8.4796	29.161	480	1.0000	-1.0000	1.2996	1.2811	662.1	849	.734	1.2991	1.2812	662.1	849	.735
1250	2.8430-4	-1716.5	8.5329	29.161	493	1.0001	-1.0000	1.3098	1.2783	675.0	881	.734	1.3088	1.2785	675.0	880	.734
1300	2.7336-4	-1650.7	8.5844	29.161	507	1.0001	-1.0000	1.3198	1.2756	687.6	912	.733	1.3181	1.2760	687.7	911	.733
1350	2.6324-4	-1584.5	8.6344	29.160	520	1.0002	-1.0000	1.3299	1.2730	700.0	944	.732	1.3269	1.2737	700.2	941	.733
1400	2.5383-4	-1517.7	8.6830	29.160	533	1.0004	-1.0000	1.3404	1.2704	712.1	976	.732	1.3352	1.2715	712.4	971	.732
1450	2.4507-4	-1450.4	8.7302	29.160	546	1.0006	-1.0000	1.3514	1.2678	724.0	1009	.731	1.3432	1.2695	724.5	1001	.732
1500	2.3690-4	-1382.6	8.7762	29.159	558	1.0010	-1.0000	1.3635	1.2650	735.6	1043	.730	1.3507	1.2676	736.3	1031	.731
1550	2.2925-4	-1314.1	8.8211	29.158	571	1.0015	-1.0000	1.3772	1.2621	746.9	1079	.729	1.3579	1.2658	748.0	1061	.731
1600	2.2207-4	-1244.8	8.8651	29.156	583	1.0023	-1.0001	1.3930	1.2588	757.9	1117	.727	1.3646	1.2642	759.5	1090	.730
1650	2.1532-4	-1174.7	8.9082	29.153	595	1.0034	-1.0001	1.4116	1.2552	768.5	1158	.725	1.3710	1.2626	770.8	1119	.729
1700	2.0897-4	-1103.6	8.9507	29.150	607	1.0049	-1.0001	1.4339	1.2511	778.9	1204	.723	1.3771	1.2612	782.0	1148	.728
1750	2.0296-4	-1031.2	8.9927	29.145	619	1.0069	-1.0002	1.4608	1.2466	788.9	1255	.721	1.3828	1.2599	793.1	1176	.728
1800	1.9728-4	-957.4	9.0342	29.138	631	1.0095	-1.0002	1.4931	1.2415	798.5	1312	.718	1.3882	1.2587	804.1	1204	.727
1850	1.9189-4	-881.8	9.0757	29.130	642	1.0129	-1.0003	1.5318	1.2358	807.8	1377	.714	1.3933	1.2576	814.9	1232	.726
1900	1.8676-4	-804.1	9.1171	29.118	654	1.0172	-1.0005	1.5781	1.2296	816.8	1453	.710	1.3981	1.2567	825.7	1260	.725
1950	1.8188-4	-723.9	9.1588	29.103	665	1.0226	-1.0006	1.6329	1.2229	825.4	1540	.705	1.4026	1.2558	836.4	1288	.724
2000	1.7722-4	-640.7	9.2009	29.084	676	1.0292	-1.0009	1.6972	1.2159	833.8	1641	.699	1.4068	1.2550	847.1	1315	.724
2050	1.7275-4	-554.0	9.2437	29.060	687	1.0373	-1.0011	1.7720	1.2086	841.9	1757	.693	1.4107	1.2544	857.8	1342	.723
2100	1.6847-4	-463.3	9.2874	29.031	698	1.0469	-1.0015	1.8580	1.2012	850.0	1893	.685	1.4143	1.2539	868.4	1368	.722
2150	1.6435-4	-368.0	9.3323	28.995	709	1.0582	-1.0019	1.9558	1.1938	857.9	2049	.676	1.4177	1.2536	879.1	1394	.721
2200	1.6038-4	-267.5	9.3785	28.952	719	1.0715	-1.0023	2.0658	1.1866	865.8	2229	.667	1.4208	1.2533	889.9	1420	.720
2250	1.5654-4	-161.2	9.4263	28.901	730	1.0867	-1.0029	2.1881	1.1797	873.9	2436	.655	1.4237	1.2533	900.7	1446	.718
2300	1.5281-4	-48.5	9.4758	28.840	740	1.1039	-1.0036	2.3226	1.1733	882.0	2673	.643	1.4263	1.2533	911.6	1472	.717
2350	1.4920-4	71.3	9.5273	28.770	750	1.1232	-1.0043	2.4686	1.1674	890.4	2942	.629	1.4286	1.2536	922.7	1498	.715
2400	1.4568-4	198.6	9.5809	28.689	760	1.1446	-1.0052	2.6254	1.1620	899.0	3246	.615	1.4308	1.2540	933.9	1523	.714
2450	1.4225-4	334.0	9.6367	28.597	770	1.1679	-1.0062	2.7919	1.1572	907.9	3589	.599	1.4327	1.2546	945.3	1549	.712
2500	1.3889-4	477.9	9.6949	28.493	779	1.1932	-1.0073	2.9667	1.1531	917.2	3974	.582	1.4344	1.2554	957.0	1575	.710
2550	1.3562-4	630.7	9.7554	28.377	789	1.2203	-1.0085	3.1484	1.1495	926.7	4403	.564	1.4360	1.2563	968.9	1601	.707
2600	1.3240-4	792.8	9.8183	28.248	798	1.2490	-1.0099	3.3356	1.1465	936.7	4879	.546	1.4374	1.2575	981.0	1628	.704
2650	1.2925-4	964.4	9.8837	28.106	807	1.2792	-1.0113	3.5269	1.1441	947.0	5403	.527	1.4387	1.2588	993.4	1655	.701
2700	1.2616-4	1145.6	9.9514	27.952	816	1.3109	-1.0129	3.7212	1.1421	957.7	5977	.508	1.4398	1.2604	1006.1	1683	.698
2750	1.2313-4	1336.5	10.0215	27.785	825	1.3438	-1.0147	3.9177	1.1406	968.8	6602	.489	1.4409	1.2621	1019.1	1712	.694
2800	1.2015-4	1537.4	10.0939	27.605	833	1.3779	-1.0165	4.1157	1.1395	980.3	7274	.472	1.4420	1.2640	1032.5	1741	.690
2850	1.1721-4	1748.1	10.1685	27.412	842	1.4132	-1.0185	4.3148	1.1388	992.2	7990	.455	1.4430	1.2661	1046.2	1773	.685
2900	1.1433-4	1968.8	10.2452	27.207	850	1.4495	-1.0207	4.5146	1.1384	1004.4	8743	.439	1.4441	1.2684	1060.2	1805	.680
2950	1.1150-4	2199.6	10.3241	26.990	859	1.4867	-1.0229	4.7143	1.1383	1017.1	9522	.425	1.4451	1.2709	1074.7	1839	.675
3000	1.0871-4	2440.3	10.4050	26.762	867	1.5245	-1.0253	4.9126	1.1385	1030.1	10314	.413	1.4463	1.2736	1089.5	1875	.669

TABLE 5.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.069653; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.9486-3	-2161.5	7.4594	29.161	393	1.0000	-1.0000	1.2284	1.3023	578.1	653 .739	1.2284	1.3023	578.1	653 .739
950	3.7408-3	-2099.7	7.5262	29.161	409	1.0000	-1.0000	1.2421	1.2979	592.9	687 .738	1.2421	1.2979	592.9	687 .738
1000	3.5537-3	-2037.3	7.5902	29.161	423	1.0000	-1.0000	1.2550	1.2940	607.4	721 .737	1.2550	1.2940	607.4	721 .737
1050	3.3845-3	-1974.2	7.6517	29.161	438	1.0000	-1.0000	1.2669	1.2904	621.6	753 .737	1.2668	1.2904	621.6	753 .737
1100	3.2307-3	-1910.6	7.7109	29.161	452	1.0000	-1.0000	1.2782	1.2871	635.4	786 .736	1.2781	1.2871	635.4	786 .736
1150	3.0902-3	-1846.4	7.7680	29.161	466	1.0000	-1.0000	1.2890	1.2840	648.9	817 .735	1.2889	1.2841	648.9	817 .735
1200	2.9614-3	-1781.7	7.8231	29.161	480	1.0000	-1.0000	1.2993	1.2811	662.1	849 .734	1.2991	1.2812	662.1	849 .735
1250	2.8430-3	-1716.5	7.8763	29.161	493	1.0000	-1.0000	1.3093	1.2784	675.0	880 .734	1.3088	1.2785	675.0	880 .734
1300	2.7336-3	-1650.8	7.9278	29.161	507	1.0001	-1.0000	1.3189	1.2758	687.7	911 .733	1.3181	1.2760	687.7	911 .733
1350	2.6324-3	-1584.6	7.9778	29.161	520	1.0001	-1.0000	1.3284	1.2734	700.1	942 .733	1.3269	1.2737	700.2	941 .733
1400	2.5383-3	-1518.0	8.0263	29.160	533	1.0002	-1.0000	1.3377	1.2710	712.3	974 .732	1.3352	1.2715	712.4	971 .732
1450	2.4508-3	-1450.8	8.0734	29.160	546	1.0003	-1.0000	1.3472	1.2687	724.2	1005 .731	1.3432	1.2695	724.5	1001 .732
1500	2.3691-3	-1383.2	8.1192	29.160	558	1.0005	-1.0000	1.3569	1.2663	735.9	1037 .731	1.3507	1.2676	736.3	1031 .731
1550	2.2926-3	-1315.1	8.1639	29.159	571	1.0007	-1.0000	1.3672	1.2640	747.4	1069 .730	1.3579	1.2658	748.0	1060 .731
1600	2.2209-3	-1246.5	8.2075	29.158	583	1.0011	-1.0000	1.3783	1.2615	758.6	1103 .729	1.3646	1.2641	759.4	1090 .730
1650	2.1535-3	-1177.3	8.2501	29.157	595	1.0016	-1.0000	1.3907	1.2589	769.6	1138 .727	1.3711	1.2626	770.8	1119 .729
1700	2.0901-3	-1107.4	8.2918	29.156	607	1.0023	-1.0001	1.4046	1.2561	780.4	1174 .726	1.3771	1.2612	781.9	1148 .729
1750	2.0302-3	-1036.8	8.3327	29.153	619	1.0032	-1.0001	1.4205	1.2531	790.8	1213 .725	1.3829	1.2598	792.9	1176 .728
1800	1.9736-3	-965.3	8.3730	29.150	631	1.0045	-1.0001	1.4389	1.2498	801.0	1255 .723	1.3883	1.2586	803.8	1204 .727
1850	1.9200-3	-892.8	8.4127	29.146	642	1.0061	-1.0002	1.4603	1.2462	811.0	1301 .721	1.3934	1.2574	814.6	1232 .726
1900	1.8691-3	-819.2	8.4520	29.140	654	1.0081	-1.0002	1.4852	1.2423	820.6	1351 .719	1.3983	1.2564	825.3	1260 .726
1950	1.8207-3	-744.3	8.4909	29.133	665	1.0107	-1.0003	1.5141	1.2380	830.0	1406 .716	1.4028	1.2554	835.8	1288 .725
2000	1.7746-3	-667.7	8.5296	29.124	676	1.0139	-1.0004	1.5475	1.2334	839.2	1468 .713	1.4071	1.2545	846.3	1315 .724
2050	1.7307-3	-589.4	8.5683	29.113	688	1.0177	-1.0005	1.5860	1.2285	848.1	1536 .710	1.4111	1.2537	856.7	1342 .723
2100	1.6887-3	-509.0	8.6071	29.099	699	1.0223	-1.0007	1.6301	1.2233	856.7	1612 .707	1.4149	1.2530	867.1	1368 .722
2150	1.6484-3	-426.3	8.6460	29.082	709	1.0278	-1.0009	1.6801	1.2179	865.2	1697 .702	1.4185	1.2524	877.4	1394 .722
2200	1.6098-3	-340.9	8.6852	29.061	720	1.0342	-1.0011	1.7364	1.2123	873.5	1792 .698	1.4218	1.2519	887.7	1421 .721
2250	1.5727-3	-252.6	8.7250	29.037	731	1.0417	-1.0014	1.7992	1.2067	881.7	1899 .692	1.4248	1.2515	897.9	1446 .720
2300	1.5370-3	-160.9	8.7653	29.007	741	1.0502	-1.0017	1.8688	1.2012	889.9	2018 .686	1.4277	1.2512	908.2	1472 .719
2350	1.5025-3	-65.6	8.8062	28.973	751	1.0599	-1.0021	1.9451	1.1957	898.0	2151 .680	1.4303	1.2510	918.5	1498 .718
2400	1.4692-3	33.7	8.8481	28.933	762	1.0708	-1.0025	2.0281	1.1904	906.1	2298 .672	1.4328	1.2509	928.8	1523 .717
2450	1.4369-3	137.3	8.8908	28.888	772	1.0828	-1.0030	2.1174	1.1854	914.3	2460 .664	1.4350	1.2509	939.2	1548 .715
2500	1.4056-3	245.6	8.9345	28.836	782	1.0961	-1.0035	2.2126	1.1807	922.5	2639 .655	1.4371	1.2510	949.6	1573 .714
2550	1.3753-3	358.7	8.9793	28.777	792	1.1105	-1.0042	2.3133	1.1763	930.9	2836 .646	1.4389	1.2512	960.1	1598 .713
2600	1.3457-3	477.0	9.0252	28.711	801	1.1260	-1.0048	2.4186	1.1723	939.5	3050 .635	1.4407	1.2516	970.8	1624 .711
2650	1.3170-3	600.6	9.0723	28.637	811	1.1426	-1.0056	2.5278	1.1687	948.2	3284 .624	1.4422	1.2521	981.5	1649 .709
2700	1.2889-3	729.8	9.1206	28.557	820	1.1601	-1.0064	2.6400	1.1655	957.2	3537 .612	1.4436	1.2526	992.3	1674 .708
2750	1.2616-3	864.6	9.1701	28.468	830	1.1784	-1.0073	2.7543	1.1627	966.4	3811 .600	1.4449	1.2533	1003.3	1699 .706
2800	1.2349-3	1005.2	9.2208	28.372	839	1.1975	-1.0083	2.8696	1.1603	975.7	4105 .586	1.4460	1.2542	1014.4	1724 .704
2850	1.2087-3	1151.6	9.2726	28.268	848	1.2172	-1.0093	2.9853	1.1583	985.4	4421 .573	1.4471	1.2551	1025.7	1749 .702
2900	1.1832-3	1303.8	9.3255	28.157	857	1.2374	-1.0104	3.1004	1.1567	995.2	4759 .558	1.4481	1.2562	1037.2	1774 .699
2950	1.1583-3	1461.6	9.3795	28.038	866	1.2581	-1.0116	3.2143	1.1554	1005.3	5119 .544	1.4489	1.2573	1048.8	1800 .697
3000	1.1338-3	1625.2	9.4344	27.911	875	1.2790	-1.0128	3.3265	1.1544	1015.7	5502 .529	1.4498	1.2586	1060.5	1827 .694

TABLE 5.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.069653; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9743-2	-2161.5	7.0005	29.161	393	1.0000	-1.0000	1.2284	1.3023	578.1	653	.739	1.2284	1.3023	578.1	653	.739
950	1.8704-2	-2099.7	7.0673	29.161	409	1.0000	-1.0000	1.2421	1.2979	592.9	687	.738	1.2421	1.2979	592.9	687	.738
1000	1.7769-2	-2037.3	7.1313	29.161	423	1.0000	-1.0000	1.2550	1.2940	607.4	721	.737	1.2550	1.2940	607.4	721	.737
1050	1.6923-2	-1974.2	7.1928	29.161	438	1.0000	-1.0000	1.2669	1.2904	621.6	753	.737	1.2668	1.2904	621.6	753	.737
1100	1.6153-2	-1910.6	7.2520	29.161	452	1.0000	-1.0000	1.2781	1.2871	635.4	786	.736	1.2781	1.2871	635.4	786	.736
1150	1.5451-2	-1846.4	7.3091	29.161	466	1.0000	-1.0000	1.2889	1.2840	648.9	817	.735	1.2889	1.2841	648.9	817	.735
1200	1.4807-2	-1781.7	7.3642	29.161	480	1.0000	-1.0000	1.2992	1.2812	662.1	849	.734	1.2991	1.2812	662.1	849	.735
1250	1.4215-2	-1716.5	7.4174	29.161	493	1.0000	-1.0000	1.3091	1.2785	675.0	880	.734	1.3088	1.2785	675.0	880	.734
1300	1.3668-2	-1650.8	7.4689	29.161	507	1.0000	-1.0000	1.3186	1.2759	687.7	911	.733	1.3181	1.2760	687.7	911	.733
1350	1.3162-2	-1584.7	7.5189	29.161	520	1.0001	-1.0000	1.3278	1.2735	700.1	942	.733	1.3269	1.2737	700.2	941	.733
1400	1.2692-2	-1518.0	7.5673	29.161	533	1.0001	-1.0000	1.3367	1.2712	712.3	973	.732	1.3352	1.2715	712.4	971	.732
1450	1.2254-2	-1451.0	7.6144	29.160	546	1.0002	-1.0000	1.3456	1.2690	724.3	1003	.732	1.3432	1.2695	724.5	1001	.732
1500	1.1846-2	-1383.5	7.6602	29.160	558	1.0003	-1.0000	1.3545	1.2668	736.1	1034	.731	1.3507	1.2676	736.3	1031	.731
1550	1.1463-2	-1315.5	7.7047	29.160	571	1.0004	-1.0000	1.3635	1.2647	747.6	1066	.730	1.3579	1.2658	747.9	1060	.731
1600	1.1105-2	-1247.1	7.7482	29.159	583	1.0006	-1.0000	1.3730	1.2625	758.9	1098	.729	1.3646	1.2641	759.4	1090	.730
1650	1.0768-2	-1178.2	7.7906	29.159	595	1.0010	-1.0000	1.3830	1.2603	770.0	1130	.728	1.3711	1.2626	770.7	1119	.729
1700	1.0451-2	-1108.8	7.8320	29.158	607	1.0014	-1.0000	1.3938	1.2580	780.9	1164	.727	1.3772	1.2611	781.9	1148	.729
1750	1.0152-2	-1038.8	7.8726	29.156	619	1.0019	-1.0000	1.4057	1.2556	791.6	1199	.726	1.3829	1.2598	792.9	1176	.728
1800	9.8693-3	-968.2	7.9124	29.154	631	1.0027	-1.0001	1.4190	1.2531	802.0	1235	.725	1.3883	1.2585	803.8	1204	.727
1850	9.6018-3	-896.9	7.9514	29.152	642	1.0036	-1.0001	1.4340	1.2504	812.2	1274	.723	1.3935	1.2573	814.5	1232	.726
1900	9.3480-3	-824.8	7.9899	29.149	654	1.0049	-1.0001	1.4510	1.2474	822.2	1315	.722	1.3983	1.2563	825.1	1260	.726
1950	9.1070-3	-751.7	8.0278	29.144	665	1.0064	-1.0002	1.4704	1.2443	832.0	1359	.720	1.4029	1.2553	835.6	1288	.725
2000	8.8777-3	-677.7	8.0653	29.139	677	1.0083	-1.0002	1.4924	1.2409	841.5	1406	.718	1.4073	1.2543	846.1	1315	.724
2050	8.6591-3	-602.5	8.1025	29.132	688	1.0106	-1.0003	1.5174	1.2373	850.8	1458	.716	1.4113	1.2535	856.4	1342	.723
2100	8.4505-3	-525.9	8.1394	29.124	699	1.0134	-1.0004	1.5458	1.2334	859.9	1514	.714	1.4152	1.2527	866.6	1368	.723
2150	8.2511-3	-447.8	8.1761	29.114	710	1.0167	-1.0005	1.5778	1.2294	868.8	1575	.711	1.4188	1.2520	876.8	1395	.722
2200	8.0602-3	-368.0	8.2128	29.101	720	1.0205	-1.0006	1.6136	1.2251	877.5	1642	.708	1.4221	1.2514	886.9	1421	.721
2250	7.8770-3	-286.4	8.2495	29.086	731	1.0250	-1.0008	1.6535	1.2207	886.1	1715	.705	1.4253	1.2509	896.9	1447	.720
2300	7.7011-3	-202.6	8.2863	29.069	742	1.0302	-1.0010	1.6977	1.2163	894.5	1796	.701	1.4283	1.2504	907.0	1472	.719
2350	7.5319-3	-116.5	8.3233	29.048	752	1.0361	-1.0012	1.7463	1.2117	902.8	1884	.697	1.4310	1.2500	917.0	1498	.718
2400	7.3689-3	-27.9	8.3607	29.024	762	1.0428	-1.0015	1.7992	1.2072	911.0	1980	.693	1.4336	1.2497	926.9	1523	.717
2450	7.2116-3	63.5	8.3983	28.996	773	1.0503	-1.0018	1.8566	1.2028	919.2	2085	.688	1.4360	1.2495	936.9	1548	.716
2500	7.0596-3	157.8	8.4365	28.964	783	1.0586	-1.0021	1.9182	1.1984	927.4	2200	.683	1.4382	1.2494	946.9	1573	.715
2550	6.9125-3	255.3	8.4751	28.928	793	1.0677	-1.0025	1.9839	1.1942	935.6	2324	.677	1.4403	1.2493	956.9	1599	.714
2600	6.7700-3	356.3	8.5143	28.887	802	1.0776	-1.0029	2.0533	1.1903	943.8	2458	.670	1.4422	1.2493	966.9	1624	.713
2650	6.6318-3	460.7	8.5541	28.842	812	1.0883	-1.0034	2.1262	1.1865	952.1	2603	.663	1.4439	1.2494	977.0	1648	.712
2700	6.4976-3	568.9	8.5945	28.791	822	1.0998	-1.0039	2.2021	1.1830	960.4	2758	.656	1.4455	1.2496	987.1	1673	.710
2750	6.3671-3	681.0	8.6356	28.735	831	1.1120	-1.0045	2.2804	1.1798	968.9	2925	.648	1.4470	1.2499	997.3	1697	.709
2800	6.2400-3	797.0	8.6774	28.674	841	1.1248	-1.0051	2.3606	1.1769	977.5	3102	.640	1.4484	1.2503	1007.5	1722	.707
2850	6.1163-3	917.1	8.7199	28.608	850	1.1382	-1.0058	2.4422	1.1742	986.2	3291	.631	1.4496	1.2508	1017.9	1746	.706
2900	5.9957-3	1041.2	8.7631	28.535	860	1.1521	-1.0065	2.5244	1.1719	995.1	3490	.622	1.4508	1.2513	1028.3	1770	.704
2950	5.8781-3	1169.5	8.8070	28.458	869	1.1664	-1.0073	2.6066	1.1699	1004.2	3702	.612	1.4518	1.2519	1038.8	1794	.703
3000	5.7633-3	1301.9	8.8515	28.375	878	1.1811	-1.0081	2.6883	1.1682	1013.4	3925	.601	1.4528	1.2527	1049.4	1819	.701

TABLE 5C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.069653; EQUIV.RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.013-5	-3154.3	6.9354	29.161	1.0507	1.867-5	30.644	128	1.000	-1.000	0.9696	1.3885	274	170	.734	200
220	1.826-5	-3130.1	7.0504	29.161	1.5422	1.696-5	30.613	139	1.000	-1.000	0.9745	1.3864	288	186	.731	220
240	1.633-5	-3070.8	7.3058	29.161	5.7199	1.539-5	30.308	147	1.000	-1.000	0.9909	1.3828	302	198	.736	240
						PRESSURE = 0.10 ATM										
200	2.014-4	-3154.5	6.3550	29.161	1.0166	1.867-4	30.646	128	1.000	-1.000	0.9696	1.3885	274	170	.734	200
220	1.830-4	-3133.7	6.4539	29.161	1.0780	1.697-4	30.643	140	1.000	-1.000	0.9733	1.3865	288	186	.730	220
240	1.674-4	-3109.3	6.5600	29.161	1.4866	1.554-4	30.612	150	1.000	-1.000	0.9783	1.3843	300	202	.727	240
260	1.519-4	-3062.1	6.7476	29.161	3.8702	1.425-4	30.403	159	1.000	-1.000	0.9909	1.3812	313	215	.730	260
280	1.298-4	-2899.6	7.3455	29.161	12.2148	1.280-4	29.415	160	1.000	-1.000	1.0373	1.3746	330	220	.752	280
						PRESSURE = 1.00 ATM										
200	2.013-3	-3154.5	5.7756	29.161	1.0132	1.867-3	30.646	128	1.000	-1.000	0.9695	1.3885	274	170	.734	200
220	1.830-3	-3134.1	5.8729	29.161	1.0319	1.698-3	30.646	140	1.000	-1.000	0.9732	1.3866	288	186	.730	220
240	1.677-3	-3113.0	5.9645	29.161	1.0854	1.556-3	30.643	150	1.000	-1.000	0.9771	1.3845	300	202	.727	240
260	1.546-3	-3089.5	6.0585	29.161	1.3276	1.435-3	30.622	161	1.000	-1.000	0.9819	1.3822	312	218	.725	260
280	1.424-3	-3032.6	6.2679	29.161	2.1313	1.328-3	30.523	170	1.000	-1.000	0.9901	1.3795	324	232	.726	280
298	1.309-3	-2981.0	6.4459	29.161	3.8095	1.237-3	30.253	177	1.000	-1.000	1.0052	1.3763	336	243	.732	298
300	1.296-3	-2973.7	6.4703	29.161	4.0842	1.227-3	30.208	177	1.000	-1.000	1.0075	1.3759	337	243	.733	300
320	1.128-3	-2846.8	6.8781	29.161	9.5661	1.117-3	29.341	179	1.000	-1.000	1.0495	1.3699	352	249	.753	320
						PRESSURE = 10.00 ATM										
200	2.010-2	-3154.5	5.1962	29.161	1.0129	1.867-2	30.646	128	1.000	-1.000	0.9695	1.3885	274	170	.734	200
220	1.828-2	-3134.1	5.2934	29.161	1.0273	1.698-2	30.646	140	1.000	-1.000	0.9732	1.3866	288	186	.730	220
240	1.676-2	-3113.4	5.3835	29.161	1.0455	1.556-2	30.646	150	1.000	-1.000	0.9770	1.3845	300	202	.727	240
260	1.547-2	-3092.2	5.4685	29.161	1.0830	1.436-2	30.644	161	1.000	-1.000	0.9810	1.3823	312	218	.724	260
280	1.435-2	-3044.6	5.6435	29.161	1.3086	1.333-2	30.634	171	1.000	-1.000	0.9856	1.3800	324	233	.723	280
298	1.345-2	-3019.6	5.7299	29.161	1.4654	1.251-2	30.607	180	1.000	-1.000	0.9906	1.3778	334	246	.723	298
300	1.337-2	-3016.9	5.7390	29.161	1.4898	1.243-2	30.602	181	1.000	-1.000	0.9912	1.3776	335	248	.723	300
320	1.244-2	-2983.4	5.8468	29.161	1.9085	1.162-2	30.516	190	1.000	-1.000	0.9992	1.3749	346	261	.726	320
340	1.152-2	-2937.6	5.9855	29.161	2.7723	1.086-2	30.311	197	1.000	-1.000	1.0124	1.3716	358	273	.732	340
360	1.051-2	-2867.2	6.1864	29.161	4.4576	1.012-2	29.883	202	1.000	-1.000	1.0354	1.3675	370	282	.742	360
380	9.352-3	-2759.3	6.4778	29.161	1.0725	9.352-3	29.161	205	1.000	-1.000	1.0725	1.3621	384	291	.756	380
						PRESSURE = 50.00 ATM										
200	9.989-2	-3154.5	4.7913	29.161	1.0129	9.337-2	30.646	128	1.000	-1.000	0.9695	1.3885	274	170	.734	200
220	9.087-2	-3134.1	4.8885	29.161	1.0268	8.488-2	30.646	140	1.000	-1.000	0.9732	1.3866	288	186	.730	220
240	8.335-2	-3113.4	4.9785	29.161	1.0420	7.781-2	30.646	150	1.000	-1.000	0.9769	1.3845	300	202	.727	240
260	7.697-2	-3092.4	5.0626	29.161	1.0613	7.182-2	30.646	161	1.000	-1.000	0.9809	1.3823	312	218	.724	260
280	7.153-2	-3045.7	5.2346	29.161	1.2369	6.669-2	30.644	171	1.000	-1.000	0.9852	1.3801	324	233	.723	280
298	6.717-2	-3022.9	5.3132	29.161	1.2696	6.262-2	30.638	180	1.000	-1.000	0.9893	1.3780	334	247	.722	298
300	6.675-2	-3020.6	5.3210	29.161	1.2747	6.223-2	30.637	181	1.000	-1.000	0.9898	1.3778	335	248	.722	300
320	6.251-2	-2994.4	5.4057	29.161	1.3595	5.831-2	30.620	191	1.000	-1.000	0.9950	1.3753	346	262	.724	320
340	5.867-2	-2965.7	5.4926	29.161	1.5253	5.480-2	30.579	199	1.000	-1.000	1.0013	1.3728	356	275	.725	340
360	5.505-2	-2932.5	5.5873	29.161	1.8178	5.161-2	30.493	208	1.000	-1.000	1.0096	1.3700	367	288	.728	360
380	5.151-2	-2891.7	5.6974	29.161	2.2968	4.864-2	30.332	215	1.000	-1.000	1.0213	1.3669	377	300	.732	380
400	4.786-2	-2838.8	5.8329	29.161	3.0461	4.578-2	30.053	221	1.000	-1.000	1.0382	1.3633	388	312	.738	400
420	4.394-2	-2767.2	6.0074	29.161	4.2012	4.295-2	29.604	226	1.000	-1.000	1.0632	1.3590	400	322	.746	420

TABLE 6.1D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
200	1.7796-5	-2935.1	7.7867	29.206	116	1.0000	-1.0000	1.0320	1.3809	280.4	156	.771	1.0320	1.3809	280.4	156	.771
210	1.6949-5	-2924.8	7.8371	29.206	122	1.0000	-1.0000	1.0340	1.3799	287.2	164	.767	1.0340	1.3799	287.2	164	.767
220	1.6178-5	-2914.4	7.8853	29.206	127	1.0000	-1.0000	1.0362	1.3788	293.9	173	.764	1.0362	1.3788	293.9	173	.764
230	1.5475-5	-2904.0	7.9314	29.206	133	1.0000	-1.0000	1.0384	1.3777	300.3	181	.760	1.0384	1.3777	300.3	181	.761
240	1.4830-5	-2893.6	7.9756	29.206	138	1.0000	-1.0000	1.0407	1.3766	306.7	189	.758	1.0407	1.3766	306.7	189	.758
250	1.4237-5	-2883.2	8.0182	29.206	143	1.0000	-1.0000	1.0431	1.3754	312.9	198	.756	1.0430	1.3754	312.9	197	.756
260	1.3689-5	-2872.8	8.0591	29.206	148	1.0000	-1.0000	1.0456	1.3741	318.9	206	.754	1.0454	1.3742	318.9	206	.754
270	1.3182-5	-2862.3	8.0986	29.206	153	1.0000	-1.0000	1.0483	1.3729	324.8	214	.752	1.0479	1.3730	324.9	214	.753
280	1.2712-5	-2851.8	8.1368	29.206	158	1.0001	-1.0000	1.0511	1.3715	330.6	222	.751	1.0505	1.3718	330.7	221	.752
290	1.2273-5	-2841.3	8.1737	29.206	163	1.0001	-1.0000	1.0542	1.3701	336.3	230	.749	1.0531	1.3705	336.4	229	.751
298	1.1938-5	-2832.7	8.2030	29.206	167	1.0002	-1.0000	1.0569	1.3688	340.9	237	.748	1.0552	1.3695	340.9	235	.750
300	1.1864-5	-2830.7	8.2095	29.206	168	1.0002	-1.0000	1.0575	1.3685	341.9	238	.747	1.0557	1.3692	342.0	237	.750
310	1.1481-5	-2820.1	8.2443	29.206	173	1.0003	-1.0000	1.0614	1.3668	347.3	246	.746	1.0585	1.3679	347.5	244	.750
320	1.1122-5	-2809.5	8.2780	29.205	178	1.0005	-1.0000	1.0658	1.3649	352.6	255	.743	1.0612	1.3666	352.8	251	.751
330	1.0785-5	-2798.8	8.3109	29.205	183	1.0008	-1.0000	1.0710	1.3628	357.8	264	.740	1.0641	1.3653	358.1	259	.751
340	1.0468-5	-2788.1	8.3430	29.204	187	1.0012	-1.0000	1.0772	1.3603	362.9	274	.735	1.0670	1.3639	363.4	266	.751
350	1.0168-5	-2777.3	8.3743	29.202	192	1.0018	-1.0001	1.0848	1.3575	367.8	286	.729	1.0700	1.3626	368.5	273	.751
360	9.8850-6	-2766.4	8.4050	29.201	196	1.0026	-1.0001	1.0940	1.3542	372.6	298	.720	1.0730	1.3612	373.5	281	.751
370	9.6170-6	-2755.4	8.4351	29.198	201	1.0037	-1.0001	1.1052	1.3503	377.2	313	.708	1.0761	1.3598	378.5	288	.750
380	9.3628-6	-2744.3	8.4648	29.195	205	1.0052	-1.0002	1.1191	1.3458	381.6	331	.695	1.0793	1.3585	383.4	296	.749
390	9.1213-6	-2733.0	8.4940	29.190	210	1.0072	-1.0003	1.1359	1.3406	385.9	351	.679	1.0825	1.3571	388.3	303	.749
400	8.8914-6	-2721.5	8.5231	29.184	214	1.0097	-1.0004	1.1564	1.3347	390.0	375	.661	1.0858	1.3557	393.1	311	.748
410	8.6721-6	-2709.8	8.5519	29.176	218	1.0129	-1.0005	1.1812	1.3280	393.9	402	.641	1.0892	1.3543	397.8	319	.747
420	8.4626-6	-2697.9	8.5807	29.165	223	1.0168	-1.0007	1.2108	1.3206	397.6	434	.621	1.0927	1.3530	402.5	326	.746
430	8.2621-6	-2685.6	8.6096	29.152	227	1.0217	-1.0009	1.2458	1.3125	401.2	471	.600	1.0963	1.3516	407.1	334	.745
440	8.0697-6	-2673.0	8.6387	29.136	231	1.0277	-1.0012	1.2868	1.3038	404.6	514	.579	1.1001	1.3503	411.8	342	.744
450	7.8849-6	-2659.9	8.6681	29.115	235	1.0347	-1.0015	1.3343	1.2947	407.9	561	.559	1.1039	1.3489	416.3	350	.742
460	7.7069-6	-2646.2	8.6980	29.091	239	1.0430	-1.0019	1.3886	1.2854	411.1	614	.541	1.1079	1.3476	420.9	358	.740
470	7.5352-6	-2632.1	8.7285	29.061	243	1.0526	-1.0024	1.4498	1.2760	414.2	671	.526	1.1121	1.3464	425.5	367	.738
480	7.3693-6	-2617.2	8.7598	29.025	247	1.0634	-1.0029	1.5178	1.2666	417.3	731	.514	1.1164	1.3451	430.1	375	.736
490	7.2086-6	-2601.7	8.7918	28.984	251	1.0754	-1.0035	1.5923	1.2576	420.4	793	.504	1.1209	1.3440	434.6	384	.733
500	7.0527-6	-2585.4	8.8248	28.936	255	1.0885	-1.0042	1.6726	1.2490	423.6	856	.499	1.1255	1.3428	439.2	394	.730
510	6.9014-6	-2568.2	8.8587	28.882	259	1.1024	-1.0049	1.7576	1.2410	426.8	918	.496	1.1303	1.3417	443.8	403	.727
520	6.7543-6	-2550.2	8.8937	28.820	263	1.1169	-1.0056	1.8460	1.2335	430.2	977	.497	1.1352	1.3407	448.5	413	.723
530	6.6112-6	-2531.3	8.9297	28.752	267	1.1316	-1.0064	1.9359	1.2268	433.6	1030	.502	1.1403	1.3397	453.1	424	.719
540	6.4720-6	-2511.5	8.9668	28.678	271	1.1459	-1.0072	2.0253	1.2207	437.2	1077	.510	1.1455	1.3388	457.8	435	.714
550	6.3365-6	-2490.8	9.0047	28.597	275	1.1594	-1.0079	2.1113	1.2153	440.8	1115	.520	1.1508	1.3380	462.6	446	.710
560	6.2048-6	-2469.3	9.0435	28.512	279	1.1711	-1.0086	2.1903	1.2107	444.6	1143	.534	1.1562	1.3373	467.3	457	.705
570	6.0770-6	-2447.0	9.0829	28.424	282	1.1803	-1.0091	2.2570	1.2070	448.6	1157	.551	1.1615	1.3366	472.1	468	.700
580	5.9532-6	-2424.2	9.1226	28.333	286	1.1855	-1.0094	2.3040	1.2043	452.7	1157	.570	1.1668	1.3360	476.9	480	.696
590	5.8338-6	-2401.0	9.1621	28.243	290	1.1851	-1.0094	2.3211	1.2030	457.1	1138	.591	1.1720	1.3354	481.6	491	.692

TABLE 6.1D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P ◘ 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.7190-6	-2377.9	9.2010	28.157	293	1.1773	-1.0090	2.2957	1.2038	461.8	1097	.614	1.1770	1.3349	486.3	502	.688
610	5.6095-6	-2355.3	9.2384	28.078	297	1.1606	-1.0081	2.2172	1.2074	467.0	1033	.637	1.1817	1.3344	491.0	512	.685
620	5.5057-6	-2333.8	9.2734	28.010	300	1.1351	-1.0068	2.0848	1.2145	472.8	951	.658	1.1860	1.3338	495.5	522	.682
630	5.4079-6	-2313.7	9.3055	27.957	304	1.1041	-1.0053	1.9164	1.2253	479.1	863	.675	1.1899	1.3332	499.8	531	.680
640	5.3160-6	-2295.4	9.3343	27.918	307	1.0732	-1.0037	1.7456	1.2388	485.9	784	.684	1.1935	1.3325	504.0	540	.679
650	5.2294-6	-2278.7	9.3602	27.892	311	1.0476	-1.0024	1.6031	1.2526	492.6	725	.687	1.1968	1.3317	508.0	548	.679
660	5.1472-6	-2263.2	9.3839	27.876	314	1.0292	-1.0015	1.5019	1.2640	498.8	687	.686	1.1998	1.3308	511.8	555	.679
670	5.0686-6	-2248.6	9.4059	27.866	317	1.0173	-1.0009	1.4377	1.2721	504.3	666	.685	1.2027	1.3299	515.6	562	.679
680	4.9931-6	-2234.4	9.4269	27.861	321	1.0101	-1.0005	1.4000	1.2771	509.1	657	.683	1.2055	1.3290	519.3	569	.680
690	4.9202-6	-2220.5	9.4472	27.858	324	1.0059	-1.0003	1.3791	1.2799	513.4	654	.682	1.2083	1.3280	523.0	575	.680
700	4.8496-6	-2206.8	9.4669	27.856	327	1.0034	-1.0002	1.3681	1.2812	517.4	656	.682	1.2110	1.3271	526.6	582	.681
710	4.7811-6	-2193.1	9.4863	27.855	330	1.0020	-1.0001	1.3627	1.2817	521.2	660	.682	1.2137	1.3261	530.1	588	.682
720	4.7146-6	-2179.5	9.5053	27.854	334	1.0012	-1.0001	1.3604	1.2818	524.9	666	.682	1.2164	1.3252	533.7	595	.682
730	4.6499-6	-2165.9	9.5241	27.854	337	1.0007	-1.0000	1.3598	1.2817	528.5	672	.682	1.2191	1.3243	537.2	601	.683
740	4.5870-6	-2152.3	9.5426	27.854	340	1.0004	-1.0000	1.3600	1.2815	532.0	678	.682	1.2218	1.3233	540.7	607	.684
750	4.5259-6	-2138.7	9.5609	27.853	343	1.0003	-1.0000	1.3606	1.2812	535.6	685	.682	1.2244	1.3224	544.1	614	.684
760	4.4663-6	-2125.1	9.5789	27.853	346	1.0002	-1.0000	1.3614	1.2809	539.1	691	.682	1.2271	1.3215	547.5	620	.685
770	4.4083-6	-2111.5	9.5967	27.853	349	1.0001	-1.0000	1.3622	1.2807	542.6	697	.682	1.2297	1.3206	550.9	627	.686
780	4.3518-6	-2097.9	9.6143	27.853	353	1.0001	-1.0000	1.3630	1.2805	546.0	704	.683	1.2324	1.3197	554.3	633	.686
790	4.2967-6	-2084.2	9.6316	27.853	356	1.0000	-1.0000	1.3638	1.2802	549.5	710	.683	1.2350	1.3188	557.7	639	.687
800	4.2430-6	-2070.6	9.6488	27.853	359	1.0000	-1.0000	1.3644	1.2801	552.9	716	.683	1.2376	1.3179	561.0	646	.688
810	4.1906-6	-2056.9	9.6658	27.853	362	1.0000	-1.0000	1.3650	1.2799	556.3	723	.684	1.2402	1.3170	564.3	652	.689
820	4.1395-6	-2043.3	9.6825	27.853	365	1.0000	-1.0000	1.3655	1.2798	559.7	729	.684	1.2428	1.3161	567.6	658	.689
830	4.0896-6	-2029.6	9.6991	27.853	368	1.0000	-1.0000	1.3660	1.2796	563.1	734	.684	1.2454	1.3153	570.9	664	.690
840	4.0409-6	-2016.0	9.7154	27.853	371	1.0000	-1.0000	1.3664	1.2795	566.4	740	.685	1.2479	1.3144	574.1	670	.691
850	3.9934-6	-2002.3	9.7316	27.853	374	1.0000	-1.0000	1.3667	1.2795	569.8	746	.685	1.2505	1.3136	577.3	677	.691
860	3.9469-6	-1988.6	9.7476	27.853	377	1.0000	-1.0000	1.3670	1.2794	573.1	752	.685	1.2530	1.3127	580.5	683	.692
870	3.9016-6	-1975.0	9.7634	27.853	380	1.0000	-1.0000	1.3673	1.2793	576.4	758	.686	1.2556	1.3119	583.7	689	.692
880	3.8572-6	-1961.3	9.7790	27.853	383	1.0000	-1.0000	1.3675	1.2792	579.7	763	.686	1.2581	1.3111	586.9	695	.693
890	3.8139-6	-1947.6	9.7945	27.853	386	1.0000	-1.0000	1.3677	1.2792	583.0	769	.687	1.2606	1.3103	590.0	701	.694
900	3.7715-6	-1933.9	9.8098	27.853	389	1.0000	-1.0000	1.3679	1.2791	586.2	775	.687	1.2630	1.3095	593.1	708	.694
910	3.7301-6	-1920.3	9.8249	27.853	392	1.0000	-1.0000	1.3681	1.2791	589.5	780	.687	1.2655	1.3087	596.2	714	.695
920	3.6895-6	-1906.6	9.8398	27.853	395	1.0000	-1.0000	1.3682	1.2791	592.7	786	.688	1.2679	1.3079	599.3	720	.695
930	3.6499-6	-1892.9	9.8546	27.853	398	1.0000	-1.0000	1.3684	1.2790	595.9	791	.688	1.2703	1.3072	602.4	726	.696
940	3.6110-6	-1879.2	9.8692	27.853	401	1.0000	-1.0000	1.3685	1.2790	599.1	796	.688	1.2727	1.3064	605.5	732	.696
950	3.5730-6	-1865.5	9.8837	27.853	404	1.0000	-1.0000	1.3687	1.2789	602.2	802	.689	1.2751	1.3057	608.5	738	.697
960	3.5358-6	-1851.8	9.8981	27.853	406	1.0000	-1.0000	1.3688	1.2789	605.4	807	.689	1.2774	1.3049	611.5	744	.697
970	3.4994-6	-1838.1	9.9123	27.853	409	1.0000	-1.0000	1.3690	1.2789	608.5	813	.690	1.2797	1.3042	614.5	750	.698
980	3.4636-6	-1824.5	9.9263	27.853	412	1.0000	-1.0000	1.3692	1.2788	611.6	818	.690	1.2820	1.3035	617.5	757	.698
990	3.4287-6	-1810.8	9.9402	27.853	415	1.0000	-1.0000	1.3693	1.2788	614.7	823	.690	1.2842	1.3028	620.5	763	.699

TABLE 6.1D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
1000	3.3944-6	-1797.1	9.9540	27.853	418	1.0000	-1.0000	1.3695	1.2787	617.8	828 .691	1.2864	1.3022	623.5	769 .699
1050	3.2327-6	-1728.6	10.0208	27.853	432	1.0000	-1.0000	1.3705	1.2785	633.0	855 .693	1.2970	1.2990	638.1	799 .701
1100	3.0858-6	-1660.0	10.0846	27.853	446	1.0000	-1.0000	1.3721	1.2781	647.8	881 .694	1.3072	1.2959	652.3	829 .703
1150	2.9516-6	-1591.4	10.1456	27.853	459	1.0000	-1.0000	1.3743	1.2775	662.2	907 .696	1.3171	1.2931	666.3	859 .704
1200	2.8286-6	-1522.6	10.2042	27.853	473	1.0000	-1.0000	1.3771	1.2768	676.3	933 .697	1.3265	1.2904	679.9	888 .706
1250	2.7155-6	-1453.6	10.2604	27.853	486	1.0000	-1.0000	1.3803	1.2759	690.0	959 .699	1.3356	1.2878	693.2	918 .707
1300	2.6111-6	-1384.5	10.3147	27.853	499	1.0000	-1.0000	1.3841	1.2750	703.4	986 .700	1.3443	1.2855	706.3	947 .708
1350	2.5143-6	-1315.2	10.3670	27.853	512	1.0000	-1.0000	1.3882	1.2740	716.5	1013 .701	1.3526	1.2832	719.1	977 .708
1400	2.4245-6	-1245.7	10.4175	27.853	524	1.0001	-1.0000	1.3927	1.2729	729.3	1042 .701	1.3605	1.2811	731.7	1006 .709
1450	2.3409-6	-1175.9	10.4665	27.853	537	1.0002	-1.0000	1.3978	1.2717	741.9	1071 .700	1.3681	1.2791	744.1	1035 .710
1500	2.2629-6	-1105.9	10.5140	27.853	549	1.0003	-1.0000	1.4035	1.2703	754.2	1103 .699	1.3754	1.2772	756.2	1064 .710
1550	2.1899-6	-1035.6	10.5601	27.852	561	1.0005	-1.0000	1.4102	1.2689	766.2	1137 .696	1.3823	1.2754	768.2	1093 .710
1600	2.1214-6	-964.9	10.6050	27.852	574	1.0009	-1.0000	1.4184	1.2671	778.0	1177 .691	1.3889	1.2738	780.0	1122 .710
1650	2.0570-6	-893.7	10.6488	27.851	586	1.0015	-1.0000	1.4289	1.2650	789.4	1223 .684	1.3952	1.2722	791.6	1151 .710
1700	1.9964-6	-821.9	10.6917	27.849	598	1.0025	-1.0001	1.4428	1.2624	800.5	1279 .674	1.4012	1.2708	803.1	1179 .710
1750	1.9392-6	-749.3	10.7337	27.847	609	1.0040	-1.0001	1.4621	1.2590	811.1	1348 .661	1.4069	1.2694	814.4	1208 .710
1800	1.8850-6	-675.6	10.7753	27.842	621	1.0064	-1.0002	1.4897	1.2544	821.2	1438 .644	1.4123	1.2681	825.6	1237 .709
1850	1.8337-6	-600.1	10.8166	27.836	633	1.0102	-1.0003	1.5306	1.2482	830.5	1555 .623	1.4174	1.2670	836.7	1265 .709
1900	1.7848-6	-522.2	10.8582	27.827	644	1.0163	-1.0005	1.5925	1.2396	838.9	1712 .599	1.4224	1.2659	847.7	1294 .708
1950	1.7381-6	-440.3	10.9007	27.812	655	1.0260	-1.0008	1.6882	1.2279	846.0	1929 .574	1.4270	1.2650	858.8	1323 .707
2000	1.6932-6	-352.4	10.9452	27.788	667	1.0417	-1.0013	1.8377	1.2126	851.8	2232 .549	1.4314	1.2643	869.8	1352 .706
2050	1.6498-6	-255.2	10.9932	27.752	678	1.0665	-1.0022	2.0681	1.1942	856.4	2663 .526	1.4356	1.2637	881.0	1382 .704
2100	1.6072-6	-143.8	11.0469	27.696	688	1.1044	-1.0035	2.4082	1.1745	860.5	3274 .506	1.4395	1.2635	892.5	1412 .702
2150	1.5651-6	-12.3	11.1088	27.611	699	1.1579	-1.0054	2.8739	1.1562	865.2	4117 .488	1.4431	1.2637	904.5	1442 .699
2200	1.5228-6	145.5	11.1813	27.490	709	1.2267	-1.0079	3.4541	1.1414	871.5	5224 .469	1.4464	1.2644	917.2	1475 .696
2250	1.4801-6	334.5	11.2662	27.326	719	1.3079	-1.0110	4.1151	1.1305	879.7	6596 .448	1.4494	1.2657	930.9	1509 .691
2300	1.4367-6	557.8	11.3643	27.116	728	1.3978	-1.0146	4.8227	1.1231	890.0	8214 .428	1.4522	1.2677	945.5	1545 .684
2350	1.3928-6	817.2	11.4759	26.857	737	1.4938	-1.0187	5.5561	1.1181	901.9	10044 .408	1.4549	1.2703	961.3	1585 .677
2400	1.3482-6	1113.7	11.6007	26.552	746	1.5945	-1.0232	6.3050	1.1149	915.4	12042 .390	1.4575	1.2736	978.4	1629 .667
2450	1.3032-6	1447.8	11.7385	26.200	754	1.6980	-1.0280	7.0602	1.1131	930.3	14135 .377	1.4603	1.2777	996.7	1678 .656
2500	1.2580-6	1819.5	11.8886	25.807	762	1.8016	-1.0331	7.8045	1.1122	946.5	16216 .367	1.4631	1.2824	1016.3	1731 .644
2550	1.2127-6	2227.5	12.0502	25.375	770	1.9004	-1.0382	8.5057	1.1122	964.0	18136 .361	1.4662	1.2878	1037.3	1791 .630
2600	1.1677-6	2668.6	12.2214	24.914	777	1.9870	-1.0431	9.1146	1.1130	982.7	19710 .360	1.4695	1.2938	1059.6	1856 .616
2650	1.1236-6	3136.4	12.3997	24.433	785	2.0526	-1.0471	9.5671	1.1145	1002.5	20752 .362	1.4730	1.3004	1082.9	1925 .601
2700	1.0809-6	3621.5	12.5810	23.948	793	2.0880	-1.0500	9.7953	1.1168	1023.2	21108 .368	1.4768	1.3074	1107.0	1998 .586
2750	1.0402-6	4111.3	12.7608	23.474	801	2.0862	-1.0511	9.7455	1.1199	1044.4	20707 .377	1.4806	1.3145	1131.5	2072 .572
2800	1.0022-6	4591.1	12.9337	23.026	809	2.0450	-1.0503	9.3995	1.1240	1066.0	19594 .388	1.4844	1.3215	1155.9	2145 .560
2850	9.6716-7	5046.8	13.0950	22.618	818	1.9686	-1.0477	8.7873	1.1292	1087.6	17926 .401	1.4880	1.3281	1179.6	2215 .549
2900	9.3541-7	5466.6	13.2411	22.259	826	1.8666	-1.0437	7.9823	1.1355	1109.1	15932 .414	1.4914	1.3341	1202.1	2282 .540
2950	9.0692-7	5843.4	13.3699	21.953	836	1.7513	-1.0387	7.0801	1.1433	1130.2	13847 .427	1.4945	1.3394	1223.3	2343 .533
3000	8.8148-7	6174.5	13.4812	21.699	845	1.6344	-1.0334	6.1724	1.1527	1151.1	11860 .440	1.4973	1.3439	1242.9	2400 .527

TABLE 6.2D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
200	1.7796-4	-2935.1	7.1312	29.206	116	1.0000	-1.0000	1.0320	1.3809	280.4	156	.771	1.0320	1.3809	280.4	156	.771
210	1.6949-4	-2924.8	7.1816	29.206	122	1.0000	-1.0000	1.0340	1.3799	287.2	164	.767	1.0340	1.3799	287.2	164	.767
220	1.6178-4	-2914.4	7.2298	29.206	127	1.0000	-1.0000	1.0362	1.3788	293.9	173	.764	1.0362	1.3788	293.9	173	.764
230	1.5475-4	-2904.0	7.2759	29.206	133	1.0000	-1.0000	1.0384	1.3777	300.3	181	.761	1.0384	1.3777	300.3	181	.761
240	1.4830-4	-2893.6	7.3201	29.206	138	1.0000	-1.0000	1.0407	1.3766	306.7	189	.758	1.0407	1.3766	306.7	189	.758
250	1.4237-4	-2883.2	7.3627	29.206	143	1.0000	-1.0000	1.0430	1.3754	312.9	197	.756	1.0430	1.3754	312.9	197	.756
260	1.3689-4	-2872.8	7.4036	29.206	148	1.0000	-1.0000	1.0455	1.3742	318.9	206	.754	1.0454	1.3742	318.9	206	.754
270	1.3182-4	-2862.3	7.4431	29.206	153	1.0000	-1.0000	1.0480	1.3729	324.9	214	.752	1.0479	1.3730	324.9	214	.753
280	1.2712-4	-2851.8	7.4813	29.206	158	1.0000	-1.0000	1.0507	1.3717	330.7	221	.751	1.0504	1.3718	330.7	221	.752
290	1.2273-4	-2841.3	7.5182	29.206	163	1.0000	-1.0000	1.0534	1.3704	336.4	229	.750	1.0531	1.3705	336.4	229	.751
298	1.1938-4	-2832.7	7.5474	29.206	167	1.0001	-1.0000	1.0558	1.3693	340.9	236	.750	1.0552	1.3695	340.9	235	.750
300	1.1864-4	-2830.8	7.5540	29.206	168	1.0001	-1.0000	1.0563	1.3690	341.9	237	.749	1.0557	1.3692	342.0	237	.750
310	1.1481-4	-2820.2	7.5886	29.206	173	1.0001	-1.0000	1.0594	1.3676	347.4	245	.749	1.0584	1.3679	347.4	244	.750
320	1.1123-4	-2809.6	7.6223	29.206	178	1.0002	-1.0000	1.0627	1.3661	352.8	253	.748	1.0612	1.3666	352.8	251	.751
330	1.0785-4	-2798.9	7.6551	29.206	183	1.0002	-1.0000	1.0663	1.3645	358.0	260	.747	1.0641	1.3653	358.1	259	.751
340	1.0468-4	-2788.2	7.6870	29.205	187	1.0004	-1.0000	1.0702	1.3628	363.2	269	.746	1.0670	1.3639	363.3	266	.751
350	1.0169-4	-2777.5	7.7181	29.205	192	1.0006	-1.0000	1.0746	1.3609	368.2	277	.744	1.0699	1.3626	368.5	273	.751
360	9.8862-5	-2766.7	7.7484	29.204	196	1.0008	-1.0000	1.0796	1.3589	373.2	286	.741	1.0729	1.3612	373.5	281	.751
370	9.6188-5	-2755.9	7.7780	29.204	201	1.0012	-1.0000	1.0852	1.3567	378.0	296	.736	1.0759	1.3598	378.5	288	.751
380	9.3653-5	-2745.0	7.8071	29.203	205	1.0017	-1.0001	1.0917	1.3543	382.8	307	.731	1.0790	1.3584	383.4	295	.750
390	9.1247-5	-2734.1	7.8355	29.201	210	1.0023	-1.0001	1.0992	1.3516	387.4	318	.725	1.0822	1.3570	388.2	303	.749
400	8.8960-5	-2723.0	7.8635	29.199	214	1.0031	-1.0001	1.1080	1.3485	391.9	331	.717	1.0854	1.3557	392.9	310	.749
410	8.6782-5	-2711.9	7.8909	29.197	218	1.0041	-1.0002	1.1182	1.3452	396.3	345	.708	1.0886	1.3543	397.6	318	.748
420	8.4707-5	-2700.7	7.9180	29.193	223	1.0054	-1.0002	1.1301	1.3415	400.6	361	.697	1.0920	1.3529	402.3	325	.748
430	8.2725-5	-2689.3	7.9448	29.189	227	1.0071	-1.0003	1.1439	1.3373	404.7	379	.685	1.0953	1.3515	406.9	332	.748
440	8.0829-5	-2677.8	7.9713	29.184	231	1.0091	-1.0004	1.1600	1.3328	408.7	398	.672	1.0988	1.3501	411.4	340	.747
450	7.9015-5	-2666.1	7.9975	29.177	235	1.0115	-1.0005	1.1785	1.3279	412.6	421	.658	1.1022	1.3487	415.9	347	.747
460	7.7275-5	-2654.2	8.0237	29.169	239	1.0145	-1.0006	1.1999	1.3225	416.4	446	.643	1.1058	1.3473	420.3	355	.746
470	7.5605-5	-2642.1	8.0497	29.158	243	1.0180	-1.0008	1.2244	1.3167	420.1	474	.628	1.1094	1.3459	424.7	362	.745
480	7.3999-5	-2629.7	8.0758	29.146	247	1.0221	-1.0010	1.2523	1.3105	423.6	506	.612	1.1131	1.3446	429.1	370	.744
490	7.2452-5	-2617.0	8.1019	29.131	251	1.0269	-1.0012	1.2839	1.3041	427.1	540	.597	1.1169	1.3432	433.4	377	.743
500	7.0961-5	-2604.0	8.1282	29.114	255	1.0324	-1.0015	1.3194	1.2973	430.4	578	.582	1.1208	1.3419	437.7	385	.742
510	6.9520-5	-2590.6	8.1547	29.094	259	1.0387	-1.0019	1.3591	1.2903	433.7	619	.568	1.1248	1.3406	442.0	393	.741
520	6.8128-5	-2576.8	8.1815	29.070	263	1.0458	-1.0022	1.4032	1.2832	436.9	664	.556	1.1288	1.3394	446.3	401	.739
530	6.6779-5	-2562.6	8.2087	29.042	267	1.0538	-1.0026	1.4519	1.2760	440.0	710	.545	1.1329	1.3381	450.6	410	.737
540	6.5471-5	-2547.8	8.2363	29.011	271	1.0626	-1.0031	1.5052	1.2689	443.1	759	.537	1.1372	1.3369	454.9	419	.735
550	6.4201-5	-2532.4	8.2645	28.975	274	1.0723	-1.0036	1.5632	1.2617	446.2	809	.530	1.1415	1.3358	459.2	427	.733
560	6.2967-5	-2516.5	8.2932	28.935	278	1.0827	-1.0042	1.6258	1.2547	449.3	861	.526	1.1459	1.3347	463.4	437	.730
570	6.1766-5	-2499.9	8.3226	28.889	282	1.0938	-1.0048	1.6930	1.2478	452.4	912	.523	1.1504	1.3336	467.7	446	.727
580	6.0596-5	-2482.6	8.3526	28.839	286	1.1056	-1.0055	1.7645	1.2411	455.6	963	.523	1.1550	1.3327	472.1	455	.724
590	5.9455-5	-2464.6	8.3834	28.784	289	1.1179	-1.0061	1.8399	1.2347	458.7	1012	.526	1.1596	1.3317	476.4	465	.721

TABLE 6.2D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.8342-5	-2445.8	8.4150	28.724	293	1.1305	-1.0068	1.9185	1.2285	461.9	1059	.531	1.1643	1.3309	480.8	475	.718
610	5.7256-5	-2426.2	8.4474	28.659	297	1.1431	-1.0075	1.9989	1.2227	465.2	1103	.537	1.1690	1.3301	485.2	485	.714
620	5.6196-5	-2405.8	8.4805	28.590	300	1.1553	-1.0082	2.0792	1.2173	468.5	1142	.546	1.1738	1.3294	489.6	496	.711
630	5.5162-5	-2384.6	8.5144	28.516	304	1.1666	-1.0088	2.1564	1.2124	471.9	1174	.558	1.1785	1.3287	494.0	506	.707
640	5.4153-5	-2362.7	8.5490	28.439	307	1.1762	-1.0093	2.2257	1.2083	475.5	1198	.571	1.1832	1.3282	498.5	517	.703
650	5.3172-5	-2340.2	8.5839	28.360	311	1.1829	-1.0097	2.2807	1.2051	479.2	1209	.586	1.1879	1.3277	503.0	527	.700
660	5.2219-5	-2317.2	8.6190	28.280	314	1.1854	-1.0098	2.3126	1.2031	483.2	1204	.603	1.1924	1.3272	507.5	538	.696
670	5.1297-5	-2294.0	8.6538	28.202	317	1.1822	-1.0096	2.3116	1.2028	487.4	1181	.621	1.1968	1.3269	511.9	548	.693
680	5.0410-5	-2271.1	8.6878	28.128	321	1.1718	-1.0091	2.2690	1.2045	492.0	1136	.640	1.2010	1.3265	516.4	558	.691
690	4.9561-5	-2248.8	8.7203	28.061	324	1.1538	-1.0082	2.1813	1.2087	497.1	1073	.659	1.2050	1.3261	520.7	567	.688
700	4.8753-5	-2227.6	8.7509	28.004	327	1.1295	-1.0069	2.0550	1.2157	502.7	997	.674	1.2087	1.3256	524.9	576	.687
710	4.7987-5	-2207.8	8.7790	27.958	330	1.1019	-1.0054	1.9081	1.2252	508.6	920	.685	1.2122	1.3251	529.0	584	.686
720	4.7263-5	-2189.4	8.8046	27.923	334	1.0751	-1.0040	1.7636	1.2363	514.8	852	.691	1.2154	1.3245	532.9	592	.685
730	4.6574-5	-2172.4	8.8281	27.899	337	1.0524	-1.0028	1.6406	1.2474	520.9	798	.692	1.2185	1.3238	536.7	599	.685
740	4.5918-5	-2156.5	8.8497	27.882	340	1.0350	-1.0019	1.5471	1.2572	526.7	761	.691	1.2214	1.3230	540.3	606	.685
750	4.5288-5	-2141.4	8.8701	27.872	343	1.0228	-1.0012	1.4817	1.2648	532.0	738	.689	1.2242	1.3222	543.9	613	.685
760	4.4682-5	-2126.8	8.8894	27.865	346	1.0146	-1.0008	1.4385	1.2702	536.7	725	.687	1.2269	1.3213	547.4	620	.686
770	4.4095-5	-2112.6	8.9080	27.861	349	1.0093	-1.0005	1.4110	1.2738	541.0	719	.686	1.2296	1.3205	550.8	626	.686
780	4.3525-5	-2098.6	8.9261	27.858	353	1.0059	-1.0003	1.3938	1.2761	545.0	717	.685	1.2323	1.3196	554.3	633	.687
790	4.2971-5	-2084.7	8.9437	27.856	356	1.0038	-1.0002	1.3833	1.2775	548.8	719	.684	1.2349	1.3187	557.6	639	.687
800	4.2433-5	-2070.9	8.9611	27.855	359	1.0024	-1.0001	1.3768	1.2783	552.5	722	.684	1.2376	1.3178	561.0	645	.688
810	4.1908-5	-2057.1	8.9782	27.854	362	1.0016	-1.0001	1.3730	1.2788	556.0	726	.684	1.2402	1.3170	564.3	652	.689
820	4.1396-5	-2043.4	8.9950	27.854	365	1.0010	-1.0001	1.3707	1.2790	559.5	731	.684	1.2428	1.3161	567.6	658	.689
830	4.0897-5	-2029.7	9.0116	27.854	368	1.0007	-1.0000	1.3693	1.2792	563.0	736	.685	1.2454	1.3153	570.8	664	.690
840	4.0410-5	-2016.0	9.0280	27.854	371	1.0005	-1.0000	1.3686	1.2792	566.4	741	.685	1.2479	1.3144	574.1	670	.691
850	3.9934-5	-2002.3	9.0442	27.853	374	1.0003	-1.0000	1.3682	1.2792	569.7	747	.685	1.2505	1.3136	577.3	677	.691
860	3.9470-5	-1988.7	9.0602	27.853	377	1.0002	-1.0000	1.3680	1.2792	573.1	752	.685	1.2530	1.3127	580.5	683	.692
870	3.9016-5	-1975.0	9.0760	27.853	380	1.0001	-1.0000	1.3679	1.2792	576.4	758	.686	1.2556	1.3119	583.7	689	.692
880	3.8573-5	-1961.3	9.0917	27.853	383	1.0001	-1.0000	1.3679	1.2792	579.7	764	.686	1.2581	1.3111	586.9	695	.693
890	3.8139-5	-1947.6	9.1071	27.853	386	1.0001	-1.0000	1.3680	1.2792	583.0	769	.687	1.2606	1.3103	590.0	701	.694
900	3.7715-5	-1933.9	9.1224	27.853	389	1.0001	-1.0000	1.3681	1.2791	586.2	775	.687	1.2630	1.3095	593.1	708	.694
910	3.7301-5	-1920.3	9.1375	27.853	392	1.0000	-1.0000	1.3682	1.2791	589.5	780	.687	1.2655	1.3087	596.2	714	.695
920	3.6895-5	-1906.6	9.1525	27.853	395	1.0000	-1.0000	1.3683	1.2790	592.7	786	.688	1.2679	1.3079	599.3	720	.695
930	3.6499-5	-1892.9	9.1673	27.853	398	1.0000	-1.0000	1.3685	1.2790	595.9	791	.688	1.2703	1.3072	602.4	726	.696
940	3.6110-5	-1879.2	9.1819	27.853	401	1.0000	-1.0000	1.3686	1.2790	599.1	796	.688	1.2727	1.3064	605.5	732	.696
950	3.5730-5	-1865.5	9.1964	27.853	404	1.0000	-1.0000	1.3687	1.2789	602.2	802	.689	1.2751	1.3057	608.5	738	.697
960	3.5358-5	-1851.8	9.2107	27.853	406	1.0000	-1.0000	1.3689	1.2789	605.4	807	.689	1.2774	1.3049	611.5	744	.697
970	3.4994-5	-1838.1	9.2249	27.853	409	1.0000	-1.0000	1.3690	1.2788	608.5	813	.690	1.2797	1.3042	614.5	750	.698
980	3.4636-5	-1824.5	9.2389	27.853	412	1.0000	-1.0000	1.3692	1.2788	611.6	818	.690	1.2820	1.3035	617.5	757	.698
990	3.4287-5	-1810.8	9.2529	27.853	415	1.0000	-1.0000	1.3694	1.2788	614.7	823	.690	1.2842	1.3028	620.5	763	.699

TABLE 6.2D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3944-5	-1797.1	9.2666	27.853	418	1.0000	-1.0000	1.3695	1.2787	617.8	828	.691	1.2864	1.3022	623.5	769	.699
1050	3.2327-5	-1728.6	9.3335	27.853	432	1.0000	-1.0000	1.3705	1.2785	633.0	855	.693	1.2970	1.2990	638.1	799	.701
1100	3.0858-5	-1660.0	9.3972	27.853	446	1.0000	-1.0000	1.3721	1.2781	647.8	881	.694	1.3072	1.2959	652.3	829	.703
1150	2.9516-5	-1591.4	9.4583	27.853	459	1.0000	-1.0000	1.3743	1.2775	662.2	907	.696	1.3171	1.2931	666.3	859	.704
1200	2.8286-5	-1522.6	9.5168	27.853	473	1.0000	-1.0000	1.3770	1.2768	676.3	933	.698	1.3265	1.2904	679.9	888	.706
1250	2.7155-5	-1453.6	9.5731	27.853	486	1.0000	-1.0000	1.3803	1.2760	690.0	959	.699	1.3356	1.2878	693.2	918	.707
1300	2.6111-5	-1384.5	9.6273	27.853	499	1.0000	-1.0000	1.3839	1.2750	703.4	986	.700	1.3443	1.2855	706.3	947	.708
1350	2.5143-5	-1315.2	9.6796	27.853	512	1.0000	-1.0000	1.3878	1.2740	716.5	1012	.701	1.3526	1.2832	719.1	977	.708
1400	2.4245-5	-1245.8	9.7302	27.853	524	1.0000	-1.0000	1.3921	1.2730	729.4	1039	.702	1.3605	1.2811	731.7	1006	.709
1450	2.3409-5	-1176.0	9.7791	27.853	537	1.0001	-1.0000	1.3965	1.2719	742.0	1067	.703	1.3681	1.2791	744.1	1035	.710
1500	2.2629-5	-1106.1	9.8265	27.853	549	1.0001	-1.0000	1.4013	1.2708	754.3	1095	.703	1.3754	1.2772	756.2	1064	.710
1550	2.1899-5	-1035.9	9.8725	27.853	561	1.0002	-1.0000	1.4064	1.2696	766.4	1124	.702	1.3823	1.2754	768.2	1093	.710
1600	2.1214-5	-965.5	9.9173	27.853	574	1.0003	-1.0000	1.4119	1.2683	778.3	1155	.701	1.3889	1.2738	780.0	1122	.710
1650	2.0571-5	-894.7	9.9608	27.852	586	1.0005	-1.0000	1.4181	1.2669	790.0	1188	.699	1.3952	1.2722	791.6	1150	.710
1700	1.9966-5	-823.6	10.0032	27.852	598	1.0008	-1.0000	1.4253	1.2654	801.4	1224	.696	1.4011	1.2707	803.0	1179	.710
1750	1.9395-5	-752.1	10.0447	27.851	609	1.0012	-1.0000	1.4340	1.2637	812.5	1265	.691	1.4068	1.2694	814.3	1207	.710
1800	1.8855-5	-680.2	10.0852	27.850	621	1.0019	-1.0001	1.4449	1.2616	823.4	1311	.685	1.4122	1.2681	825.5	1236	.710
1850	1.8345-5	-607.6	10.1250	27.848	633	1.0030	-1.0001	1.4592	1.2590	833.9	1366	.676	1.4174	1.2669	836.5	1264	.709
1900	1.7860-5	-534.2	10.1642	27.845	644	1.0047	-1.0001	1.4785	1.2558	844.1	1431	.665	1.4222	1.2657	847.4	1292	.709
1950	1.7399-5	-459.6	10.2029	27.841	656	1.0071	-1.0002	1.5052	1.2516	853.7	1513	.652	1.4269	1.2647	858.2	1320	.708
2000	1.6961-5	-383.5	10.2415	27.835	667	1.0108	-1.0003	1.5430	1.2460	862.8	1615	.637	1.4313	1.2637	868.9	1349	.708
2050	1.6542-5	-305.0	10.2802	27.826	678	1.0163	-1.0005	1.5974	1.2387	871.1	1747	.620	1.4354	1.2629	879.5	1377	.707
2100	1.6140-5	-223.3	10.3196	27.812	689	1.0248	-1.0008	1.6763	1.2292	878.5	1920	.602	1.4394	1.2621	890.1	1405	.706
2150	1.5753-5	-136.8	10.3603	27.792	700	1.0374	-1.0013	1.7908	1.2173	884.9	2150	.583	1.4431	1.2615	900.8	1433	.705
2200	1.5379-5	-43.4	10.4032	27.763	711	1.0560	-1.0019	1.9543	1.2033	890.4	2460	.565	1.4466	1.2611	911.5	1461	.704
2250	1.5014-5	59.6	10.4495	27.720	721	1.0825	-1.0029	2.1799	1.1882	895.5	2875	.547	1.4499	1.2608	922.4	1490	.702
2300	1.4655-5	175.7	10.5005	27.659	732	1.1183	-1.0042	2.4751	1.1733	900.6	3418	.530	1.4529	1.2609	933.7	1519	.700
2350	1.4300-5	308.2	10.5575	27.576	742	1.1635	-1.0060	2.8359	1.1600	906.6	4107	.512	1.4556	1.2612	945.3	1549	.697
2400	1.3947-5	460.2	10.6215	27.466	752	1.2167	-1.0081	3.2469	1.1493	913.8	4944	.494	1.4582	1.2620	957.5	1580	.694
2450	1.3593-5	633.4	10.6929	27.328	761	1.2758	-1.0106	3.6881	1.1412	922.3	5923	.474	1.4605	1.2631	970.3	1612	.690
2500	1.3239-5	829.2	10.7720	27.159	770	1.3389	-1.0134	4.1427	1.1352	932.1	7031	.454	1.4626	1.2647	983.9	1646	.685
2550	1.2884-5	1047.8	10.8585	26.960	779	1.4046	-1.0164	4.6011	1.1310	943.1	8254	.434	1.4646	1.2668	998.1	1682	.678
2600	1.2529-5	1289.3	10.9523	26.731	788	1.4722	-1.0196	5.0587	1.1282	955.2	9574	.416	1.4665	1.2692	1013.1	1721	.672
2650	1.2175-5	1553.6	11.0530	26.474	797	1.5412	-1.0231	5.5136	1.1263	968.2	10967	.400	1.4684	1.2721	1028.9	1762	.664
2700	1.1822-5	1840.5	11.1603	26.191	805	1.6108	-1.0268	5.9626	1.1253	982.1	12400	.387	1.4703	1.2754	1045.5	1807	.655
2750	1.1470-5	2149.7	11.2737	25.883	813	1.6800	-1.0306	6.3996	1.1249	996.9	13825	.376	1.4723	1.2791	1063.0	1855	.645
2800	1.1121-5	2480.1	11.3928	25.552	821	1.7468	-1.0345	6.8143	1.1251	1012.4	15181	.369	1.4745	1.2832	1081.2	1907	.635
2850	1.0777-5	2830.5	11.5168	25.203	829	1.8087	-1.0383	7.1909	1.1258	1028.8	16396	.364	1.4768	1.2877	1100.3	1962	.624
2900	1.0438-5	3198.2	11.6447	24.839	837	1.8623	-1.0419	7.5092	1.1270	1046.0	17390	.361	1.4792	1.2925	1120.1	2021	.613
2950	1.0107-5	3580.0	11.7752	24.466	845	1.9041	-1.0450	7.7463	1.1288	1063.8	18092	.362	1.4818	1.2976	1140.6	2083	.601
3000	9.7864-6	3971.1	11.9067	24.091	853	1.9304	-1.0474	7.8794	1.1311	1082.2	18439	.365	1.4844	1.3029	1161.5	2148	.590

TABLE 6.3D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
200	1.7796-3	-2935.1	6.4757	29.206	116	1.0000	-1.0000	1.0320	1.3809	280.4	156	.771	1.0320	1.3809	280.4	156	.771
210	1.6949-3	-2924.8	6.5261	29.206	122	1.0000	-1.0000	1.0340	1.3799	287.2	164	.767	1.0340	1.3799	287.2	164	.767
220	1.6178-3	-2914.4	6.5743	29.206	127	1.0000	-1.0000	1.0362	1.3788	293.9	173	.764	1.0362	1.3788	293.9	173	.764
230	1.5475-3	-2904.0	6.6204	29.206	133	1.0000	-1.0000	1.0384	1.3777	300.3	181	.761	1.0384	1.3777	300.3	181	.761
240	1.4830-3	-2893.6	6.6646	29.206	138	1.0000	-1.0000	1.0407	1.3766	306.7	189	.758	1.0407	1.3766	306.7	189	.758
250	1.4237-3	-2883.2	6.7072	29.206	143	1.0000	-1.0000	1.0430	1.3754	312.9	197	.756	1.0430	1.3754	312.9	197	.756
260	1.3689-3	-2872.8	6.7481	29.206	148	1.0000	-1.0000	1.0455	1.3742	318.9	206	.754	1.0454	1.3742	318.9	206	.754
270	1.3182-3	-2862.3	6.7876	29.206	153	1.0000	-1.0000	1.0480	1.3730	324.9	214	.753	1.0479	1.3730	324.9	214	.753
280	1.2712-3	-2851.8	6.8258	29.206	158	1.0000	-1.0000	1.0505	1.3717	330.7	221	.752	1.0504	1.3718	330.7	221	.752
290	1.2273-3	-2841.3	6.8627	29.206	163	1.0000	-1.0000	1.0532	1.3704	336.4	229	.751	1.0531	1.3705	336.4	229	.751
298	1.1938-3	-2832.7	6.8919	29.206	167	1.0000	-1.0000	1.0554	1.3694	340.9	235	.750	1.0552	1.3695	340.9	235	.750
300	1.1864-3	-2830.8	6.8984	29.206	168	1.0000	-1.0000	1.0559	1.3691	341.9	237	.750	1.0557	1.3692	342.0	237	.750
310	1.1481-3	-2820.2	6.9331	29.206	173	1.0000	-1.0000	1.0588	1.3678	347.4	244	.750	1.0584	1.3679	347.4	244	.750
320	1.1123-3	-2809.6	6.9668	29.206	178	1.0000	-1.0000	1.0617	1.3664	352.8	252	.750	1.0612	1.3666	352.8	251	.751
330	1.0786-3	-2799.0	6.9995	29.206	183	1.0001	-1.0000	1.0648	1.3650	358.1	259	.750	1.0641	1.3653	358.1	259	.751
340	1.0468-3	-2788.3	7.0313	29.206	187	1.0001	-1.0000	1.0680	1.3635	363.3	267	.749	1.0669	1.3639	363.3	266	.751
350	1.0169-3	-2777.6	7.0623	29.206	192	1.0002	-1.0000	1.0714	1.3620	368.4	274	.749	1.0699	1.3626	368.5	273	.751
360	9.8867-4	-2766.9	7.0926	29.206	196	1.0003	-1.0000	1.0750	1.3604	373.4	282	.748	1.0729	1.3612	373.5	280	.751
370	9.6194-4	-2756.1	7.1221	29.205	201	1.0004	-1.0000	1.0789	1.3588	378.3	290	.746	1.0759	1.3598	378.5	288	.751
380	9.3661-4	-2745.3	7.1509	29.205	205	1.0005	-1.0000	1.0830	1.3571	383.2	299	.744	1.0790	1.3584	383.4	295	.750
390	9.1258-4	-2734.4	7.1791	29.205	210	1.0007	-1.0000	1.0875	1.3552	387.9	308	.741	1.0821	1.3570	388.2	303	.750
400	8.8975-4	-2723.5	7.2067	29.204	214	1.0010	-1.0000	1.0925	1.3533	392.6	317	.738	1.0852	1.3556	392.9	310	.749
410	8.6802-4	-2712.6	7.2337	29.203	218	1.0013	-1.0001	1.0979	1.3512	397.2	326	.735	1.0885	1.3542	397.6	317	.749
420	8.4733-4	-2701.6	7.2602	29.202	223	1.0017	-1.0001	1.1039	1.3491	401.6	336	.731	1.0917	1.3528	402.2	325	.749
430	8.2758-4	-2690.5	7.2863	29.201	227	1.0022	-1.0001	1.1105	1.3467	406.1	347	.726	1.0950	1.3514	406.8	332	.748
440	8.0873-4	-2679.4	7.3119	29.199	231	1.0029	-1.0001	1.1180	1.3442	410.4	358	.721	1.0983	1.3500	411.3	339	.748
450	7.9070-4	-2668.1	7.3371	29.197	235	1.0037	-1.0002	1.1262	1.3415	414.6	370	.715	1.1017	1.3486	415.7	346	.748
460	7.7344-4	-2656.8	7.3620	29.194	239	1.0046	-1.0002	1.1355	1.3386	418.8	384	.708	1.1051	1.3472	420.1	353	.748
470	7.5690-4	-2645.4	7.3865	29.191	243	1.0058	-1.0003	1.1458	1.3355	422.8	398	.700	1.1086	1.3458	424.5	361	.748
480	7.4103-4	-2633.9	7.4107	29.187	247	1.0072	-1.0003	1.1574	1.3322	426.8	414	.691	1.1120	1.3444	428.7	368	.747
490	7.2578-4	-2622.3	7.4347	29.182	251	1.0088	-1.0004	1.1704	1.3286	430.7	431	.682	1.1156	1.3430	433.0	375	.747
500	7.1113-4	-2610.5	7.4585	29.176	255	1.0107	-1.0005	1.1849	1.3248	434.5	449	.672	1.1192	1.3416	437.2	382	.747
510	6.9702-4	-2598.6	7.4821	29.170	259	1.0130	-1.0006	1.2011	1.3208	438.2	470	.661	1.1228	1.3402	441.4	390	.746
520	6.8343-4	-2586.5	7.5056	29.162	263	1.0155	-1.0008	1.2191	1.3165	441.8	492	.651	1.1265	1.3389	445.5	397	.745
530	6.7032-4	-2574.2	7.5291	29.152	267	1.0185	-1.0009	1.2392	1.3120	445.3	517	.639	1.1302	1.3375	449.6	405	.744
540	6.5766-4	-2561.7	7.5524	29.141	270	1.0219	-1.0011	1.2615	1.3073	448.8	543	.628	1.1339	1.3362	453.7	412	.744
550	6.4542-4	-2548.9	7.5758	29.128	274	1.0257	-1.0013	1.2862	1.3024	452.2	571	.617	1.1377	1.3349	457.8	420	.742
560	6.3357-4	-2535.9	7.5992	29.114	278	1.0300	-1.0015	1.3136	1.2972	455.5	602	.607	1.1416	1.3336	461.8	428	.741
570	6.2210-4	-2522.7	7.6227	29.097	282	1.0348	-1.0018	1.3437	1.2919	458.7	634	.597	1.1455	1.3324	465.8	436	.740
580	6.1098-4	-2509.1	7.6464	29.078	285	1.0402	-1.0021	1.3770	1.2863	461.9	669	.587	1.1494	1.3311	469.8	444	.739
590	6.0018-4	-2495.1	7.6702	29.057	289	1.0462	-1.0024	1.4135	1.2807	465.0	705	.579	1.1534	1.3299	473.8	452	.737

TABLE 6.3D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
					MICRO						MICRO					MICRO	
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.8969-4	-2480.8	7.6943	29.033	293	1.0528	-1.0028	1.4535	1.2749	468.0	744	.572	1.1574	1.3288	477.8	461	.736
610	5.7948-4	-2466.0	7.7187	29.006	296	1.0601	-1.0032	1.4972	1.2689	471.0	784	.566	1.1615	1.3277	481.8	469	.734
620	5.6954-4	-2450.8	7.7434	28.975	300	1.0680	-1.0037	1.5448	1.2629	474.0	826	.561	1.1656	1.3266	485.8	478	.732
630	5.5985-4	-2435.1	7.7685	28.942	303	1.0766	-1.0041	1.5966	1.2569	476.9	869	.558	1.1697	1.3256	489.8	486	.730
640	5.5040-4	-2418.9	7.7941	28.905	307	1.0858	-1.0047	1.6525	1.2509	479.9	913	.556	1.1739	1.3246	493.8	495	.727
650	5.4117-4	-2402.0	7.8202	28.864	310	1.0957	-1.0052	1.7126	1.2449	482.8	958	.555	1.1781	1.3236	497.8	504	.725
660	5.3215-4	-2384.6	7.8468	28.820	314	1.1062	-1.0058	1.7767	1.2390	485.7	1004	.556	1.1823	1.3228	501.9	513	.723
670	5.2333-4	-2366.5	7.8740	28.772	317	1.1172	-1.0064	1.8444	1.2332	488.6	1049	.558	1.1865	1.3220	505.9	523	.720
680	5.1470-4	-2347.7	7.9019	28.719	321	1.1285	-1.0071	1.9149	1.2277	491.6	1093	.562	1.1907	1.3212	510.0	532	.718
690	5.0624-4	-2328.2	7.9304	28.663	324	1.1400	-1.0077	1.9870	1.2225	494.7	1136	.567	1.1949	1.3206	514.1	542	.715
700	4.9797-4	-2308.0	7.9595	28.603	327	1.1513	-1.0084	2.0588	1.2177	497.8	1175	.574	1.1991	1.3200	518.3	551	.712
710	4.8986-4	-2287.0	7.9892	28.540	331	1.1619	-1.0090	2.1276	1.2135	501.0	1210	.582	1.2032	1.3195	522.4	561	.710
720	4.8193-4	-2265.4	8.0194	28.473	334	1.1713	-1.0095	2.1899	1.2099	504.3	1237	.591	1.2073	1.3190	526.6	570	.707
730	4.7419-4	-2243.3	8.0499	28.404	337	1.1786	-1.0099	2.2411	1.2071	507.9	1255	.602	1.2114	1.3186	530.8	580	.705
740	4.6663-4	-2220.7	8.0807	28.335	340	1.1829	-1.0102	2.2758	1.2052	511.6	1261	.614	1.2153	1.3183	535.0	589	.702
750	4.5927-4	-2197.8	8.1114	28.265	344	1.1833	-1.0102	2.2883	1.2045	515.5	1252	.628	1.2192	1.3180	539.2	598	.700
760	4.5214-4	-2175.0	8.1416	28.197	347	1.1788	-1.0100	2.2733	1.2052	519.7	1228	.642	1.2229	1.3177	543.4	608	.698
770	4.4525-4	-2152.5	8.1711	28.133	350	1.1688	-1.0094	2.2275	1.2074	524.2	1187	.656	1.2265	1.3175	547.6	616	.696
780	4.3863-4	-2130.5	8.1993	28.074	353	1.1533	-1.0086	2.1511	1.2114	529.0	1133	.670	1.2299	1.3172	551.6	625	.694
790	4.3229-4	-2109.5	8.2261	28.023	356	1.1333	-1.0075	2.0496	1.2171	534.1	1071	.681	1.2332	1.3168	555.6	633	.693
800	4.2623-4	-2089.6	8.2512	27.980	359	1.1108	-1.0063	1.9334	1.2245	539.5	1006	.690	1.2363	1.3164	559.4	641	.692
810	4.2045-4	-2070.9	8.2745	27.945	362	1.0879	-1.0050	1.8153	1.2330	545.1	945	.695	1.2393	1.3159	563.1	649	.692
820	4.1493-4	-2053.3	8.2961	27.919	365	1.0670	-1.0039	1.7071	1.2418	550.7	894	.697	1.2422	1.3153	566.8	656	.691
830	4.0964-4	-2036.7	8.3162	27.899	368	1.0493	-1.0029	1.6161	1.2503	556.1	854	.697	1.2450	1.3147	570.3	663	.691
840	4.0456-4	-2020.9	8.3351	27.885	371	1.0354	-1.0021	1.5447	1.2576	561.2	825	.695	1.2477	1.3140	573.7	669	.692
850	3.9966-4	-2005.7	8.3530	27.875	374	1.0250	-1.0015	1.4916	1.2636	566.0	805	.693	1.2503	1.3133	577.0	676	.692
860	3.9491-4	-1991.0	8.3702	27.869	377	1.0174	-1.0010	1.4535	1.2681	570.4	792	.692	1.2529	1.3125	580.3	682	.692
870	3.9031-4	-1976.6	8.3869	27.864	380	1.0121	-1.0007	1.4268	1.2714	574.5	786	.690	1.2555	1.3118	583.6	689	.693
880	3.8583-4	-1962.4	8.4031	27.861	383	1.0084	-1.0005	1.4084	1.2738	578.4	783	.689	1.2580	1.3110	586.8	695	.693
890	3.8146-4	-1948.4	8.4189	27.858	386	1.0058	-1.0004	1.3959	1.2754	582.1	782	.689	1.2605	1.3102	589.9	701	.694
900	3.7720-4	-1934.5	8.4345	27.857	389	1.0041	-1.0003	1.3874	1.2765	585.6	784	.689	1.2630	1.3094	593.1	707	.694
910	3.7304-4	-1920.7	8.4498	27.856	392	1.0029	-1.0002	1.3816	1.2773	589.0	786	.688	1.2655	1.3087	596.2	714	.695
920	3.6898-4	-1906.9	8.4648	27.855	395	1.0020	-1.0001	1.3777	1.2778	592.4	790	.689	1.2679	1.3079	599.3	720	.695
930	3.6501-4	-1893.1	8.4797	27.855	398	1.0014	-1.0001	1.3750	1.2781	595.7	794	.689	1.2703	1.3071	602.4	726	.696
940	3.6112-4	-1879.4	8.4944	27.854	401	1.0010	-1.0001	1.3732	1.2784	598.9	799	.689	1.2727	1.3064	605.4	732	.696
950	3.5731-4	-1865.6	8.5089	27.854	404	1.0008	-1.0001	1.3720	1.2785	602.1	803	.689	1.2751	1.3057	608.5	738	.697
960	3.5359-4	-1851.9	8.5233	27.854	406	1.0005	-1.0000	1.3713	1.2786	605.3	808	.689	1.2774	1.3049	611.5	744	.697
970	3.4994-4	-1838.2	8.5375	27.854	409	1.0004	-1.0000	1.3708	1.2786	608.5	813	.690	1.2797	1.3042	614.5	750	.698
980	3.4637-4	-1824.5	8.5516	27.854	412	1.0003	-1.0000	1.3704	1.2787	611.6	818	.690	1.2820	1.3035	617.5	757	.698
990	3.4287-4	-1810.8	8.5655	27.853	415	1.0002	-1.0000	1.3703	1.2787	614.7	824	.691	1.2842	1.3028	620.5	763	.699

TABLE 6.3D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
1000	3.3944-4	-1797.1	8.5792	27.853	418	1.0002	-1.0000	1.3702	1.2786	617.8	829 .691	1.2864	1.3022	623.5	769 .699
1050	3.2328-4	-1728.6	8.6461	27.853	432	1.0001	-1.0000	1.3707	1.2785	633.0	855 .693	1.2970	1.2990	638.1	799 .701
1100	3.0858-4	-1660.0	8.7099	27.853	446	1.0000	-1.0000	1.3721	1.2781	647.8	881 .694	1.3072	1.2959	652.3	829 .703
1150	2.9516-4	-1591.4	8.7709	27.853	459	1.0000	-1.0000	1.3743	1.2775	662.2	907 .696	1.3171	1.2931	666.3	859 .704
1200	2.8286-4	-1522.6	8.8295	27.853	473	1.0000	-1.0000	1.3770	1.2768	676.3	933 .698	1.3265	1.2904	679.9	888 .706
1250	2.7155-4	-1453.6	8.8858	27.853	486	1.0000	-1.0000	1.3802	1.2760	690.0	959 .699	1.3356	1.2878	693.2	918 .707
1300	2.6111-4	-1384.5	8.9400	27.853	499	1.0000	-1.0000	1.3838	1.2750	703.4	985 .700	1.3443	1.2854	706.3	947 .708
1350	2.5144-4	-1315.3	8.9923	27.853	512	1.0000	-1.0000	1.3877	1.2741	716.5	1012 .701	1.3526	1.2832	719.1	977 .708
1400	2.4246-4	-1245.8	9.0428	27.853	524	1.0000	-1.0000	1.3918	1.2730	729.4	1039 .702	1.3605	1.2811	731.7	1006 .709
1450	2.3409-4	-1176.1	9.0917	27.853	537	1.0000	-1.0000	1.3961	1.2720	742.0	1066 .703	1.3681	1.2791	744.1	1035 .710
1500	2.2629-4	-1106.2	9.1391	27.853	549	1.0000	-1.0000	1.4006	1.2709	754.4	1093 .704	1.3754	1.2772	756.2	1064 .710
1550	2.1899-4	-1036.0	9.1851	27.853	561	1.0001	-1.0000	1.4051	1.2698	766.5	1120 .704	1.3823	1.2754	768.2	1093 .710
1600	2.1215-4	-965.6	9.2298	27.853	574	1.0001	-1.0000	1.4098	1.2687	778.4	1149 .704	1.3889	1.2738	780.0	1122 .710
1650	2.0572-4	-895.0	9.2733	27.853	586	1.0001	-1.0000	1.4147	1.2675	790.1	1177 .704	1.3952	1.2722	791.6	1150 .710
1700	1.9967-4	-824.2	9.3156	27.853	598	1.0002	-1.0000	1.4198	1.2664	801.7	1207 .703	1.4011	1.2707	803.0	1179 .710
1750	1.9396-4	-753.0	9.3568	27.853	609	1.0004	-1.0000	1.4254	1.2651	813.0	1238 .701	1.4068	1.2693	814.3	1207 .710
1800	1.8857-4	-681.6	9.3970	27.852	621	1.0006	-1.0000	1.4315	1.2638	824.1	1271 .699	1.4122	1.2680	825.4	1236 .710
1850	1.8347-4	-609.9	9.4364	27.852	633	1.0009	-1.0000	1.4386	1.2624	835.0	1307 .696	1.4173	1.2668	836.4	1264 .710
1900	1.7864-4	-537.7	9.4748	27.851	644	1.0014	-1.0000	1.4470	1.2608	845.7	1346 .693	1.4222	1.2657	847.3	1292 .709
1950	1.7405-4	-465.1	9.5125	27.849	656	1.0021	-1.0001	1.4573	1.2589	856.1	1389 .688	1.4268	1.2646	858.0	1320 .709
2000	1.6968-4	-392.0	9.5496	27.848	667	1.0032	-1.0001	1.4703	1.2567	866.3	1439 .681	1.4312	1.2636	868.6	1348 .708
2050	1.6553-4	-318.0	9.5861	27.845	678	1.0046	-1.0002	1.4872	1.2539	876.1	1496 .674	1.4353	1.2627	879.2	1375 .708
2100	1.6157-4	-243.1	9.6222	27.841	689	1.0068	-1.0002	1.5097	1.2504	885.5	1564 .665	1.4393	1.2618	889.6	1402 .707
2150	1.5778-4	-166.9	9.6581	27.836	700	1.0098	-1.0003	1.5398	1.2461	894.5	1646 .655	1.4430	1.2610	899.9	1430 .707
2200	1.5415-4	-89.0	9.6939	27.828	711	1.0141	-1.0005	1.5807	1.2406	903.0	1747 .643	1.4466	1.2603	910.2	1457 .706
2250	1.5067-4	-8.6	9.7300	27.818	722	1.0203	-1.0007	1.6364	1.2337	910.9	1873 .631	1.4499	1.2597	920.4	1485 .705
2300	1.4731-4	75.0	9.7668	27.803	733	1.0290	-1.0010	1.7120	1.2254	918.1	2031 .617	1.4531	1.2591	930.6	1512 .704
2350	1.4407-4	163.0	9.8046	27.782	743	1.0410	-1.0015	1.8135	1.2156	924.6	2232 .604	1.4560	1.2587	940.9	1540 .703
2400	1.4093-4	256.9	9.8441	27.753	754	1.0574	-1.0021	1.9469	1.2048	930.7	2488 .590	1.4588	1.2584	951.2	1567 .701
2450	1.3786-4	358.3	9.8860	27.715	764	1.0789	-1.0029	2.1166	1.1934	936.6	2808 .576	1.4614	1.2583	961.7	1595 .700
2500	1.3485-4	469.1	9.9307	27.663	774	1.1058	-1.0040	2.3232	1.1823	942.5	3203 .561	1.4638	1.2584	972.4	1624 .698
2550	1.3189-4	591.2	9.9791	27.597	784	1.1381	-1.0054	2.5626	1.1722	949.0	3679 .546	1.4660	1.2587	983.4	1653 .695
2600	1.2896-4	725.8	10.0314	27.513	794	1.1748	-1.0070	2.8263	1.1636	956.2	4232 .530	1.4680	1.2592	994.7	1682 .693
2650	1.2606-4	874.0	10.0878	27.412	803	1.2148	-1.0088	3.1040	1.1567	964.2	4860 .513	1.4698	1.2600	1006.4	1712 .689
2700	1.2318-4	1036.3	10.1485	27.291	812	1.2569	-1.0107	3.3866	1.1513	973.1	5556 .495	1.4715	1.2611	1018.5	1743 .686
2750	1.2032-4	1212.7	10.2132	27.152	821	1.3003	-1.0128	3.6677	1.1472	982.9	6312 .477	1.4730	1.2624	1031.1	1775 .682
2800	1.1749-4	1403.0	10.2818	26.995	830	1.3444	-1.0151	3.9439	1.1442	993.4	7122 .460	1.4744	1.2640	1044.1	1808 .677
2850	1.1468-4	1606.9	10.3539	26.820	839	1.3888	-1.0175	4.2136	1.1421	1004.5	7980 .443	1.4758	1.2659	1057.6	1842 .672
2900	1.1190-4	1824.2	10.4295	26.629	848	1.4335	-1.0200	4.4767	1.1407	1016.3	8878 .427	1.4772	1.2680	1071.5	1878 .667
2950	1.0915-4	2054.5	10.5082	26.423	856	1.4782	-1.0226	4.7329	1.1399	1028.6	9804 .413	1.4786	1.2704	1085.9	1916 .661
3000	1.0644-4	2297.4	10.5899	26.201	864	1.5228	-1.0253	4.9816	1.1395	1041.5	10743 .401	1.4800	1.2729	1100.8	1957 .654

TABLE 6.4D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
200	1.7796-2	-2935.1	5.8202	29.206	116	1.0000	-1.0000	1.0320	1.3809	280.4	156	.771	1.0320	1.3809	280.4	156 .771
210	1.6949-2	-2924.8	5.8706	29.206	122	1.0000	-1.0000	1.0341	1.3799	287.2	164	.767	1.0340	1.3799	287.2	164 .767
220	1.6178-2	-2914.4	5.9188	29.206	127	1.0000	-1.0000	1.0362	1.3788	293.9	173	.764	1.0362	1.3788	293.9	173 .764
230	1.5475-2	-2904.0	5.9649	29.206	133	1.0000	-1.0000	1.0384	1.3777	300.3	181	.761	1.0384	1.3777	300.3	181 .761
240	1.4830-2	-2893.6	6.0091	29.206	138	1.0000	-1.0000	1.0407	1.3766	306.7	189	.758	1.0407	1.3766	306.7	189 .758
250	1.4237-2	-2883.2	6.0517	29.206	143	1.0000	-1.0000	1.0430	1.3754	312.9	197	.756	1.0430	1.3754	312.9	197 .756
260	1.3689-2	-2872.8	6.0926	29.206	148	1.0000	-1.0000	1.0454	1.3742	318.9	206	.754	1.0454	1.3742	318.9	206 .754
270	1.3182-2	-2862.3	6.1321	29.206	153	1.0000	-1.0000	1.0479	1.3730	324.9	214	.753	1.0479	1.3730	324.9	214 .753
280	1.2712-2	-2851.8	6.1703	29.206	158	1.0000	-1.0000	1.0505	1.3717	330.7	221	.752	1.0504	1.3718	330.7	221 .752
290	1.2273-2	-2841.3	6.2072	29.206	163	1.0000	-1.0000	1.0531	1.3705	336.4	229	.751	1.0531	1.3705	336.4	229 .751
298	1.1938-2	-2832.7	6.2364	29.206	167	1.0000	-1.0000	1.0553	1.3694	340.9	235	.750	1.0552	1.3695	340.9	235 .750
300	1.1864-2	-2830.8	6.2429	29.206	168	1.0000	-1.0000	1.0558	1.3692	342.0	237	.750	1.0557	1.3692	342.0	237 .750
310	1.1481-2	-2820.2	6.2776	29.206	173	1.0000	-1.0000	1.0586	1.3679	347.4	244	.750	1.0584	1.3679	347.4	244 .750
320	1.1123-2	-2809.6	6.3112	29.206	178	1.0000	-1.0000	1.0614	1.3665	352.8	252	.750	1.0612	1.3666	352.8	251 .751
330	1.0786-2	-2799.0	6.3440	29.206	183	1.0000	-1.0000	1.0643	1.3652	358.1	259	.751	1.0641	1.3653	358.1	259 .751
340	1.0468-2	-2788.3	6.3758	29.206	187	1.0000	-1.0000	1.0673	1.3638	363.3	266	.751	1.0669	1.3639	363.3	266 .751
350	1.0169-2	-2777.6	6.4068	29.206	192	1.0000	-1.0000	1.0704	1.3624	368.4	273	.751	1.0699	1.3626	368.5	273 .751
360	9.8868-3	-2766.9	6.4370	29.206	196	1.0001	-1.0000	1.0736	1.3609	373.5	281	.750	1.0728	1.3612	373.5	280 .751
370	9.6196-3	-2756.1	6.4664	29.206	201	1.0001	-1.0000	1.0769	1.3594	378.4	289	.749	1.0759	1.3598	378.5	288 .751
380	9.3664-3	-2745.4	6.4952	29.206	205	1.0001	-1.0000	1.0803	1.3579	383.3	296	.748	1.0789	1.3584	383.3	295 .750
390	9.1262-3	-2734.5	6.5233	29.206	210	1.0002	-1.0000	1.0839	1.3564	388.1	304	.747	1.0821	1.3570	388.2	303 .750
400	8.8980-3	-2723.7	6.5508	29.206	214	1.0003	-1.0000	1.0876	1.3548	392.8	312	.746	1.0852	1.3556	392.9	310 .749
410	8.6809-3	-2712.8	6.5777	29.205	218	1.0004	-1.0000	1.0915	1.3532	397.4	320	.745	1.0884	1.3542	397.6	317 .749
420	8.4741-3	-2701.8	6.6040	29.205	223	1.0005	-1.0000	1.0956	1.3515	402.0	328	.743	1.0916	1.3528	402.2	324 .749
430	8.2769-3	-2690.9	6.6299	29.205	227	1.0007	-1.0000	1.0999	1.3498	406.5	336	.741	1.0949	1.3514	406.7	332 .749
440	8.0886-3	-2679.8	6.6552	29.204	231	1.0009	-1.0000	1.1045	1.3480	410.9	345	.740	1.0982	1.3500	411.2	339 .749
450	7.9087-3	-2668.8	6.6801	29.203	235	1.0011	-1.0001	1.1094	1.3462	415.3	354	.737	1.1015	1.3486	415.7	346 .748
460	7.7366-3	-2657.7	6.7045	29.203	239	1.0015	-1.0001	1.1147	1.3443	419.6	363	.735	1.1049	1.3471	420.0	353 .748
470	7.5717-3	-2646.5	6.7285	29.202	243	1.0018	-1.0001	1.1203	1.3423	423.8	372	.732	1.1083	1.3457	424.4	360 .748
480	7.4136-3	-2635.2	6.7522	29.200	247	1.0023	-1.0001	1.1263	1.3402	428.0	382	.729	1.1117	1.3443	428.6	367 .748
490	7.2620-3	-2624.0	6.7755	29.199	251	1.0028	-1.0001	1.1328	1.3380	432.1	392	.725	1.1152	1.3429	432.9	374 .748
500	7.1163-3	-2612.6	6.7984	29.197	255	1.0034	-1.0002	1.1399	1.3358	436.1	403	.721	1.1186	1.3415	437.0	381 .748
510	6.9762-3	-2601.2	6.8211	29.195	259	1.0041	-1.0002	1.1475	1.3334	440.1	415	.716	1.1221	1.3401	441.2	388 .748
520	6.8415-3	-2589.6	6.8434	29.192	263	1.0050	-1.0002	1.1557	1.3309	444.0	427	.711	1.1257	1.3387	445.3	396 .747
530	6.7117-3	-2578.0	6.8655	29.189	267	1.0060	-1.0003	1.1647	1.3283	447.8	440	.705	1.1292	1.3373	449.3	403 .747
540	6.5866-3	-2566.3	6.8874	29.186	270	1.0071	-1.0004	1.1745	1.3256	451.6	454	.699	1.1328	1.3360	453.3	410 .746
550	6.4659-3	-2554.5	6.9091	29.181	274	1.0084	-1.0004	1.1852	1.3228	455.3	469	.692	1.1364	1.3346	457.3	418 .746
560	6.3494-3	-2542.6	6.9305	29.177	278	1.0099	-1.0005	1.1968	1.3198	458.9	485	.685	1.1401	1.3333	461.3	425 .745
570	6.2368-3	-2530.6	6.9518	29.171	282	1.0116	-1.0006	1.2096	1.3167	462.5	502	.678	1.1437	1.3319	465.2	432 .745
580	6.1280-3	-2518.4	6.9730	29.165	285	1.0135	-1.0007	1.2235	1.3134	466.0	520	.671	1.1474	1.3306	469.1	440 .744
590	6.0226-3	-2506.1	6.9940	29.158	289	1.0156	-1.0008	1.2387	1.3100	469.5	539	.664	1.1511	1.3293	472.9	447 .743

TABLE 6.4D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN	CP	GAM	VS	COND PRAN
					MICRO						MICRO				MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
600	5.9206-3	-2493.7	7.0150	29.149	293	1.0180	-1.0010	1.2553	1.3064	472.8	560 .656	1.1548	1.3280	476.7	455 .743
610	5.8216-3	-2481.0	7.0359	29.140	296	1.0208	-1.0011	1.2735	1.3026	476.2	581 .649	1.1585	1.3268	480.5	463 .742
620	5.7257-3	-2468.2	7.0567	29.129	300	1.0238	-1.0013	1.2935	1.2987	479.4	605 .641	1.1623	1.3255	484.3	470 .741
630	5.6325-3	-2455.1	7.0776	29.118	303	1.0272	-1.0015	1.3153	1.2946	482.6	629 .634	1.1661	1.3243	488.1	478 .740
640	5.5419-3	-2441.9	7.0985	29.104	307	1.0309	-1.0017	1.3391	1.2904	485.7	655 .627	1.1699	1.3231	491.8	486 .739
650	5.4539-3	-2428.4	7.1194	29.089	310	1.0351	-1.0019	1.3651	1.2859	488.8	683 .621	1.1736	1.3219	495.6	494 .737
660	5.3682-3	-2414.6	7.1405	29.073	314	1.0396	-1.0022	1.3936	1.2814	491.8	711 .615	1.1775	1.3208	499.3	502 .736
670	5.2847-3	-2400.5	7.1617	29.055	317	1.0447	-1.0025	1.4245	1.2767	494.8	742 .609	1.1813	1.3197	503.0	510 .735
680	5.2034-3	-2386.1	7.1830	29.034	321	1.0502	-1.0028	1.4582	1.2719	497.7	774 .604	1.1851	1.3186	506.7	518 .733
690	5.1240-3	-2371.3	7.2046	29.012	324	1.0562	-1.0032	1.4948	1.2669	500.5	807 .600	1.1889	1.3176	510.4	526 .732
700	5.0465-3	-2356.2	7.2264	28.987	327	1.0627	-1.0036	1.5343	1.2620	503.4	842 .597	1.1928	1.3166	514.2	535 .731
710	4.9707-3	-2340.6	7.2484	28.960	331	1.0698	-1.0040	1.5769	1.2569	506.2	879 .594	1.1966	1.3157	517.9	543 .729
720	4.8966-3	-2324.6	7.2708	28.930	334	1.0774	-1.0044	1.6225	1.2519	509.0	916 .592	1.2004	1.3148	521.6	551 .728
730	4.8241-3	-2308.1	7.2935	28.897	337	1.0856	-1.0049	1.6711	1.2469	511.8	955 .591	1.2042	1.3139	525.3	560 .726
740	4.7531-3	-2291.2	7.3166	28.862	341	1.0942	-1.0054	1.7225	1.2420	514.6	994 .590	1.2080	1.3132	529.1	568 .724
750	4.6835-3	-2273.7	7.3401	28.824	344	1.1033	-1.0059	1.7763	1.2373	517.4	1034 .591	1.2118	1.3124	532.9	577 .723
760	4.6153-3	-2255.6	7.3640	28.783	347	1.1128	-1.0065	1.8321	1.2327	520.2	1075 .592	1.2155	1.3117	536.6	585 .721
770	4.5484-3	-2237.0	7.3883	28.738	350	1.1225	-1.0070	1.8891	1.2284	523.1	1114 .594	1.2192	1.3111	540.4	594 .719
780	4.4827-3	-2217.9	7.4130	28.691	354	1.1323	-1.0076	1.9463	1.2244	526.1	1153 .597	1.2229	1.3106	544.3	603 .717
790	4.4182-3	-2198.1	7.4382	28.641	357	1.1419	-1.0082	2.0026	1.2207	529.1	1189 .601	1.2265	1.3101	548.1	611 .716
800	4.3550-3	-2177.8	7.4637	28.588	360	1.1511	-1.0088	2.0562	1.2175	532.2	1222 .605	1.2301	1.3096	552.0	620 .714
810	4.2929-3	-2157.0	7.4896	28.533	363	1.1594	-1.0093	2.1053	1.2148	535.5	1250 .611	1.2337	1.3092	555.9	629 .712
820	4.2321-3	-2135.7	7.5157	28.476	366	1.1666	-1.0097	2.1478	1.2126	538.8	1273 .617	1.2371	1.3089	559.8	637 .710
830	4.1725-3	-2114.1	7.5419	28.418	369	1.1722	-1.0101	2.1811	1.2110	542.3	1288 .625	1.2405	1.3086	563.7	646 .709
840	4.1142-3	-2092.2	7.5682	28.359	372	1.1756	-1.0103	2.2027	1.2101	545.9	1294 .633	1.2438	1.3084	567.7	654 .707
850	4.0574-3	-2070.1	7.5943	28.299	375	1.1763	-1.0104	2.2101	1.2099	549.7	1290 .642	1.2471	1.3082	571.6	663 .706
860	4.0020-3	-2048.0	7.6201	28.242	378	1.1739	-1.0104	2.2011	1.2106	553.6	1276 .651	1.2503	1.3080	575.5	671 .704
870	3.9481-3	-2026.1	7.6454	28.186	381	1.1681	-1.0101	2.1743	1.2122	557.8	1252 .661	1.2533	1.3078	579.3	679 .703
880	3.8960-3	-2004.6	7.6700	28.133	384	1.1588	-1.0096	2.1295	1.2148	562.1	1217 .671	1.2563	1.3076	583.2	687 .702
890	3.8456-3	-1983.6	7.6938	28.084	386	1.1463	-1.0089	2.0681	1.2183	566.6	1175 .680	1.2592	1.3074	586.9	695 .701
900	3.7969-3	-1963.3	7.7165	28.041	389	1.1310	-1.0080	1.9934	1.2229	571.3	1128 .688	1.2620	1.3071	590.6	702 .700
910	3.7501-3	-1943.7	7.7381	28.003	392	1.1140	-1.0070	1.9102	1.2283	576.1	1079 .695	1.2647	1.3068	594.2	709 .699
920	3.7051-3	-1925.1	7.7585	27.971	395	1.0964	-1.0060	1.8244	1.2344	581.0	1031 .699	1.2674	1.3064	597.7	717 .699
930	3.6618-3	-1907.2	7.7777	27.944	398	1.0793	-1.0050	1.7415	1.2408	585.9	988 .701	1.2699	1.3060	601.1	724 .699
940	3.6201-3	-1890.2	7.7959	27.923	401	1.0637	-1.0040	1.6661	1.2472	590.8	951 .702	1.2724	1.3055	604.5	730 .698
950	3.5798-3	-1873.9	7.8132	27.906	404	1.0501	-1.0032	1.6011	1.2531	595.6	921 .702	1.2749	1.3050	607.8	737 .698
960	3.5409-3	-1858.2	7.8297	27.893	407	1.0387	-1.0025	1.5472	1.2585	600.1	898 .700	1.2773	1.3044	611.0	743 .699
970	3.5031-3	-1842.9	7.8455	27.883	409	1.0296	-1.0019	1.5042	1.2630	604.4	881 .699	1.2796	1.3038	614.1	750 .699
980	3.4665-3	-1828.0	7.8607	27.876	412	1.0224	-1.0015	1.4708	1.2667	608.5	869 .698	1.2819	1.3032	617.2	756 .699
990	3.4308-3	-1813.5	7.8755	27.870	415	1.0169	-1.0011	1.4453	1.2696	612.3	862 .696	1.2842	1.3026	620.3	762 .699

TABLE 6.4D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3960-3	-1799.1	7.8900	27.866	418	1.0127	-1.0009	1.4262	1.2718	616.0	857	.695	1.2864	1.3020	623.3	768	.700
1050	3.2332-3	-1729.1	7.9583	27.857	432	1.0032	-1.0002	1.3838	1.2769	632.6	861	.694	1.2970	1.2989	638.0	799	.701
1100	3.0859-3	-1660.2	8.0224	27.855	446	1.0009	-1.0001	1.3756	1.2777	647.7	883	.695	1.3072	1.2959	652.3	829	.703
1150	2.9517-3	-1591.4	8.0835	27.854	459	1.0003	-1.0000	1.3754	1.2774	662.2	907	.696	1.3171	1.2931	666.2	859	.704
1200	2.8287-3	-1522.6	8.1421	27.854	473	1.0002	-1.0000	1.3775	1.2767	676.3	933	.698	1.3265	1.2904	679.9	888	.706
1250	2.7155-3	-1453.7	8.1984	27.853	486	1.0001	-1.0000	1.3804	1.2759	690.0	959	.699	1.3356	1.2878	693.2	918	.707
1300	2.6111-3	-1384.6	8.2526	27.853	499	1.0001	-1.0000	1.3839	1.2750	703.4	985	.700	1.3443	1.2854	706.3	947	.708
1350	2.5144-3	-1315.3	8.3049	27.853	512	1.0000	-1.0000	1.3878	1.2741	716.5	1012	.702	1.3526	1.2832	719.1	977	.708
1400	2.4246-3	-1245.8	8.3554	27.853	524	1.0000	-1.0000	1.3918	1.2730	729.4	1038	.703	1.3605	1.2811	731.7	1006	.709
1450	2.3410-3	-1176.1	8.4044	27.853	537	1.0000	-1.0000	1.3961	1.2720	742.0	1065	.703	1.3681	1.2791	744.1	1035	.710
1500	2.2629-3	-1106.2	8.4518	27.853	549	1.0000	-1.0000	1.4004	1.2709	754.4	1092	.704	1.3754	1.2772	756.2	1064	.710
1550	2.1899-3	-1036.0	8.4978	27.853	561	1.0000	-1.0000	1.4048	1.2699	766.5	1119	.705	1.3823	1.2754	768.2	1093	.710
1600	2.1215-3	-965.7	8.5424	27.853	574	1.0000	-1.0000	1.4092	1.2688	778.5	1146	.705	1.3889	1.2738	780.0	1122	.710
1650	2.0572-3	-895.1	8.5859	27.853	586	1.0001	-1.0000	1.4137	1.2677	790.2	1174	.705	1.3952	1.2722	791.6	1150	.710
1700	1.9967-3	-824.3	8.6281	27.853	598	1.0001	-1.0000	1.4181	1.2667	801.7	1202	.705	1.4011	1.2707	803.0	1179	.710
1750	1.9396-3	-753.3	8.6693	27.853	609	1.0001	-1.0000	1.4227	1.2656	813.1	1230	.705	1.4068	1.2693	814.3	1207	.710
1800	1.8857-3	-682.1	8.7094	27.853	621	1.0002	-1.0000	1.4274	1.2646	824.3	1259	.704	1.4122	1.2680	825.4	1236	.710
1850	1.8348-3	-610.6	8.7486	27.853	633	1.0003	-1.0000	1.4323	1.2635	835.3	1289	.703	1.4173	1.2668	836.4	1264	.710
1900	1.7865-3	-538.8	8.7869	27.852	644	1.0004	-1.0000	1.4375	1.2624	846.2	1319	.702	1.4222	1.2657	847.3	1292	.709
1950	1.7406-3	-466.8	8.8243	27.852	656	1.0007	-1.0000	1.4431	1.2612	856.8	1351	.700	1.4268	1.2646	858.0	1319	.709
2000	1.6971-3	-394.5	8.8609	27.851	667	1.0010	-1.0000	1.4495	1.2600	867.3	1385	.698	1.4312	1.2636	868.6	1347	.708
2050	1.6556-3	-321.8	8.8968	27.851	678	1.0014	-1.0000	1.4569	1.2586	877.6	1421	.695	1.4353	1.2626	879.0	1374	.708
2100	1.6162-3	-248.8	8.9320	27.849	689	1.0020	-1.0001	1.4657	1.2570	887.7	1460	.692	1.4393	1.2617	889.4	1402	.708
2150	1.5785-3	-175.2	8.9666	27.848	700	1.0029	-1.0001	1.4764	1.2552	897.6	1503	.688	1.4430	1.2609	899.7	1429	.707
2200	1.5425-3	-101.1	9.0007	27.846	711	1.0041	-1.0001	1.4897	1.2530	907.2	1551	.683	1.4465	1.2601	909.8	1456	.707
2250	1.5080-3	-26.2	9.0344	27.843	722	1.0057	-1.0002	1.5065	1.2504	916.6	1606	.677	1.4499	1.2594	919.9	1483	.706
2300	1.4750-3	49.6	9.0677	27.839	733	1.0079	-1.0003	1.5280	1.2473	925.6	1669	.671	1.4531	1.2587	929.9	1510	.705
2350	1.4434-3	126.7	9.1008	27.833	743	1.0108	-1.0004	1.5554	1.2436	934.3	1742	.664	1.4561	1.2581	939.8	1537	.704
2400	1.4129-3	205.3	9.1339	27.826	754	1.0148	-1.0005	1.5908	1.2390	942.6	1829	.656	1.4590	1.2576	949.6	1564	.703
2450	1.3836-3	285.9	9.1672	27.816	764	1.0202	-1.0007	1.6361	1.2337	950.5	1933	.647	1.4617	1.2571	959.5	1591	.702
2500	1.3553-3	369.1	9.2008	27.802	775	1.0273	-1.0010	1.6939	1.2274	958.0	2058	.638	1.4642	1.2567	969.3	1618	.701
2550	1.3279-3	455.6	9.2350	27.785	785	1.0364	-1.0014	1.7666	1.2204	965.0	2208	.628	1.4666	1.2563	979.1	1645	.700
2600	1.3013-3	546.1	9.2702	27.762	795	1.0482	-1.0019	1.8567	1.2127	971.7	2389	.618	1.4689	1.2561	989.0	1672	.699
2650	1.2754-3	641.6	9.3066	27.733	805	1.0628	-1.0025	1.9655	1.2046	978.3	2605	.607	1.4710	1.2560	998.9	1700	.697
2700	1.2501-3	742.9	9.3445	27.696	815	1.0805	-1.0032	2.0933	1.1965	984.8	2860	.597	1.4729	1.2560	1009.0	1727	.695
2750	1.2253-3	851.2	9.3842	27.650	825	1.1012	-1.0041	2.2383	1.1887	991.5	3156	.585	1.4748	1.2561	1019.2	1754	.694
2800	1.2010-3	967.0	9.4259	27.594	835	1.1246	-1.0052	2.3971	1.1817	998.5	3492	.573	1.4764	1.2564	1029.6	1782	.692
2850	1.1771-3	1091.0	9.4698	27.527	844	1.1501	-1.0064	2.5651	1.1756	1006.0	3867	.560	1.4780	1.2569	1040.2	1809	.690
2900	1.1535-3	1223.6	9.5159	27.449	854	1.1772	-1.0077	2.7375	1.1704	1014.0	4277	.546	1.4794	1.2575	1051.0	1837	.687
2950	1.1302-3	1364.8	9.5642	27.359	863	1.2052	-1.0092	2.9100	1.1662	1022.5	4719	.532	1.4807	1.2582	1062.1	1866	.685
3000	1.1073-3	1514.5	9.6145	27.259	872	1.2337	-1.0107	3.0794	1.1629	1031.6	5190	.517	1.4819	1.2592	1073.4	1894	.682

TABLE 6.5D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
200	8.8981-2	-2935.1	5.3620	29.206	116	1.0000	-1.0000	1.0320	1.3809	280.4	156	.771	1.0320	1.3809	280.4	156	.771
210	8.4744-2	-2924.8	5.4124	29.206	122	1.0000	-1.0000	1.0341	1.3799	287.2	164	.767	1.0340	1.3799	287.2	164	.767
220	8.0892-2	-2914.4	5.4606	29.206	127	1.0000	-1.0000	1.0362	1.3788	293.9	173	.764	1.0362	1.3788	293.9	173	.764
230	7.7375-2	-2904.0	5.5067	29.206	133	1.0000	-1.0000	1.0384	1.3777	300.3	181	.761	1.0384	1.3777	300.3	181	.761
240	7.4151-2	-2893.6	5.5510	29.206	138	1.0000	-1.0000	1.0407	1.3766	306.7	189	.758	1.0407	1.3766	306.7	189	.758
250	7.1185-2	-2883.2	5.5935	29.206	143	1.0000	-1.0000	1.0430	1.3754	312.9	197	.756	1.0430	1.3754	312.9	197	.756
260	6.8447-2	-2872.8	5.6344	29.206	148	1.0000	-1.0000	1.0455	1.3742	318.9	206	.754	1.0454	1.3742	318.9	206	.754
270	6.5912-2	-2862.3	5.6739	29.206	153	1.0000	-1.0000	1.0479	1.3730	324.9	214	.753	1.0479	1.3730	324.9	214	.753
280	6.3558-2	-2851.8	5.7121	29.206	158	1.0000	-1.0000	1.0505	1.3717	330.7	221	.752	1.0504	1.3718	330.7	221	.752
290	6.1367-2	-2841.3	5.7490	29.206	163	1.0000	-1.0000	1.0531	1.3705	336.4	229	.751	1.0531	1.3705	336.4	229	.751
298	5.9689-2	-2832.7	5.7782	29.206	167	1.0000	-1.0000	1.0553	1.3694	340.9	235	.750	1.0552	1.3695	340.9	235	.750
300	5.9321-2	-2830.8	5.7848	29.206	168	1.0000	-1.0000	1.0558	1.3692	342.0	237	.750	1.0557	1.3692	342.0	237	.750
310	5.7408-2	-2820.2	5.8194	29.206	173	1.0000	-1.0000	1.0586	1.3679	347.4	244	.750	1.0584	1.3679	347.4	244	.750
320	5.5614-2	-2809.6	5.8531	29.206	178	1.0000	-1.0000	1.0614	1.3665	352.8	251	.751	1.0612	1.3666	352.8	251	.751
330	5.3928-2	-2799.0	5.8858	29.206	183	1.0000	-1.0000	1.0642	1.3652	358.1	259	.751	1.0641	1.3653	358.1	259	.751
340	5.2342-2	-2788.3	5.9176	29.206	187	1.0000	-1.0000	1.0672	1.3638	363.3	266	.751	1.0669	1.3639	363.3	266	.751
350	5.0847-2	-2777.6	5.9486	29.206	192	1.0000	-1.0000	1.0702	1.3624	368.4	273	.751	1.0699	1.3626	368.5	273	.751
360	4.9434-2	-2766.9	5.9788	29.206	196	1.0000	-1.0000	1.0733	1.3610	373.5	281	.751	1.0728	1.3612	373.5	280	.751
370	4.8098-2	-2756.1	6.0082	29.206	201	1.0000	-1.0000	1.0764	1.3596	378.4	288	.750	1.0759	1.3598	378.5	288	.751
380	4.6832-2	-2745.4	6.0370	29.206	205	1.0000	-1.0000	1.0796	1.3581	383.3	296	.749	1.0789	1.3584	383.3	295	.750
390	4.5631-2	-2734.6	6.0650	29.206	210	1.0001	-1.0000	1.0830	1.3567	388.1	303	.749	1.0820	1.3570	388.2	303	.750
400	4.4491-2	-2723.7	6.0925	29.206	214	1.0001	-1.0000	1.0864	1.3552	392.8	311	.748	1.0852	1.3556	392.9	310	.749
410	4.3405-2	-2712.8	6.1194	29.206	218	1.0002	-1.0000	1.0899	1.3537	397.5	319	.747	1.0884	1.3542	397.6	317	.749
420	4.2372-2	-2701.9	6.1457	29.206	223	1.0002	-1.0000	1.0935	1.3521	402.1	326	.746	1.0916	1.3528	402.2	324	.749
430	4.1386-2	-2691.0	6.1715	29.206	227	1.0003	-1.0000	1.0973	1.3506	406.6	334	.745	1.0949	1.3514	406.7	332	.749
440	4.0445-2	-2680.0	6.1967	29.205	231	1.0004	-1.0000	1.1011	1.3490	411.1	342	.745	1.0981	1.3500	411.2	339	.749
450	3.9546-2	-2668.9	6.2215	29.205	235	1.0005	-1.0000	1.1052	1.3474	415.5	349	.744	1.1015	1.3486	415.6	346	.749
460	3.8686-2	-2657.9	6.2459	29.205	239	1.0006	-1.0000	1.1094	1.3457	419.8	357	.742	1.1048	1.3471	420.0	353	.749
470	3.7862-2	-2646.7	6.2698	29.204	243	1.0008	-1.0000	1.1137	1.3440	424.1	365	.741	1.1082	1.3457	424.3	360	.748
480	3.7073-2	-2635.6	6.2933	29.204	247	1.0010	-1.0000	1.1183	1.3423	428.3	374	.739	1.1116	1.3443	428.6	367	.748
490	3.6315-2	-2624.4	6.3164	29.203	251	1.0012	-1.0001	1.1231	1.3406	432.5	382	.738	1.1150	1.3429	432.8	374	.748
500	3.5588-2	-2613.1	6.3391	29.202	255	1.0015	-1.0001	1.1282	1.3388	436.6	391	.736	1.1185	1.3415	437.0	381	.748
510	3.4889-2	-2601.8	6.3615	29.201	259	1.0018	-1.0001	1.1335	1.3369	440.6	400	.733	1.1220	1.3401	441.1	388	.748
520	3.4217-2	-2590.4	6.3836	29.200	263	1.0022	-1.0001	1.1392	1.3350	444.6	410	.730	1.1255	1.3387	445.2	395	.748
530	3.3570-2	-2579.0	6.4053	29.199	266	1.0026	-1.0001	1.1452	1.3330	448.5	420	.727	1.1290	1.3373	449.2	402	.748
540	3.2946-2	-2567.5	6.4268	29.197	270	1.0031	-1.0002	1.1515	1.3310	452.4	430	.724	1.1325	1.3359	453.2	410	.747
550	3.2345-2	-2556.0	6.4480	29.196	274	1.0037	-1.0002	1.1583	1.3289	456.2	441	.721	1.1361	1.3345	457.2	417	.747
560	3.1765-2	-2544.4	6.4689	29.193	278	1.0044	-1.0002	1.1655	1.3267	460.0	452	.717	1.1397	1.3332	461.1	424	.746
570	3.1205-2	-2532.7	6.4896	29.191	282	1.0052	-1.0003	1.1733	1.3245	463.7	464	.713	1.1433	1.3318	465.0	431	.746
580	3.0664-2	-2520.9	6.5101	29.188	285	1.0061	-1.0003	1.1816	1.3222	467.4	476	.708	1.1469	1.3305	468.8	439	.746
590	3.0141-2	-2509.1	6.5304	29.185	289	1.0070	-1.0004	1.1905	1.3198	471.0	489	.704	1.1505	1.3291	472.7	446	.745

TABLE 6.5D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
600	2.9635-2	-2497.1	6.5504	29.181	293	1.0082	-1.0004	1.2001	1.3173	474.5	502	.699	1.1541	1.3278	476.4	453 .744
610	2.9145-2	-2485.0	6.5704	29.177	296	1.0094	-1.0005	1.2105	1.3147	478.0	517	.694	1.1578	1.3265	480.2	461 .744
620	2.8670-2	-2472.9	6.5901	29.172	300	1.0109	-1.0006	1.2216	1.3120	481.5	532	.688	1.1614	1.3252	483.9	468 .743
630	2.8210-2	-2460.6	6.6098	29.167	303	1.0124	-1.0007	1.2337	1.3092	484.9	548	.683	1.1651	1.3239	487.6	476 .742
640	2.7763-2	-2448.2	6.6293	29.161	307	1.0142	-1.0008	1.2468	1.3062	488.2	564	.678	1.1687	1.3227	491.3	483 .742
650	2.7330-2	-2435.7	6.6487	29.154	310	1.0162	-1.0009	1.2610	1.3032	491.5	582	.672	1.1724	1.3215	494.9	491 .741
660	2.6909-2	-2423.0	6.6681	29.146	314	1.0184	-1.0010	1.2764	1.3000	494.7	601	.667	1.1761	1.3202	498.6	499 .740
670	2.6499-2	-2410.1	6.6874	29.137	317	1.0209	-1.0012	1.2931	1.2967	497.9	620	.661	1.1797	1.3190	502.2	506 .739
680	2.6101-2	-2397.1	6.7067	29.128	321	1.0236	-1.0013	1.3111	1.2932	501.0	641	.656	1.1834	1.3179	505.8	514 .738
690	2.5713-2	-2383.9	6.7260	29.117	324	1.0265	-1.0015	1.3307	1.2897	504.1	663	.651	1.1871	1.3167	509.3	522 .737
700	2.5336-2	-2370.5	6.7453	29.105	327	1.0298	-1.0017	1.3520	1.2860	507.1	685	.646	1.1908	1.3156	512.9	529 .737
710	2.4967-2	-2356.9	6.7646	29.092	331	1.0335	-1.0019	1.3749	1.2822	510.1	709	.641	1.1944	1.3145	516.5	537 .736
720	2.4609-2	-2343.0	6.7840	29.078	334	1.0374	-1.0022	1.3998	1.2783	513.0	734	.637	1.1981	1.3135	520.0	545 .735
730	2.4258-2	-2328.9	6.8035	29.062	338	1.0418	-1.0024	1.4265	1.2743	515.9	761	.633	1.2018	1.3124	523.5	553 .734
740	2.3916-2	-2314.5	6.8231	29.045	341	1.0465	-1.0027	1.4553	1.2702	518.7	788	.629	1.2054	1.3114	527.1	561 .733
750	2.3582-2	-2299.7	6.8429	29.026	344	1.0516	-1.0030	1.4862	1.2660	521.5	817	.626	1.2090	1.3105	530.6	569 .731
760	2.3255-2	-2284.7	6.8628	29.005	347	1.0571	-1.0033	1.5193	1.2619	524.3	847	.623	1.2126	1.3096	534.1	577 .730
770	2.2935-2	-2269.4	6.8829	28.982	351	1.0630	-1.0037	1.5544	1.2577	527.1	878	.621	1.2162	1.3087	537.7	585 .729
780	2.2621-2	-2253.6	6.9032	28.957	354	1.0694	-1.0041	1.5917	1.2535	529.8	910	.618	1.2198	1.3079	541.2	593 .728
790	2.2314-2	-2237.5	6.9237	28.930	357	1.0762	-1.0045	1.6309	1.2494	532.6	944	.617	1.2233	1.3071	544.8	601 .727
800	2.2013-2	-2221.0	6.9444	28.901	360	1.0833	-1.0049	1.6721	1.2454	535.4	978	.616	1.2269	1.3063	548.3	609 .726
810	2.1718-2	-2204.1	6.9655	28.870	363	1.0908	-1.0054	1.7148	1.2414	538.1	1012	.615	1.2303	1.3056	551.9	617 .725
820	2.1428-2	-2186.7	6.9868	28.837	366	1.0986	-1.0058	1.7588	1.2377	540.9	1047	.615	1.2338	1.3050	555.5	625 .723
830	2.1144-2	-2168.9	7.0084	28.801	369	1.1067	-1.0063	1.8037	1.2341	543.8	1082	.616	1.2372	1.3044	559.1	633 .722
840	2.0864-2	-2150.6	7.0303	28.763	372	1.1148	-1.0068	1.8490	1.2307	546.7	1117	.617	1.2405	1.3038	562.7	641 .721
850	2.0590-2	-2131.9	7.0524	28.722	375	1.1230	-1.0073	1.8940	1.2276	549.6	1150	.618	1.2439	1.3033	566.3	649 .720
860	2.0320-2	-2112.8	7.0748	28.679	379	1.1311	-1.0079	1.9379	1.2248	552.6	1182	.620	1.2471	1.3029	569.9	657 .718
870	2.0055-2	-2093.2	7.0975	28.635	381	1.1389	-1.0084	1.9799	1.2223	555.7	1212	.623	1.2503	1.3025	573.6	665 .717
880	1.9795-2	-2073.2	7.1203	28.588	384	1.1462	-1.0089	2.0190	1.2201	558.8	1240	.626	1.2535	1.3021	577.3	673 .716
890	1.9540-2	-2052.8	7.1433	28.540	387	1.1529	-1.0093	2.0540	1.2183	562.0	1263	.630	1.2566	1.3018	581.0	681 .715
900	1.9289-2	-2032.1	7.1665	28.490	390	1.1585	-1.0097	2.0838	1.2170	565.4	1282	.634	1.2596	1.3015	584.7	689 .713
910	1.9043-2	-2011.1	7.1896	28.440	393	1.1630	-1.0100	2.1070	1.2160	568.8	1296	.639	1.2626	1.3013	588.4	697 .712
920	1.8802-2	-1990.0	7.2127	28.388	396	1.1660	-1.0103	2.1225	1.2155	572.3	1304	.645	1.2655	1.3011	592.1	705 .711
930	1.8567-2	-1968.7	7.2357	28.337	399	1.1672	-1.0104	2.1290	1.2155	575.9	1305	.651	1.2683	1.3010	595.8	713 .710
940	1.8336-2	-1947.4	7.2585	28.287	402	1.1664	-1.0105	2.1256	1.2161	579.7	1299	.657	1.2711	1.3008	599.5	720 .709
950	1.8112-2	-1926.2	7.2809	28.237	404	1.1635	-1.0103	2.1113	1.2172	583.5	1286	.664	1.2738	1.3007	603.2	728 .708
960	1.7893-2	-1905.2	7.3029	28.190	407	1.1582	-1.0101	2.0860	1.2189	587.5	1265	.671	1.2764	1.3005	606.8	736 .707
970	1.7680-2	-1884.6	7.3243	28.145	410	1.1507	-1.0097	2.0499	1.2212	591.6	1239	.678	1.2789	1.3004	610.4	743 .706
980	1.7473-2	-1864.3	7.3451	28.103	413	1.1410	-1.0091	2.0038	1.2241	595.8	1207	.685	1.2814	1.3002	614.0	750 .705
990	1.7273-2	-1844.5	7.3652	28.064	416	1.1295	-1.0085	1.9495	1.2276	600.1	1172	.691	1.2838	1.3000	617.5	757 .705

TABLE 6.5D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	1.7079-2	-1825.3	7.3845	28.029	418	1.1166	-1.0077	1.8893	1.2317	604.4	1135	.696	1.2862	1.2998	620.9	764	.704
1050	1.6200-2	-1738.5	7.4692	27.915	432	1.0522	-1.0036	1.5955	1.2549	626.4	978	.705	1.2970	1.2981	637.1	797	.703
1100	1.5440-2	-1663.2	7.5394	27.874	446	1.0175	-1.0013	1.4438	1.2700	645.5	919	.700	1.3073	1.2956	652.0	828	.703
1150	1.4762-2	-1592.4	7.6023	27.861	459	1.0056	-1.0004	1.3960	1.2751	661.5	919	.698	1.3171	1.2930	666.1	859	.704
1200	1.4145-2	-1523.0	7.6614	27.856	473	1.0020	-1.0002	1.3842	1.2760	676.0	937	.698	1.3265	1.2903	679.8	888	.706
1250	1.3578-2	-1453.9	7.7178	27.855	486	1.0008	-1.0001	1.3829	1.2757	689.9	960	.699	1.3356	1.2878	693.2	918	.707
1300	1.3056-2	-1384.7	7.7721	27.854	499	1.0004	-1.0000	1.3850	1.2750	703.4	986	.701	1.3443	1.2854	706.3	947	.708
1350	1.2572-2	-1315.3	7.8244	27.854	512	1.0002	-1.0000	1.3883	1.2740	716.5	1012	.702	1.3526	1.2832	719.1	977	.708
1400	1.2123-2	-1245.8	7.8750	27.854	524	1.0002	-1.0000	1.3921	1.2730	729.4	1039	.703	1.3605	1.2811	731.7	1006	.709
1450	1.1705-2	-1176.1	7.9239	27.854	537	1.0001	-1.0000	1.3962	1.2720	742.0	1065	.704	1.3681	1.2791	744.1	1035	.710
1500	1.1315-2	-1106.2	7.9713	27.854	549	1.0001	-1.0000	1.4005	1.2709	754.4	1092	.704	1.3754	1.2772	756.2	1064	.710
1550	1.0950-2	-1036.1	8.0173	27.853	561	1.0001	-1.0000	1.4048	1.2699	766.5	1119	.705	1.3823	1.2754	768.2	1093	.710
1600	1.0608-2	-965.7	8.0620	27.853	574	1.0001	-1.0000	1.4091	1.2688	778.5	1146	.705	1.3889	1.2738	780.0	1122	.710
1650	1.0286-2	-895.2	8.1054	27.853	586	1.0001	-1.0000	1.4134	1.2678	790.2	1173	.706	1.3952	1.2722	791.6	1150	.710
1700	9.9835-3	-824.4	8.1477	27.853	598	1.0001	-1.0000	1.4178	1.2667	801.8	1201	.706	1.4011	1.2707	803.0	1179	.710
1750	9.6982-3	-753.4	8.1888	27.853	609	1.0001	-1.0000	1.4221	1.2657	813.1	1228	.706	1.4068	1.2693	814.3	1207	.710
1800	9.4288-3	-682.2	8.2289	27.853	621	1.0001	-1.0000	1.4264	1.2647	824.4	1256	.705	1.4122	1.2680	825.4	1235	.710
1850	9.1739-3	-610.8	8.2681	27.853	633	1.0001	-1.0000	1.4307	1.2637	835.4	1284	.705	1.4173	1.2668	836.4	1264	.710
1900	8.9325-3	-539.1	8.3063	27.853	644	1.0002	-1.0000	1.4351	1.2628	846.3	1313	.704	1.4222	1.2657	847.3	1292	.709
1950	8.7034-3	-467.2	8.3436	27.853	656	1.0003	-1.0000	1.4396	1.2618	857.0	1342	.703	1.4268	1.2646	858.0	1319	.709
2000	8.4857-3	-395.1	8.3801	27.852	667	1.0004	-1.0000	1.4444	1.2608	867.6	1371	.702	1.4312	1.2636	868.6	1347	.709
2050	8.2786-3	-322.8	8.4159	27.852	678	1.0006	-1.0000	1.4495	1.2597	878.0	1402	.701	1.4353	1.2626	879.0	1374	.708
2100	8.0814-3	-250.2	8.4509	27.852	689	1.0009	-1.0000	1.4552	1.2586	888.3	1434	.699	1.4392	1.2617	889.4	1402	.708
2150	7.8932-3	-177.3	8.4852	27.851	700	1.0013	-1.0000	1.4616	1.2574	898.4	1468	.697	1.4430	1.2609	899.6	1429	.707
2200	7.7136-3	-104.0	8.5189	27.850	711	1.0018	-1.0001	1.4690	1.2561	908.3	1503	.695	1.4465	1.2601	909.7	1456	.707
2250	7.5418-3	-30.3	8.5520	27.849	722	1.0025	-1.0001	1.4777	1.2546	918.0	1542	.692	1.4499	1.2593	919.8	1482	.706
2300	7.3774-3	43.8	8.5846	27.847	733	1.0034	-1.0001	1.4882	1.2529	927.6	1584	.688	1.4531	1.2586	929.7	1509	.705
2350	7.2198-3	118.5	8.6167	27.844	743	1.0046	-1.0002	1.5011	1.2509	936.9	1630	.684	1.4561	1.2580	939.5	1536	.705
2400	7.0686-3	193.9	8.6485	27.841	754	1.0062	-1.0002	1.5168	1.2486	946.0	1682	.680	1.4590	1.2574	949.3	1563	.704
2450	6.9233-3	270.3	8.6799	27.837	765	1.0083	-1.0003	1.5363	1.2459	954.8	1740	.675	1.4617	1.2568	959.0	1589	.703
2500	6.7835-3	347.7	8.7112	27.832	775	1.0110	-1.0004	1.5605	1.2427	963.4	1807	.669	1.4643	1.2563	968.6	1616	.702
2550	6.6489-3	426.4	8.7424	27.825	785	1.0146	-1.0005	1.5905	1.2389	971.6	1883	.663	1.4667	1.2559	978.2	1643	.701
2600	6.5189-3	506.8	8.7736	27.816	796	1.0191	-1.0007	1.6275	1.2346	979.5	1972	.657	1.4691	1.2554	987.8	1670	.700
2650	6.3932-3	589.3	8.8050	27.804	806	1.0249	-1.0010	1.6729	1.2297	987.2	2074	.650	1.4713	1.2551	997.3	1697	.699
2700	6.2715-3	674.3	8.8368	27.789	816	1.0322	-1.0013	1.7280	1.2243	994.5	2194	.643	1.4733	1.2548	1006.8	1723	.698
2750	6.1533-3	762.3	8.8691	27.771	826	1.0411	-1.0016	1.7939	1.2184	1001.6	2333	.635	1.4753	1.2546	1016.3	1750	.696
2800	6.0384-3	853.9	8.9021	27.748	836	1.0519	-1.0021	1.8712	1.2122	1008.5	2494	.627	1.4771	1.2545	1025.9	1776	.695
2850	5.9264-3	949.6	8.9360	27.719	846	1.0647	-1.0027	1.9601	1.2060	1015.3	2679	.619	1.4789	1.2544	1035.5	1802	.694
2900	5.8169-3	1050.0	8.9709	27.684	855	1.0795	-1.0034	2.0598	1.1998	1022.2	2888	.610	1.4805	1.2545	1045.3	1829	.692
2950	5.7098-3	1155.7	9.0070	27.643	865	1.0961	-1.0041	2.1687	1.1940	1029.3	3123	.601	1.4820	1.2546	1055.1	1855	.691
3000	5.6047-3	1267.0	9.0445	27.594	874	1.1143	-1.0050	2.2845	1.1887	1036.6	3381	.591	1.4834	1.2549	1065.0	1882	.689

TABLE 6.1E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.081-5	-3201.7	6.7344	27.853	1.053	1.017	1.853-5	30.418	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	1.887-5	-3177.6	6.8493	27.853	1.532	1.034	1.683-5	30.387	139	1.0000	-1.000	0.980	1.387	289	187	.731	0.980	1.387	187	.731
240	1.688-5	-3119.4	7.1002	27.854	5.587	1.051	1.528-5	30.087	147	1.0000	-1.000	0.996	1.384	303	199	.736	0.996	1.384	199	.736
260	1.369-5	-2885.5	8.0328	27.881	1.063	1.055	1.342-5	28.635	145	1.0000	-1.000	1.064	1.375	322	200	.768	1.064	1.375	200	.768
280	1.271-5	-2864.2	8.1119	27.900	1.071	1.060	1.247-5	28.644	155	1.0000	-1.000	1.068	1.373	334	216	.764	1.068	1.373	216	.765
298	1.194-5	-2844.7	8.1794	27.922	1.079	1.064	1.171-5	28.654	164	1.0001	-1.000	1.072	1.371	344	231	.761	1.071	1.372	230	.763
300	1.186-5	-2842.7	8.1861	27.924	1.080	1.065	1.164-5	28.655	165	1.0001	-1.000	1.073	1.371	345	232	.761	1.071	1.371	231	.763
320	1.112-5	-2821.0	8.2560	27.955	1.090	1.070	1.092-5	28.668	174	1.0003	-1.000	1.079	1.368	356	248	.757	1.075	1.369	246	.763
340	1.047-5	-2799.1	8.3225	27.992	1.102	1.075	1.028-5	28.684	184	1.0009	-1.000	1.087	1.364	367	267	.750	1.080	1.367	261	.763
360	9.885-6	-2776.9	8.3859	28.032	1.119	1.081	9.716-6	28.701	193	1.0020	-1.000	1.100	1.359	376	289	.736	1.084	1.365	275	.761
380	9.364-6	-2754.3	8.4470	28.076	1.143	1.086	9.210-6	28.718	203	1.0041	-1.000	1.121	1.352	386	318	.713	1.089	1.362	291	.759
400	8.893-6	-2731.1	8.5065	28.121	1.179	1.092	8.754-6	28.732	212	1.0079	-1.000	1.153	1.342	394	358	.682	1.094	1.360	306	.756
420	8.464-6	-2707.0	8.5652	28.165	1.231	1.099	8.340-6	28.742	220	1.0142	-1.001	1.200	1.329	402	411	.644	1.100	1.357	321	.754
440	8.072-6	-2681.7	8.6241	28.204	1.304	1.105	7.961-6	28.744	229	1.0237	-1.001	1.267	1.313	409	480	.604	1.106	1.354	337	.751
460	7.710-6	-2654.7	8.6841	28.235	1.402	1.113	7.612-6	28.734	237	1.0371	-1.002	1.357	1.295	415	565	.569	1.112	1.352	353	.747
480	7.374-6	-2625.5	8.7463	28.255	1.524	1.120	7.289-6	28.708	246	1.0547	-1.002	1.469	1.277	421	662	.545	1.120	1.349	370	.743
500	7.058-6	-2593.6	8.8114	28.259	1.670	1.129	6.986-6	28.662	254	1.0758	-1.004	1.598	1.260	428	761	.533	1.128	1.346	389	.737
520	6.762-6	-2558.6	8.8800	28.247	1.832	1.138	6.701-6	28.595	262	1.0986	-1.005	1.735	1.246	434	851	.534	1.136	1.344	409	.729
540	6.481-6	-2520.3	8.9523	28.219	2.001	1.147	6.433-6	28.506	270	1.1204	-1.006	1.868	1.235	441	921	.547	1.146	1.341	430	.720
560	6.216-6	-2478.5	9.0282	28.179	2.175	1.157	6.180-6	28.399	278	1.1381	-1.007	1.983	1.226	448	966	.570	1.156	1.339	453	.710
580	5.965-6	-2433.2	9.1076	28.131	2.356	1.167	5.942-6	28.278	286	1.1492	-1.008	2.073	1.219	456	989	.599	1.166	1.337	476	.700
600	5.727-6	-2384.1	9.1909	28.081	2.567	1.177	5.717-6	28.146	293	1.1525	-1.008	2.135	1.214	464	996	.628	1.176	1.335	500	.690
620	5.506-6	-2333.8	9.2734	28.010	2.085	1.186	5.506-6	28.010	300	1.1351	-1.007	2.085	1.214	473	951	.658	1.186	1.334	522	.682
640	5.316-6	-2295.4	9.3343	27.918	1.746	1.194	5.316-6	27.918	307	1.0732	-1.004	1.746	1.239	486	784	.684	1.194	1.333	540	.679
660	5.147-6	-2263.2	9.3839	27.876	1.502	1.200	5.147-6	27.876	314	1.0292	-1.002	1.502	1.264	499	687	.686	1.200	1.331	555	.679
680	4.993-6	-2234.4	9.4269	27.861	1.400	1.206	4.993-6	27.861	321	1.0101	-1.001	1.400	1.277	509	657	.683	1.206	1.329	569	.680
700	4.850-6	-2206.8	9.4669	27.856	1.368	1.211	4.850-6	27.856	327	1.0034	-1.000	1.368	1.281	517	656	.682	1.211	1.327	582	.681
720	4.715-6	-2179.5	9.5053	27.854	1.360	1.216	4.715-6	27.854	334	1.0012	-1.000	1.360	1.282	525	666	.682	1.216	1.325	595	.682
740	4.587-6	-2152.3	9.5426	27.854	1.360	1.222	4.587-6	27.854	340	1.0004	-1.000	1.360	1.281	532	678	.682	1.222	1.323	607	.684
760	4.466-6	-2125.1	9.5789	27.853	1.361	1.227	4.466-6	27.853	346	1.0002	-1.000	1.361	1.281	539	691	.682	1.227	1.321	620	.685
780	4.352-6	-2097.9	9.6143	27.853	1.363	1.232	4.352-6	27.853	353	1.0001	-1.000	1.363	1.280	546	704	.683	1.232	1.320	633	.686
800	4.243-6	-2070.6	9.6488	27.853	1.364	1.238	4.243-6	27.853	359	1.0000	-1.000	1.364	1.280	553	716	.683	1.238	1.318	646	.688

TABLE 6.2E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.081-4	-3202.0	6.1727	27.853	1.020	1.017	1.854-4	30.420	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	1.891-4	-3181.1	6.2721	27.853	1.083	1.034	1.685-4	30.417	140	1.0000	-1.000	0.979	1.388	289	187	.730	0.979	1.388	187	.730
240	1.730-4	-3156.6	6.3784	27.853	1.482	1.051	1.543-4	30.387	150	1.0000	-1.000	0.983	1.386	302	203	.728	0.983	1.386	203	.728
260	1.570-4	-3110.0	6.5637	27.854	3.799	1.068	1.415-4	30.181	159	1.0000	-1.000	0.995	1.383	315	216	.730	0.995	1.383	216	.730
280	1.340-4	-2943.8	7.1753	27.873	12.171	1.135	1.271-4	29.211	160	1.0000	-1.000	1.042	1.376	331	222	.752	1.041	1.376	221	.752
298	1.194-4	-2844.7	7.5238	27.922	1.078	1.064	1.171-4	28.654	164	1.0000	-1.000	1.071	1.371	344	230	.763	1.071	1.372	230	.763
300	1.186-4	-2842.7	7.5305	27.924	1.079	1.065	1.164-4	28.655	165	1.0000	-1.000	1.072	1.371	345	232	.762	1.071	1.371	231	.763
320	1.112-4	-2821.1	7.6004	27.955	1.087	1.070	1.092-4	28.669	174	1.0001	-1.000	1.076	1.369	356	247	.761	1.075	1.369	246	.763
340	1.047-4	-2799.2	7.6666	27.992	1.096	1.075	1.028-4	28.685	184	1.0003	-1.000	1.082	1.366	367	262	.759	1.080	1.367	260	.763
360	9.886-5	-2777.2	7.7295	28.033	1.107	1.081	9.716-5	28.703	193	1.0006	-1.000	1.089	1.363	377	280	.753	1.084	1.365	275	.762
380	9.366-5	-2755.0	7.7897	28.078	1.119	1.086	9.211-5	28.722	202	1.0013	-1.000	1.099	1.359	387	299	.744	1.089	1.362	290	.760
400	8.896-5	-2732.4	7.8474	28.125	1.135	1.092	8.756-5	28.741	211	1.0026	-1.000	1.113	1.354	396	323	.730	1.094	1.360	305	.757
420	8.471-5	-2709.5	7.9033	28.173	1.156	1.098	8.345-5	28.759	220	1.0046	-1.000	1.132	1.347	404	351	.711	1.099	1.357	320	.756
440	8.084-5	-2686.1	7.9577	28.220	1.185	1.104	7.970-5	28.775	229	1.0079	-1.000	1.159	1.339	413	386	.687	1.105	1.354	335	.754
460	7.729-5	-2662.1	8.0112	28.264	1.223	1.111	7.626-5	28.787	237	1.0128	-1.001	1.195	1.329	420	430	.658	1.111	1.351	350	.753
480	7.401-5	-2637.1	8.0642	28.304	1.273	1.118	7.310-5	28.792	245	1.0198	-1.001	1.243	1.317	427	485	.628	1.117	1.349	365	.751
500	7.098-5	-2611.1	8.1174	28.336	1.337	1.125	7.017-5	28.789	253	1.0293	-1.001	1.304	1.304	434	552	.599	1.124	1.346	380	.749
520	6.815-5	-2583.6	8.1714	28.360	1.417	1.132	6.744-5	28.774	261	1.0415	-1.002	1.380	1.291	440	628	.574	1.131	1.343	397	.745
540	6.550-5	-2554.3	8.2266	28.372	1.512	1.140	6.488-5	28.747	269	1.0565	-1.003	1.470	1.277	447	712	.556	1.139	1.341	414	.740
560	6.300-5	-2522.9	8.2836	28.371	1.625	1.148	6.247-5	28.705	277	1.0740	-1.004	1.574	1.263	453	798	.547	1.147	1.338	432	.735
580	6.064-5	-2489.2	8.3428	28.358	1.754	1.157	6.019-5	28.648	285	1.0934	-1.005	1.690	1.251	459	881	.546	1.155	1.336	451	.728
600	5.840-5	-2452.6	8.4047	28.332	1.902	1.166	5.804-5	28.574	292	1.1139	-1.006	1.815	1.239	465	958	.553	1.164	1.333	472	.721
620	5.626-5	-2412.9	8.4698	28.295	2.072	1.175	5.599-5	28.484	300	1.1342	-1.007	1.946	1.228	471	1026	.568	1.173	1.331	492	.714
640	5.422-5	-2369.6	8.5386	28.251	2.272	1.184	5.404-5	28.380	307	1.1531	-1.008	2.080	1.218	478	1084	.589	1.183	1.329	514	.706
660	5.227-5	-2321.8	8.6121	28.202	2.515	1.192	5.218-5	28.262	314	1.1691	-1.009	2.210	1.209	485	1132	.613	1.192	1.328	536	.698
680	5.041-5	-2271.1	8.6878	28.128	2.269	1.201	5.041-5	28.128	321	1.1718	-1.009	2.269	1.204	492	1136	.640	1.201	1.326	558	.691
700	4.875-5	-2227.6	8.7509	28.004	2.055	1.209	4.875-5	28.004	327	1.1295	-1.007	2.055	1.216	503	997	.674	1.209	1.326	576	.687
720	4.726-5	-2189.4	8.8046	27.923	1.764	1.215	4.726-5	27.923	334	1.0751	-1.004	1.764	1.236	515	852	.691	1.215	1.324	592	.685
740	4.592-5	-2156.5	8.8497	27.882	1.547	1.221	4.592-5	27.882	340	1.0350	-1.002	1.547	1.257	527	761	.691	1.221	1.323	606	.685
760	4.468-5	-2126.8	8.8894	27.865	1.439	1.227	4.468-5	27.865	346	1.0146	-1.001	1.439	1.270	537	725	.687	1.227	1.321	620	.686
780	4.353-5	-2098.6	8.9261	27.858	1.394	1.232	4.353-5	27.858	353	1.0059	-1.000	1.394	1.276	545	717	.685	1.232	1.320	633	.687
800	4.243-5	-2070.9	8.9611	27.855	1.377	1.238	4.243-5	27.855	359	1.0024	-1.000	1.377	1.278	552	722	.684	1.238	1.318	645	.688

TABLE 6.3E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.081-3	-3202.0	5.6121	27.853	1.017	1.017	1.854-3	30.420	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	1.892-3	-3181.4	5.7100	27.853	1.039	1.034	1.685-3	30.420	140	1.0000	-1.000	0.978	1.388	289	187	.730	0.978	1.388	187	.730
240	1.733-3	-3160.2	5.8022	27.853	1.094	1.051	1.544-3	30.417	151	1.0000	-1.000	0.982	1.386	302	203	.727	0.982	1.386	203	.727
260	1.598-3	-3136.5	5.8969	27.853	1.332	1.069	1.425-3	30.396	161	1.0000	-1.000	0.986	1.384	314	219	.725	0.986	1.384	219	.725
280	1.472-3	-3073.9	6.1275	27.853	2.154	1.257	1.319-3	30.299	170	1.0000	-1.000	0.994	1.381	326	233	.726	0.994	1.381	233	.726
298	1.352-3	-3022.2	6.3059	27.856	3.802	1.232	1.228-3	30.034	177	1.0000	-1.000	1.009	1.378	337	244	.731	1.009	1.378	244	.731
300	1.339-3	-3014.9	6.3302	27.857	4.075	1.228	1.218-3	29.989	177	1.0000	-1.000	1.011	1.378	339	244	.732	1.011	1.378	244	.732
320	1.164-3	-2886.8	6.7414	27.904	9.832	1.133	1.110-3	29.137	179	1.0000	-1.000	1.054	1.371	354	250	.752	1.053	1.372	250	.752
340	1.047-3	-2799.3	7.0110	27.992	1.094	1.075	1.028-3	28.685	184	1.0001	-1.000	1.080	1.367	367	261	.761	1.080	1.367	260	.763
360	9.887-4	-2777.3	7.0737	28.033	1.103	1.081	9.717-4	28.703	193	1.0002	-1.000	1.086	1.364	377	277	.759	1.084	1.365	275	.762
380	9.366-4	-2755.2	7.1336	28.078	1.111	1.086	9.212-4	28.723	202	1.0004	-1.000	1.092	1.361	387	293	.755	1.089	1.362	290	.760
400	8.898-4	-2732.8	7.1908	28.126	1.121	1.092	8.757-4	28.744	211	1.0008	-1.000	1.100	1.358	396	311	.748	1.094	1.360	305	.758
420	8.473-4	-2710.3	7.2457	28.176	1.132	1.098	8.346-4	28.765	220	1.0015	-1.000	1.109	1.354	405	330	.741	1.099	1.357	320	.757
440	8.087-4	-2687.6	7.2987	28.226	1.145	1.104	7.973-4	28.785	229	1.0025	-1.000	1.122	1.349	414	351	.731	1.104	1.354	334	.756
460	7.735-4	-2664.5	7.3499	28.275	1.161	1.110	7.631-4	28.804	237	1.0042	-1.000	1.138	1.344	422	376	.717	1.110	1.351	349	.755
480	7.411-4	-2641.1	7.3998	28.322	1.182	1.117	7.317-4	28.821	245	1.0065	-1.000	1.158	1.337	430	405	.701	1.116	1.349	363	.754
500	7.112-4	-2617.2	7.4485	28.366	1.208	1.123	7.028-4	28.834	253	1.0099	-1.000	1.183	1.330	438	439	.682	1.122	1.346	377	.753
520	6.835-4	-2592.7	7.4965	28.405	1.240	1.130	6.760-4	28.843	261	1.0144	-1.001	1.215	1.322	445	481	.660	1.129	1.343	392	.751
540	6.577-4	-2567.6	7.5440	28.440	1.280	1.137	6.510-4	28.847	269	1.0203	-1.001	1.254	1.313	452	529	.638	1.136	1.340	408	.749
560	6.337-4	-2541.5	7.5914	28.467	1.329	1.144	6.277-4	28.844	277	1.0279	-1.001	1.302	1.303	459	584	.616	1.143	1.337	424	.746
580	6.111-4	-2514.3	7.6390	28.487	1.388	1.152	6.058-4	28.833	284	1.0374	-1.002	1.360	1.292	465	647	.598	1.150	1.335	440	.743
600	5.898-4	-2485.9	7.6873	28.499	1.460	1.159	5.852-4	28.812	292	1.0489	-1.003	1.429	1.281	471	716	.583	1.158	1.332	457	.739
620	5.697-4	-2455.9	7.7365	28.502	1.546	1.167	5.657-4	28.782	299	1.0626	-1.003	1.510	1.270	477	790	.572	1.165	1.330	474	.735
640	5.507-4	-2423.9	7.7871	28.495	1.648	1.175	5.473-4	28.740	306	1.0785	-1.004	1.605	1.258	483	867	.567	1.173	1.327	492	.730
660	5.325-4	-2389.8	7.8396	28.478	1.770	1.183	5.297-4	28.686	313	1.0966	-1.005	1.715	1.247	488	947	.567	1.182	1.325	511	.725
680	5.151-4	-2353.0	7.8946	28.453	1.917	1.191	5.129-4	28.619	320	1.1167	-1.007	1.839	1.235	494	1028	.573	1.190	1.323	530	.720
700	4.983-4	-2312.9	7.9527	28.421	2.094	1.200	4.968-4	28.539	327	1.1385	-1.008	1.978	1.224	500	1109	.583	1.198	1.321	549	.714
720	4.822-4	-2269.0	8.0145	28.383	2.307	1.208	4.815-4	28.445	334	1.1614	-1.009	2.128	1.214	505	1189	.598	1.207	1.320	569	.708
740	4.666-4	-2220.7	8.0807	28.335	2.276	1.215	4.666-4	28.335	340	1.1829	-1.010	2.276	1.205	512	1261	.614	1.215	1.318	589	.702
760	4.521-4	-2175.0	8.1416	28.197	2.273	1.223	4.521-4	28.197	347	1.1788	-1.010	2.273	1.205	520	1228	.642	1.223	1.318	608	.698
780	4.386-4	-2130.5	8.1993	28.074	2.151	1.230	4.386-4	28.074	353	1.1533	-1.009	2.151	1.211	529	1133	.670	1.230	1.317	625	.694
800	4.262-4	-2089.6	8.2512	27.980	1.933	1.236	4.262-4	27.980	359	1.1108	-1.006	1.933	1.224	540	1006	.690	1.236	1.316	641	.692

TABLE 6.4E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.077-2	-3202.0	5.0515	27.853	1.017	1.017	1.854-2	30.420	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	1.888-2	-3181.5	5.1493	27.853	1.034	1.034	1.685-2	30.420	140	1.0000	-1.000	0.978	1.388	289	187	.730	0.978	1.388	187	.730
240	1.731-2	-3160.6	5.2401	27.853	1.056	1.051	1.545-2	30.419	151	1.0000	-1.000	0.982	1.386	302	203	.727	0.982	1.386	203	.727
260	1.598-2	-3139.1	5.3259	27.853	1.095	1.069	1.426-2	30.417	161	1.0000	-1.000	0.985	1.384	314	219	.724	0.985	1.384	219	.724
280	1.483-2	-3085.5	5.5232	27.853	1.356	1.268	1.323-2	30.408	171	1.0000	-1.000	0.989	1.382	325	234	.723	0.989	1.382	234	.723
298	1.390-2	-3059.7	5.6125	27.853	1.509	1.268	1.242-2	30.381	180	1.0000	-1.000	0.994	1.380	336	247	.723	0.994	1.380	247	.723
300	1.381-2	-3056.9	5.6219	27.853	1.532	1.268	1.234-2	30.377	181	1.0000	-1.000	0.995	1.380	337	249	.723	0.995	1.380	249	.723
320	1.286-2	-3022.7	5.7321	27.854	1.941	1.264	1.154-2	30.292	190	1.0000	-1.000	1.002	1.377	348	262	.726	1.002	1.377	262	.726
340	1.190-2	-2976.3	5.8725	27.857	2.802	1.249	1.079-2	30.090	197	1.0000	-1.000	1.015	1.374	359	273	.731	1.015	1.374	273	.731
360	1.084-2	-2904.6	6.0770	27.882	4.594	1.208	1.004-2	29.669	202	1.0000	-1.000	1.039	1.370	372	283	.741	1.038	1.370	283	.741
380	9.513-3	-2777.3	6.4201	28.036	8.793	1.109	9.260-3	28.874	204	1.0001	-1.000	1.082	1.363	386	292	.755	1.081	1.363	291	.757
400	8.897-3	-2733.0	6.5350	28.127	1.116	1.092	8.758-3	28.745	211	1.0002	-1.000	1.096	1.359	397	307	.755	1.094	1.360	305	.758
420	8.474-3	-2710.6	6.5896	28.177	1.124	1.098	8.347-3	28.767	220	1.0005	-1.000	1.102	1.356	406	323	.752	1.099	1.357	320	.757
440	8.088-3	-2688.0	6.6421	28.227	1.132	1.104	7.974-3	28.789	229	1.0008	-1.000	1.110	1.352	415	339	.748	1.104	1.354	334	.756
460	7.736-3	-2665.3	6.6926	28.278	1.141	1.110	7.633-3	28.810	237	1.0013	-1.000	1.119	1.349	423	357	.743	1.110	1.351	348	.755
480	7.413-3	-2642.4	6.7414	28.328	1.152	1.116	7.320-3	28.831	245	1.0021	-1.000	1.129	1.345	431	376	.736	1.116	1.349	362	.755
500	7.116-3	-2619.2	6.7886	28.375	1.164	1.123	7.032-3	28.850	253	1.0031	-1.000	1.142	1.340	439	397	.728	1.122	1.346	376	.754
520	6.841-3	-2595.8	6.8346	28.421	1.178	1.130	6.765-3	28.867	261	1.0046	-1.000	1.156	1.335	447	421	.717	1.128	1.343	391	.753
540	6.587-3	-2572.1	6.8793	28.464	1.195	1.136	6.518-3	28.882	269	1.0067	-1.000	1.174	1.330	455	448	.705	1.135	1.340	406	.752
560	6.350-3	-2548.0	6.9232	28.503	1.216	1.143	6.288-3	28.894	277	1.0093	-1.000	1.195	1.324	462	478	.691	1.141	1.337	421	.750
580	6.128-3	-2523.4	6.9662	28.539	1.241	1.150	6.073-3	28.902	284	1.0127	-1.001	1.220	1.318	469	512	.677	1.148	1.334	436	.748
600	5.921-3	-2498.3	7.0088	28.570	1.270	1.157	5.871-3	28.907	292	1.0171	-1.001	1.249	1.311	476	551	.661	1.155	1.332	451	.747
620	5.726-3	-2472.6	7.0510	28.596	1.306	1.164	5.682-3	28.907	299	1.0225	-1.001	1.285	1.303	482	594	.646	1.162	1.329	467	.744
640	5.543-3	-2446.0	7.0931	28.617	1.349	1.172	5.503-3	28.902	306	1.0291	-1.002	1.327	1.295	488	642	.632	1.169	1.326	483	.742
660	5.369-3	-2418.6	7.1354	28.632	1.400	1.179	5.335-3	28.891	313	1.0372	-1.002	1.377	1.287	494	696	.620	1.177	1.324	499	.739
680	5.204-3	-2390.0	7.1780	28.641	1.462	1.186	5.174-3	28.873	320	1.0470	-1.003	1.436	1.277	500	755	.609	1.184	1.321	515	.736
700	5.048-3	-2360.0	7.2215	28.644	1.536	1.194	5.022-3	28.848	327	1.0586	-1.003	1.506	1.268	506	819	.602	1.192	1.319	532	.733
720	4.898-3	-2328.4	7.2659	28.640	1.625	1.201	4.877-3	28.814	334	1.0723	-1.004	1.588	1.257	511	888	.597	1.200	1.317	549	.729
740	4.755-3	-2294.9	7.3119	28.631	1.732	1.209	4.738-3	28.772	340	1.0883	-1.005	1.684	1.247	516	963	.595	1.207	1.315	566	.726
760	4.617-3	-2259.0	7.3597	28.616	1.859	1.216	4.605-3	28.720	347	1.1066	-1.006	1.792	1.237	522	1043	.596	1.215	1.313	584	.722
780	4.484-3	-2220.4	7.4099	28.595	2.009	1.223	4.477-3	28.657	353	1.1271	-1.007	1.915	1.227	527	1128	.600	1.222	1.311	602	.718
800	4.355-3	-2178.5	7.4629	28.570	2.187	1.230	4.354-3	28.582	360	1.1497	-1.009	2.048	1.218	532	1215	.606	1.230	1.310	620	.714

TABLE 6.5E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.087066; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	1.029-1	-3202.0	4.6598	27.853	1.017	1.017	9.268-2	30.420	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	9.366-2	-3181.5	4.7574	27.853	1.034	1.034	8.425-2	30.420	140	1.0000	-1.000	0.978	1.388	289	187	.730	0.978	1.388	187	.730
240	8.592-2	-3160.6	4.8482	27.853	1.052	1.051	7.723-2	30.420	151	1.0000	-1.000	0.982	1.386	302	203	.727	0.982	1.386	203	.727
260	7.937-2	-3139.4	4.9332	27.853	1.074	1.069	7.129-2	30.419	161	1.0000	-1.000	0.985	1.384	314	219	.724	0.985	1.384	219	.724
280	7.377-2	-3086.5	5.1276	27.853	1.287	1.269	6.619-2	30.417	171	1.0000	-1.000	0.989	1.382	325	234	.723	0.989	1.382	234	.723
298	6.928-2	-3062.9	5.2093	27.853	1.319	1.271	6.215-2	30.412	180	1.0000	-1.000	0.993	1.380	335	248	.722	0.993	1.380	248	.722
300	6.885-2	-3060.5	5.2174	27.853	1.324	1.271	6.177-2	30.411	181	1.0000	-1.000	0.993	1.380	336	249	.722	0.993	1.380	249	.722
320	6.449-2	-3033.3	5.3052	27.853	1.407	1.274	5.788-2	30.394	190	1.0000	-1.000	0.998	1.378	347	263	.723	0.998	1.378	263	.723
340	6.053-2	-3003.7	5.3949	27.853	1.569	1.276	5.440-2	30.354	199	1.0000	-1.000	1.004	1.375	358	276	.725	1.004	1.375	276	.725
360	5.680-2	-2969.7	5.4920	27.854	1.858	1.274	5.123-2	30.270	208	1.0000	-1.000	1.012	1.372	368	289	.728	1.012	1.372	289	.728
380	5.314-2	-2928.0	5.6044	27.859	2.347	1.265	4.828-2	30.111	215	1.0000	-1.000	1.024	1.369	379	301	.731	1.024	1.369	301	.731
400	4.934-2	-2873.6	5.7439	27.881	3.173	1.241	4.545-2	29.836	221	1.0000	-1.000	1.041	1.366	390	313	.737	1.041	1.366	312	.737
420	4.513-2	-2796.9	5.9307	27.966	4.651	1.193	4.264-2	29.394	226	1.0001	-1.000	1.068	1.360	402	324	.744	1.067	1.361	323	.745
440	4.043-2	-2688.1	6.1836	28.228	1.129	1.104	3.987-2	28.790	229	1.0003	-1.000	1.107	1.353	415	336	.752	1.104	1.354	334	.756
460	3.868-2	-2665.5	6.2340	28.279	1.136	1.110	3.817-2	28.812	237	1.0006	-1.000	1.114	1.350	423	352	.750	1.110	1.351	348	.755
480	3.707-2	-2642.7	6.2825	28.329	1.144	1.116	3.660-2	28.833	245	1.0009	-1.000	1.122	1.347	432	368	.746	1.116	1.349	362	.755
500	3.558-2	-2619.7	6.3294	28.378	1.152	1.123	3.516-2	28.854	253	1.0014	-1.000	1.131	1.343	440	386	.742	1.122	1.346	376	.755
520	3.421-2	-2596.6	6.3747	28.426	1.162	1.129	3.383-2	28.873	261	1.0020	-1.000	1.141	1.339	448	404	.737	1.128	1.343	391	.754
540	3.294-2	-2573.2	6.4188	28.471	1.173	1.136	3.260-2	28.891	269	1.0030	-1.000	1.152	1.335	456	424	.730	1.134	1.340	405	.753
560	3.176-2	-2549.6	6.4617	28.514	1.185	1.143	3.145-2	28.907	277	1.0042	-1.000	1.165	1.331	463	446	.722	1.141	1.337	420	.751
580	3.066-2	-2525.8	6.5035	28.553	1.200	1.150	3.038-2	28.922	284	1.0057	-1.000	1.180	1.326	470	470	.713	1.148	1.334	435	.750
600	2.963-2	-2501.6	6.5445	28.590	1.217	1.157	2.938-2	28.933	291	1.0078	-1.000	1.198	1.321	477	497	.703	1.154	1.331	450	.749
620	2.867-2	-2477.1	6.5847	28.624	1.237	1.163	2.844-2	28.943	299	1.0103	-1.001	1.218	1.316	484	526	.692	1.161	1.329	465	.747
640	2.776-2	-2452.2	6.6243	28.654	1.260	1.171	2.756-2	28.949	306	1.0135	-1.001	1.242	1.310	491	558	.681	1.168	1.326	480	.745
660	2.691-2	-2426.7	6.6635	28.680	1.287	1.178	2.673-2	28.952	313	1.0175	-1.001	1.269	1.304	497	593	.670	1.175	1.323	495	.743
680	2.610-2	-2400.6	6.7024	28.702	1.320	1.185	2.594-2	28.951	320	1.0223	-1.001	1.302	1.297	503	632	.659	1.183	1.321	511	.741
700	2.534-2	-2373.8	6.7412	28.720	1.359	1.192	2.520-2	28.946	327	1.0282	-1.002	1.340	1.290	509	675	.649	1.190	1.318	527	.739
720	2.461-2	-2346.2	6.7801	28.734	1.405	1.199	2.449-2	28.937	334	1.0353	-1.002	1.384	1.283	515	722	.640	1.197	1.316	542	.737
740	2.392-2	-2317.6	6.8193	28.744	1.460	1.206	2.382-2	28.922	340	1.0438	-1.003	1.437	1.275	521	774	.632	1.204	1.314	558	.734
760	2.326-2	-2287.7	6.8591	28.749	1.525	1.213	2.317-2	28.902	347	1.0540	-1.003	1.498	1.266	526	831	.626	1.212	1.311	575	.732
780	2.263-2	-2256.5	6.8997	28.750	1.602	1.220	2.256-2	28.875	354	1.0659	-1.004	1.568	1.257	531	893	.621	1.219	1.309	591	.729
800	2.202-2	-2223.6	6.9414	28.747	1.693	1.227	2.197-2	28.841	360	1.0797	-1.005	1.649	1.249	537	960	.618	1.226	1.307	608	.727

TABLE 7A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.016907; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 28.9495;
DRY AIR; GASEOUS COMPOSITION: CO2= .03463; H2O= .03431; N2= .76744; O2= .15441; AR= .00920

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7640-3	8.8199-2	-857.1	7.8355	7.1742	6.5129	5.8515	5.3893	1.0172	1.3934	282.9	128	175	.7467	200
210	1.6800-3	8.3999-2	-847.0	7.8851	7.2238	6.5625	5.9012	5.4389	1.0170	1.3936	289.9	134	183	.7442	210
220	1.6036-3	8.0181-2	-836.8	7.9324	7.2711	6.6098	5.9485	5.4862	1.0168	1.3936	296.7	140	191	.7417	220
230	1.5339-3	7.6695-2	-826.6	7.9776	7.3163	6.6550	5.9937	5.5314	1.0168	1.3937	303.4	145	199	.7393	230
240	1.4700-3	7.3500-2	-816.5	8.0209	7.3596	6.6983	6.0369	5.5747	1.0169	1.3936	309.9	150	207	.7372	240
250	1.4112-3	7.0560-2	-806.3	8.0624	7.4011	6.7398	6.0785	5.6162	1.0171	1.3935	316.3	156	215	.7353	250
260	1.3569-3	6.7846-2	-796.1	8.1023	7.4410	6.7797	6.1184	5.6561	1.0174	1.3933	322.6	161	223	.7336	260
270	1.3067-3	6.5333-2	-786.0	8.1407	7.4794	6.8181	6.1568	5.6945	1.0179	1.3931	328.7	166	231	.7322	270
280	1.2600-3	6.3000-2	-775.8	8.1777	7.5164	6.8551	6.1938	5.7316	1.0184	1.3928	334.7	171	238	.7311	280
290	1.2165-3	6.0827-2	-765.6	8.2135	7.5522	6.8909	6.2295	5.7673	1.0191	1.3924	340.5	176	245	.7302	290
298	1.1833-3	5.9164-2	-757.3	8.2417	7.5804	6.9191	6.2578	5.7956	1.0197	1.3921	345.3	180	251	.7296	298
300	1.1760-3	5.8800-2	-755.4	8.2480	7.5867	6.9254	6.2641	5.8019	1.0199	1.3920	346.3	181	253	.7295	300
310	1.1381-3	5.6903-2	-745.2	8.2815	7.6202	6.9589	6.2976	5.8353	1.0207	1.3915	352.0	185	260	.7294	310
320	1.1025-3	5.5125-2	-735.0	8.3139	7.6526	6.9913	6.3300	5.8677	1.0217	1.3910	357.6	190	266	.7294	320
330	1.0691-3	5.3454-2	-724.8	8.3454	7.6841	7.0227	6.3614	5.8992	1.0228	1.3905	363.0	195	273	.7295	330
340	1.0376-3	5.1882-2	-714.5	8.3759	7.7146	7.0533	6.3920	5.9297	1.0239	1.3899	368.4	199	280	.7296	340
350	1.0080-3	5.0400-2	-704.3	8.4056	7.7443	7.0830	6.4217	5.9594	1.0251	1.3892	373.7	204	286	.7297	350
360	9.7999-4	4.9000-2	-694.0	8.4345	7.7732	7.1119	6.4506	5.9883	1.0264	1.3885	378.9	208	293	.7295	360
370	9.5351-4	4.7675-2	-683.7	8.4627	7.8013	7.1400	6.4787	6.0165	1.0278	1.3878	384.0	213	300	.7294	370
380	9.2841-4	4.6421-2	-673.5	8.4901	7.8288	7.1675	6.5062	6.0439	1.0293	1.3870	389.1	217	306	.7292	380
390	9.0461-4	4.5230-2	-663.2	8.5168	7.8555	7.1942	6.5329	6.0707	1.0308	1.3862	394.0	221	313	.7289	390
400	8.8199-4	4.4100-2	-652.8	8.5430	7.8817	7.2203	6.5590	6.0968	1.0325	1.3854	398.9	226	320	.7287	400
410	8.6048-4	4.3024-2	-642.5	8.5685	7.9072	7.2459	6.5845	6.1223	1.0342	1.3845	403.8	230	326	.7286	410
420	8.3999-4	4.2000-2	-632.2	8.5934	7.9321	7.2708	6.6095	6.1472	1.0359	1.3836	408.5	234	333	.7284	420
430	8.2046-4	4.1023-2	-621.8	8.6178	7.9565	7.2952	6.6339	6.1716	1.0377	1.3827	413.2	238	339	.7283	430
440	8.0181-4	4.0091-2	-611.4	8.6417	7.9804	7.3191	6.6578	6.1955	1.0396	1.3817	417.9	242	346	.7281	440
450	7.8399-4	3.9200-2	-601.0	8.6651	8.0038	7.3425	6.6811	6.2189	1.0415	1.3807	422.4	246	352	.7280	450
460	7.6695-4	3.8348-2	-590.6	8.6880	8.0267	7.3654	6.7041	6.2418	1.0435	1.3797	426.9	250	359	.7280	460
470	7.5063-4	3.7532-2	-580.1	8.7105	8.0491	7.3878	6.7265	6.2643	1.0456	1.3787	431.4	254	365	.7279	470
480	7.3499-4	3.6750-2	-569.7	8.7325	8.0712	7.4099	6.7486	6.2863	1.0476	1.3777	435.8	258	371	.7279	480
490	7.1999-4	3.6000-2	-559.2	8.7541	8.0928	7.4315	6.7702	6.3079	1.0498	1.3766	440.1	262	378	.7278	490
500	7.0559-4	3.5280-2	-548.7	8.7753	8.1140	7.4527	6.7914	6.3292	1.0520	1.3755	444.4	266	384	.7278	500
510	6.9176-4	3.4588-2	-538.1	8.7962	8.1349	7.4736	6.8123	6.3500	1.0542	1.3745	448.7	269	390	.7278	510
520	6.7846-4	3.3923-2	-527.6	8.8167	8.1554	7.4941	6.8328	6.3705	1.0565	1.3734	452.9	273	396	.7277	520
530	6.6566-4	3.3283-2	-517.0	8.8368	8.1755	7.5142	6.8529	6.3907	1.0588	1.3722	457.0	277	403	.7277	530
540	6.5333-4	3.2666-2	-506.4	8.8566	8.1953	7.5340	6.8727	6.4105	1.0611	1.3711	461.1	281	409	.7276	540
550	6.4145-4	3.2073-2	-495.8	8.8761	8.2148	7.5535	6.8922	6.4300	1.0635	1.3700	465.2	284	415	.7276	550
560	6.3000-4	3.1500-2	-485.1	8.8953	8.2340	7.5727	6.9114	6.4492	1.0659	1.3688	469.2	288	422	.7275	560
570	6.1894-4	3.0947-2	-474.5	8.9142	8.2529	7.5916	6.9303	6.4680	1.0683	1.3677	473.2	291	428	.7274	570
580	6.0827-4	3.0414-2	-463.8	8.9328	8.2715	7.6102	6.9489	6.4866	1.0707	1.3665	477.1	295	434	.7273	580
590	5.9796-4	2.9898-2	-453.1	8.9511	8.2898	7.6285	6.9672	6.5050	1.0732	1.3654	481.0	299	441	.7272	590

TABLE 7A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.016907; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 28.9495;
DRY AIR; GASEOUS COMPOSITION: CO2= .03463; H2O= .03431; N2= .76744; O2= .15441; AR= .00920

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8800-4	2.9400-2	-442.3	8.9692	8.3079	7.6466	6.9853	6.5230	1.0757	1.3642	484.9	302	447	.7271	600
610	5.7836-4	2.8918-2	-431.5	8.9870	8.3257	7.6644	7.0031	6.5408	1.0782	1.3631	488.7	306	453	.7269	610
620	5.6903-4	2.8451-2	-420.7	9.0045	8.3432	7.6819	7.0206	6.5584	1.0808	1.3619	492.5	309	460	.7267	620
630	5.6000-4	2.8000-2	-409.9	9.0219	8.3606	7.6992	7.0379	6.5757	1.0833	1.3608	496.2	313	466	.7265	630
640	5.5125-4	2.7562-2	-399.1	9.0389	8.3776	7.7163	7.0550	6.5928	1.0859	1.3596	499.9	316	472	.7263	640
650	5.4277-4	2.7138-2	-388.2	9.0558	8.3945	7.7332	7.0719	6.6096	1.0885	1.3584	503.6	319	479	.7261	650
660	5.3454-4	2.6727-2	-377.3	9.0724	8.4111	7.7498	7.0885	6.6263	1.0910	1.3573	507.2	323	485	.7259	660
670	5.2656-4	2.6328-2	-366.4	9.0889	8.4276	7.7662	7.1049	6.6427	1.0936	1.3561	510.8	326	492	.7256	670
680	5.1882-4	2.5941-2	-355.4	9.1051	8.4438	7.7825	7.1211	6.6589	1.0962	1.3550	514.4	330	498	.7254	680
690	5.1130-4	2.5565-2	-344.5	9.1211	8.4598	7.7985	7.1372	6.6749	1.0988	1.3539	518.0	333	504	.7252	690
700	5.0400-4	2.5200-2	-333.5	9.1369	8.4756	7.8143	7.1530	6.6908	1.1014	1.3527	521.5	336	511	.7250	700
710	4.9690-4	2.4845-2	-322.4	9.1526	8.4913	7.8300	7.1686	6.7064	1.1040	1.3516	525.0	340	517	.7248	710
720	4.9000-4	2.4500-2	-311.4	9.1680	8.5067	7.8454	7.1841	6.7219	1.1066	1.3505	528.5	343	524	.7245	720
730	4.8328-4	2.4164-2	-300.3	9.1833	8.5220	7.8607	7.1994	6.7371	1.1092	1.3494	531.9	346	530	.7243	730
740	4.7675-4	2.3838-2	-289.2	9.1984	8.5371	7.8758	7.2145	6.7523	1.1118	1.3483	535.3	349	536	.7241	740
750	4.7040-4	2.3520-2	-278.1	9.2134	8.5521	7.8907	7.2294	6.7672	1.1144	1.3472	538.7	353	543	.7239	750
760	4.6421-4	2.3210-2	-266.9	9.2281	8.5668	7.9055	7.2442	6.7820	1.1170	1.3461	542.1	356	549	.7237	760
770	4.5818-4	2.2909-2	-255.7	9.2428	8.5815	7.9201	7.2588	6.7966	1.1196	1.3450	545.4	359	555	.7235	770
780	4.5230-4	2.2615-2	-244.5	9.2572	8.5959	7.9346	7.2733	6.8111	1.1221	1.3440	548.7	362	562	.7233	780
790	4.4658-4	2.2329-2	-233.3	9.2715	8.6102	7.9489	7.2876	6.8254	1.1247	1.3429	552.0	365	568	.7231	790
800	4.4100-4	2.2050-2	-222.0	9.2857	8.6244	7.9631	7.3018	6.8395	1.1272	1.3419	555.3	368	574	.7230	800
810	4.3555-4	2.1778-2	-210.7	9.2997	8.6384	7.9771	7.3158	6.8535	1.1297	1.3409	558.5	371	581	.7228	810
820	4.3024-4	2.1512-2	-199.4	9.3136	8.6523	7.9910	7.3297	6.8674	1.1322	1.3399	561.7	375	587	.7227	820
830	4.2506-4	2.1253-2	-188.1	9.3273	8.6660	8.0047	7.3434	6.8812	1.1347	1.3389	564.9	378	593	.7225	830
840	4.2000-4	2.1000-2	-176.7	9.3409	8.6796	8.0183	7.3570	6.8948	1.1372	1.3379	568.1	381	599	.7224	840
850	4.1506-4	2.0753-2	-165.3	9.3544	8.6931	8.0318	7.3705	6.9082	1.1396	1.3369	571.3	384	606	.7222	850
860	4.1023-4	2.0511-2	-153.9	9.3678	8.7064	8.0451	7.3838	6.9216	1.1421	1.3360	574.4	387	612	.7221	860
870	4.0551-4	2.0276-2	-142.5	9.3810	8.7197	8.0584	7.3970	6.9348	1.1445	1.3350	577.6	390	618	.7220	870
880	4.0091-4	2.0045-2	-131.0	9.3941	8.7328	8.0714	7.4101	6.9479	1.1469	1.3341	580.7	393	624	.7218	880
890	3.9640-4	1.9820-2	-119.6	9.4070	8.7457	8.0844	7.4231	6.9609	1.1492	1.3332	583.8	396	630	.7217	890
900	3.9200-4	1.9600-2	-108.1	9.4199	8.7586	8.0973	7.4360	6.9737	1.1516	1.3323	586.8	399	636	.7216	900
910	3.8769-4	1.9384-2	-96.5	9.4326	8.7713	8.1100	7.4487	6.9865	1.1539	1.3314	589.9	402	643	.7215	910
920	3.8348-4	1.9174-2	-85.0	9.4453	8.7839	8.1226	7.4613	6.9991	1.1561	1.3305	592.9	405	649	.7214	920
930	3.7935-4	1.8968-2	-73.4	9.4578	8.7965	8.1351	7.4738	7.0116	1.1584	1.3297	595.9	408	655	.7213	930
940	3.7532-4	1.8766-2	-61.8	9.4702	8.8089	8.1475	7.4862	7.0240	1.1606	1.3288	599.0	411	661	.7212	940
950	3.7137-4	1.8568-2	-50.2	9.4825	8.8212	8.1598	7.4985	7.0363	1.1628	1.3280	601.9	413	667	.7211	950
960	3.6750-4	1.8375-2	-38.6	9.4946	8.8333	8.1720	7.5107	7.0485	1.1650	1.3272	604.9	416	673	.7210	960
970	3.6371-4	1.8185-2	-26.9	9.5067	8.8454	8.1841	7.5228	7.0606	1.1671	1.3264	607.9	419	679	.7209	970
980	3.6000-4	1.8000-2	-15.2	9.5187	8.8574	8.1961	7.5348	7.0725	1.1692	1.3256	610.8	422	685	.7208	980
990	3.5636-4	1.7818-2	-3.5	9.5306	8.8693	8.2080	7.5467	7.0844	1.1713	1.3249	613.8	425	691	.7207	990

TABLE 7A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.016907; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 28.9495;
DRY AIR; GASEOUS COMPOSITION: CO2= .03463; H2O= .03431; N2= .76744; O2= .15441; AR= .00920

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5280-4	1.7640-2	8.2	9.5424	8.8811	8.2198	7.5584	7.0962	1.1733	1.3241	616.7	428	697	.7206	1000
1050	3.3600-4	1.6800-2	67.1	9.5999	8.9385	8.2772	7.6159	7.1537	1.1827	1.3207	631.1	442	725	.7205	1050
1100	3.2072-4	1.6036-2	126.5	9.6551	8.9938	8.3325	7.6711	7.2089	1.1917	1.3175	645.2	455	753	.7205	1100
1150	3.0678-4	1.5339-2	186.3	9.7082	9.0469	8.3856	7.7243	7.2621	1.2003	1.3145	658.9	469	781	.7205	1150
1200	2.9400-4	1.4700-2	246.5	9.7595	9.0982	8.4369	7.7756	7.3133	1.2084	1.3118	672.4	482	808	.7206	1200
1250	2.8224-4	1.4112-2	307.1	9.8090	9.1477	8.4864	7.8251	7.3628	1.2162	1.3092	685.6	495	835	.7208	1250
1300	2.7138-4	1.3569-2	368.1	9.8568	9.1955	8.5342	7.8729	7.4107	1.2236	1.3067	698.5	507	861	.7209	1300
1350	2.6133-4	1.3067-2	429.5	9.9031	9.2418	8.5805	7.9192	7.4570	1.2306	1.3044	711.2	520	887	.7210	1350
1400	2.5200-4	1.2600-2	491.2	9.9480	9.2867	8.6254	7.9641	7.5019	1.2373	1.3023	723.6	532	913	.7212	1400
1450	2.4331-4	1.2165-2	553.2	9.9916	9.3302	8.6689	8.0076	7.5454	1.2437	1.3003	735.9	544	939	.7213	1450
1500	2.3520-4	1.1760-2	615.5	10.0338	9.3725	8.7112	8.0499	7.5877	1.2498	1.2984	747.9	556	964	.7213	1500
1550	2.2761-4	1.1381-2	678.2	10.0749	9.4136	8.7523	8.0910	7.6287	1.2555	1.2966	759.7	568	989	.7210	1550
1600	2.2050-4	1.1025-2	741.1	10.1148	9.4535	8.7922	8.1309	7.6687	1.2610	1.2949	771.4	580	1014	.7208	1600
1650	2.1382-4	1.0691-2	804.3	10.1537	9.4924	8.8311	8.1698	7.7076	1.2662	1.2934	782.9	591	1039	.7205	1650
1700	2.0753-4	1.0376-2	867.7	10.1916	9.5303	8.8690	8.2077	7.7454	1.2711	1.2919	794.2	603	1064	.7202	1700
1750	2.0160-4	1.0080-2	931.4	10.2285	9.5672	8.9059	8.2446	7.7823	1.2758	1.2905	805.4	614	1088	.7199	1750
1800	1.9600-4	9.7999-3	995.3	10.2645	9.6032	8.9419	8.2806	7.8183	1.2802	1.2892	816.4	625	1112	.7196	1800
1850	1.9070-4	9.5351-3	1059.4	10.2997	9.6383	8.9770	8.3157	7.8535	1.2844	1.2880	827.3	636	1136	.7193	1850
1900	1.8568-4	9.2842-3	1123.7	10.3340	9.6726	9.0113	8.3500	7.8878	1.2884	1.2869	838.0	647	1160	.7190	1900
1950	1.8092-4	9.0461-3	1188.2	10.3675	9.7062	9.0449	8.3835	7.9213	1.2922	1.2858	848.6	658	1183	.7187	1950
2000	1.7640-4	8.8199-3	1252.9	10.4002	9.7389	9.0776	8.4163	7.9541	1.2958	1.2848	859.1	669	1206	.7184	2000
2050	1.7210-4	8.6048-3	1317.8	10.4323	9.7710	9.1096	8.4483	7.9861	1.2992	1.2838	869.4	679	1228	.7183	2050
2100	1.6800-4	8.3999-3	1382.8	10.4636	9.8023	9.1410	8.4797	8.0174	1.3024	1.2829	879.6	690	1251	.7183	2100
2150	1.6409-4	8.2046-3	1448.0	10.4943	9.8330	9.1717	8.5104	8.0481	1.3055	1.2820	889.7	700	1273	.7183	2150
2200	1.6036-4	8.0181-3	1513.4	10.5243	9.8630	9.2017	8.5404	8.0782	1.3084	1.2812	899.7	711	1294	.7182	2200
2250	1.5680-4	7.8399-3	1578.9	10.5538	9.8925	9.2312	8.5698	8.1076	1.3112	1.2805	909.6	721	1316	.7182	2250
2300	1.5339-4	7.6695-3	1644.5	10.5826	9.9213	9.2600	8.5987	8.1365	1.3138	1.2798	919.4	731	1337	.7182	2300
2350	1.5013-4	7.5063-3	1710.2	10.6109	9.9496	9.2883	8.6270	8.1647	1.3163	1.2791	929.1	741	1358	.7183	2350
2400	1.4700-4	7.3500-3	1776.1	10.6387	9.9773	9.3160	8.6547	8.1925	1.3187	1.2784	938.7	751	1379	.7183	2400
2450	1.4400-4	7.2000-3	1842.1	10.6659	10.0046	9.3432	8.6819	8.2197	1.3210	1.2778	948.2	761	1399	.7183	2450
2500	1.4112-4	7.0560-3	1908.2	10.6926	10.0313	9.3700	8.7086	8.2464	1.3232	1.2772	957.6	771	1420	.7184	2500
2550	1.3835-4	6.9176-3	1974.4	10.7188	10.0575	9.3962	8.7349	8.2726	1.3253	1.2767	966.9	781	1440	.7182	2550
2600	1.3569-4	6.7846-3	2040.8	10.7446	10.0832	9.4219	8.7606	8.2984	1.3273	1.2761	976.2	790	1461	.7181	2600
2650	1.3313-4	6.6566-3	2107.2	10.7699	10.1085	9.4472	8.7859	8.3237	1.3293	1.2756	985.3	800	1481	.7179	2650
2700	1.3067-4	6.5333-3	2173.7	10.7947	10.1334	9.4721	8.8108	8.3486	1.3311	1.2751	994.4	810	1501	.7178	2700
2750	1.2829-4	6.4145-3	2240.3	10.8192	10.1579	9.4965	8.8352	8.3730	1.3329	1.2747	1003.4	819	1522	.7176	2750
2800	1.2600-4	6.3000-3	2307.0	10.8432	10.1819	9.5206	8.8593	8.3970	1.3346	1.2742	1012.3	829	1541	.7174	2800
2850	1.2379-4	6.1894-3	2373.7	10.8668	10.2055	9.5442	8.8829	8.4207	1.3363	1.2738	1021.1	838	1561	.7172	2850
2900	1.2165-4	6.0827-3	2440.6	10.8901	10.2288	9.5675	8.9062	8.4439	1.3379	1.2733	1029.8	847	1581	.7170	2900
2950	1.1959-4	5.9796-3	2507.5	10.9130	10.2517	9.5903	8.9290	8.4668	1.3395	1.2729	1038.5	857	1601	.7167	2950
3000	1.1760-4	5.8800-3	2574.5	10.9355	10.2742	9.6129	8.9516	8.4893	1.3410	1.2725	1047.1	866	1621	.7165	3000

TABLE 7.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016907; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9200-6	-108.0	9.4199	28.949	399	1.0000	-1.0000	1.1519	1.3321	586.8	637	.722	1.1516	1.3323	586.8	636	.722
950	3.7137-6	-50.1	9.4825	28.949	413	1.0000	-1.0000	1.1634	1.3278	601.9	667	.721	1.1628	1.3280	601.9	667	.721
1000	3.5280-6	8.3	9.5425	28.949	428	1.0000	-1.0000	1.1743	1.3237	616.6	697	.721	1.1733	1.3241	616.7	697	.721
1050	3.3600-6	67.3	9.6000	28.949	442	1.0000	-1.0000	1.1843	1.3201	631.0	726	.721	1.1827	1.3207	631.1	725	.720
1100	3.2073-6	126.7	9.6553	28.949	455	1.0000	-1.0000	1.1941	1.3167	645.0	755	.720	1.1917	1.3175	645.2	753	.720
1150	3.0678-6	186.7	9.7086	28.949	469	1.0000	-1.0000	1.2037	1.3134	658.6	783	.721	1.2003	1.3145	658.9	781	.721
1200	2.9400-6	247.1	9.7601	28.949	482	1.0000	-1.0000	1.2132	1.3102	672.0	811	.721	1.2084	1.3118	672.4	808	.721
1250	2.8224-6	308.0	9.8098	28.949	495	1.0000	-1.0000	1.2227	1.3070	685.0	839	.721	1.2162	1.3092	685.6	835	.721
1300	2.7138-6	369.4	9.8579	28.949	507	1.0001	-1.0000	1.2323	1.3039	697.7	868	.721	1.2236	1.3067	698.5	861	.721
1350	2.6133-6	431.2	9.9046	28.949	520	1.0001	-1.0000	1.2423	1.3008	710.2	896	.721	1.2307	1.3044	711.2	887	.721
1400	2.5199-6	493.6	9.9500	28.949	532	1.0002	-1.0000	1.2526	1.2977	722.3	925	.721	1.2374	1.3023	723.6	913	.721
1450	2.4330-6	556.5	9.9941	28.949	544	1.0004	-1.0000	1.2638	1.2944	734.2	955	.720	1.2437	1.3003	735.9	939	.721
1500	2.3519-6	620.0	10.0372	28.948	556	1.0007	-1.0000	1.2761	1.2909	745.8	986	.720	1.2498	1.2984	747.9	964	.721
1550	2.2759-6	684.1	10.0792	28.947	568	1.0011	-1.0000	1.2901	1.2872	757.0	1020	.719	1.2555	1.2966	759.8	989	.721
1600	2.2047-6	749.0	10.1204	28.946	580	1.0017	-1.0000	1.3065	1.2830	767.9	1057	.717	1.2610	1.2950	771.5	1014	.721
1650	2.1378-6	814.8	10.1609	28.944	591	1.0027	-1.0001	1.3264	1.2783	778.4	1099	.714	1.2662	1.2934	783.0	1039	.720
1700	2.0747-6	881.8	10.2009	28.941	603	1.0042	-1.0001	1.3512	1.2728	788.4	1147	.710	1.2711	1.2920	794.4	1064	.720
1750	2.0151-6	950.1	10.2405	28.937	614	1.0064	-1.0002	1.3827	1.2663	798.0	1205	.704	1.2758	1.2907	805.6	1088	.720
1800	1.9587-6	1020.2	10.2800	28.930	625	1.0097	-1.0003	1.4234	1.2588	807.0	1278	.696	1.2802	1.2895	816.7	1112	.719
1850	1.9051-6	1092.6	10.3197	28.921	636	1.0143	-1.0004	1.4764	1.2499	815.3	1371	.685	1.2844	1.2884	827.8	1136	.719
1900	1.8541-6	1168.1	10.3599	28.907	647	1.0209	-1.0006	1.5456	1.2397	823.1	1492	.670	1.2884	1.2874	838.8	1160	.719
1950	1.8054-6	1247.5	10.4012	28.889	658	1.0300	-1.0009	1.6355	1.2282	830.2	1651	.652	1.2921	1.2866	849.7	1184	.718
2000	1.7587-6	1332.1	10.4440	28.862	668	1.0425	-1.0013	1.7515	1.2157	836.9	1861	.629	1.2957	1.2859	860.7	1207	.718
2050	1.7136-6	1423.2	10.4890	28.826	679	1.0592	-1.0019	1.8995	1.2026	843.3	2137	.603	1.2991	1.2854	871.8	1230	.717
2100	1.6700-6	1522.7	10.5369	28.778	689	1.0811	-1.0027	2.0855	1.1894	849.5	2496	.576	1.3023	1.2851	883.0	1253	.716
2150	1.6276-6	1632.5	10.5886	28.714	699	1.1092	-1.0037	2.3149	1.1767	855.9	2955	.548	1.3053	1.2851	894.4	1276	.716
2200	1.5860-6	1754.9	10.6449	28.631	709	1.1444	-1.0050	2.5921	1.1651	862.7	3529	.521	1.3081	1.2853	906.2	1299	.714
2250	1.5450-6	1892.5	10.7067	28.525	719	1.1873	-1.0067	2.9192	1.1548	870.2	4225	.497	1.3109	1.2859	918.3	1323	.713
2300	1.5044-6	2047.7	10.7749	28.392	729	1.2381	-1.0088	3.2954	1.1460	878.6	5038	.477	1.3135	1.2869	931.0	1347	.711
2350	1.4640-6	2222.8	10.8502	28.230	738	1.2967	-1.0113	3.7166	1.1389	887.8	5950	.461	1.3160	1.2883	944.3	1372	.708
2400	1.4236-6	2420.0	10.9332	28.035	748	1.3620	-1.0141	4.1744	1.1333	898.1	6920	.451	1.3185	1.2902	958.3	1399	.705
2450	1.3832-6	2640.7	11.0242	27.807	757	1.4324	-1.0174	4.6559	1.1292	909.5	7891	.447	1.3210	1.2926	973.1	1427	.701
2500	1.3427-6	2885.6	11.1232	27.545	766	1.5052	-1.0208	5.1429	1.1263	921.9	8793	.448	1.3235	1.2954	988.7	1458	.696
2550	1.3024-6	3154.6	11.2297	27.251	776	1.5767	-1.0244	5.6113	1.1246	935.4	9559	.455	1.3261	1.2988	1005.2	1490	.690
2600	1.2623-6	3446.0	11.3428	26.930	785	1.6424	-1.0278	6.0327	1.1239	949.8	10128	.467	1.3287	1.3027	1022.6	1524	.684
2650	1.2227-6	3756.6	11.4612	26.588	794	1.6975	-1.0309	6.3768	1.1241	965.2	10467	.484	1.3314	1.3070	1040.7	1559	.678
2700	1.1841-6	4081.9	11.5828	26.233	804	1.7377	-1.0334	6.6167	1.1252	981.2	10570	.503	1.3341	1.3116	1059.4	1595	.672
2750	1.1466-6	4416.2	11.7054	25.875	813	1.7600	-1.0352	6.7328	1.1270	997.9	10451	.524	1.3368	1.3164	1078.6	1632	.666
2800	1.1108-6	4753.0	11.8268	25.521	823	1.7628	-1.0360	6.7147	1.1296	1015.1	10135	.545	1.3395	1.3214	1097.9	1668	.661
2850	1.0768-6	5085.4	11.9445	25.182	833	1.7458	-1.0359	6.5606	1.1331	1032.6	9653	.566	1.3421	1.3263	1117.1	1703	.656
2900	1.0449-6	5406.9	12.0563	24.865	843	1.7103	-1.0349	6.2782	1.1375	1050.3	9034	.586	1.3445	1.3310	1136.1	1737	.653
2950	1.0152-6	5711.4	12.1604	24.575	853	1.6587	-1.0330	5.8855	1.1431	1068.1	8315	.604	1.3468	1.3355	1154.5	1770	.649
3000	9.8781-7	5994.1	12.2555	24.317	863	1.5950	-1.0304	5.4118	1.1498	1086.0	7539	.620	1.3490	1.3395	1172.2	1801	.646

TABLE 7.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016907; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9200-5	-108.0	8.7586	28.949	399	1.0000	-1.0000	1.1519	1.3321	586.8	637	.722	1.1516	1.3323	586.8	636	.722
950	3.7137-5	-50.1	8.8212	28.949	413	1.0000	-1.0000	1.1634	1.3278	601.9	667	.721	1.1628	1.3280	601.9	667	.721
1000	3.5280-5	8.3	8.8812	28.949	428	1.0000	-1.0000	1.1743	1.3237	616.6	697	.721	1.1733	1.3241	616.7	697	.721
1050	3.3600-5	67.3	8.9387	28.949	442	1.0000	-1.0000	1.1843	1.3202	631.0	726	.721	1.1827	1.3207	631.1	725	.720
1100	3.2073-5	126.7	8.9940	28.949	455	1.0000	-1.0000	1.1940	1.3167	645.0	755	.721	1.1917	1.3175	645.2	753	.720
1150	3.0678-5	186.7	9.0473	28.949	469	1.0000	-1.0000	1.2036	1.3134	658.6	783	.721	1.2003	1.3145	658.9	781	.721
1200	2.9400-5	247.1	9.0987	28.949	482	1.0000	-1.0000	1.2130	1.3102	672.0	811	.721	1.2084	1.3118	672.4	808	.721
1250	2.8224-5	308.0	9.1484	28.949	495	1.0000	-1.0000	1.2223	1.3071	685.0	839	.721	1.2162	1.3092	685.6	835	.721
1300	2.7138-5	369.3	9.1966	28.949	507	1.0000	-1.0000	1.2317	1.3041	697.8	867	.721	1.2236	1.3067	698.5	861	.721
1350	2.6133-5	431.1	9.2432	28.949	520	1.0001	-1.0000	1.2412	1.3011	710.3	895	.721	1.2307	1.3044	711.2	887	.721
1400	2.5200-5	493.4	9.2885	28.949	532	1.0001	-1.0000	1.2508	1.2981	722.5	923	.721	1.2374	1.3023	723.6	913	.721
1450	2.4331-5	556.2	9.3326	28.949	544	1.0002	-1.0000	1.2608	1.2951	734.4	952	.721	1.2437	1.3003	735.9	939	.721
1500	2.3519-5	619.5	9.3755	28.949	556	1.0003	-1.0000	1.2713	1.2921	746.1	981	.721	1.2498	1.2984	747.9	964	.721
1550	2.2760-5	683.4	9.4174	28.948	568	1.0005	-1.0000	1.2824	1.2890	757.5	1012	.720	1.2555	1.2966	759.8	989	.721
1600	2.2049-5	747.8	9.4583	28.948	580	1.0008	-1.0000	1.2945	1.2857	768.7	1044	.719	1.2610	1.2950	771.4	1014	.721
1650	2.1380-5	812.8	9.4983	28.947	591	1.0012	-1.0000	1.3080	1.2822	779.5	1077	.718	1.2662	1.2934	782.9	1039	.720
1700	2.0750-5	878.6	9.5376	28.946	603	1.0018	-1.0000	1.3232	1.2785	790.1	1113	.716	1.2711	1.2920	794.3	1064	.720
1750	2.0156-5	945.2	9.5762	28.944	614	1.0026	-1.0001	1.3408	1.2744	800.4	1153	.714	1.2758	1.2906	805.5	1088	.720
1800	1.9594-5	1012.7	9.6143	28.941	625	1.0038	-1.0001	1.3616	1.2698	810.3	1196	.712	1.2802	1.2893	816.5	1112	.720
1850	1.9062-5	1081.4	9.6519	28.938	636	1.0055	-1.0001	1.3866	1.2648	819.9	1247	.708	1.2844	1.2882	827.5	1136	.719
1900	1.8557-5	1151.5	9.6893	28.933	647	1.0078	-1.0002	1.4169	1.2591	829.1	1305	.702	1.2884	1.2871	838.3	1160	.719
1950	1.8077-5	1223.2	9.7265	28.926	658	1.0110	-1.0003	1.4542	1.2527	837.9	1375	.696	1.2921	1.2861	849.0	1183	.719
2000	1.7620-5	1297.1	9.7639	28.916	669	1.0152	-1.0005	1.5000	1.2455	846.3	1460	.687	1.2957	1.2852	859.7	1206	.718
2050	1.7182-5	1373.4	9.8016	28.903	679	1.0209	-1.0007	1.5565	1.2376	854.3	1564	.676	1.2991	1.2844	870.3	1229	.718
2100	1.6763-5	1452.9	9.8399	28.886	690	1.0284	-1.0009	1.6260	1.2289	861.9	1693	.662	1.3023	1.2837	880.9	1251	.718
2150	1.6361-5	1536.3	9.8791	28.864	700	1.0380	-1.0013	1.7110	1.2197	869.1	1853	.647	1.3053	1.2832	891.5	1274	.718
2200	1.5973-5	1624.3	9.9196	28.835	710	1.0503	-1.0017	1.8140	1.2101	876.2	2051	.628	1.3081	1.2828	902.1	1296	.717
2250	1.5598-5	1718.0	9.9617	28.797	721	1.0657	-1.0023	1.9376	1.2004	883.1	2296	.608	1.3108	1.2825	912.8	1318	.717
2300	1.5233-5	1818.5	10.0059	28.750	731	1.0846	-1.0030	2.0837	1.1908	890.0	2594	.587	1.3134	1.2824	923.6	1340	.716
2350	1.4879-5	1926.8	10.0525	28.691	740	1.1075	-1.0040	2.2541	1.1816	897.0	2954	.565	1.3158	1.2825	934.5	1362	.716
2400	1.4532-5	2044.3	10.1019	28.618	750	1.1346	-1.0051	2.4494	1.1731	904.4	3379	.544	1.3181	1.2827	945.7	1384	.715
2450	1.4191-5	2172.2	10.1547	28.530	760	1.1661	-1.0065	2.6693	1.1655	912.2	3872	.524	1.3202	1.2833	957.2	1406	.713
2500	1.3856-5	2311.6	10.2110	28.424	769	1.2020	-1.0081	2.9123	1.1588	920.5	4430	.506	1.3223	1.2841	969.0	1429	.712
2550	1.3525-5	2463.7	10.2712	28.300	779	1.2421	-1.0099	3.1758	1.1531	929.5	5045	.490	1.3242	1.2851	981.2	1453	.710
2600	1.3197-5	2629.5	10.3356	28.155	788	1.2860	-1.0120	3.4560	1.1485	939.0	5703	.478	1.3261	1.2865	993.9	1478	.708
2650	1.2872-5	2809.5	10.4042	27.990	798	1.3330	-1.0143	3.7482	1.1448	949.3	6382	.468	1.3280	1.2881	1007.0	1503	.705
2700	1.2549-5	3004.4	10.4770	27.804	807	1.3822	-1.0169	4.0465	1.1420	960.2	7055	.463	1.3299	1.2901	1020.6	1530	.701
2750	1.2229-5	3214.2	10.5540	27.597	816	1.4325	-1.0196	4.3437	1.1400	971.8	7693	.461	1.3317	1.2924	1034.8	1558	.698
2800	1.1912-5	3438.6	10.6349	27.370	826	1.4823	-1.0223	4.6310	1.1387	984.2	8265	.463	1.3336	1.2950	1049.5	1588	.693
2850	1.1599-5	3676.9	10.7192	27.126	835	1.5299	-1.0251	4.8987	1.1381	997.1	8745	.468	1.3355	1.2979	1064.8	1619	.689
2900	1.1290-5	3928.0	10.8065	26.867	844	1.5733	-1.0278	5.1355	1.1382	1010.7	9111	.476	1.3375	1.3010	1080.6	1651	.684
2950	1.0987-5	4189.8	10.8961	26.596	854	1.6106	-1.0302	5.3307	1.1389	1024.8	9350	.487	1.3395	1.3044	1096.8	1684	.679
3000	1.0691-5	4460.1	10.9869	26.318	864	1.6397	-1.0323	5.4739	1.1401	1039.5	9458	.500	1.3415	1.3080	1113.4	1718	.674

TABLE 7.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016907; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE		J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
900	3.9200-4	-108.0	8.0973	28.949	399	1.0000 -1.0000	1.1519	1.3321	586.8	637	.722	1.1516	1.3323	586.8	636 .722
950	3.7137-4	-50.1	8.1599	28.949	413	1.0000 -1.0000	1.1634	1.3278	601.9	667	.721	1.1628	1.3280	601.9	667 .721
1000	3.5280-4	8.3	8.2199	28.949	428	1.0000 -1.0000	1.1743	1.3237	616.6	697	.721	1.1733	1.3241	616.7	697 .721
1050	3.3600-4	67.3	8.2774	28.949	442	1.0000 -1.0000	1.1843	1.3202	631.0	726	.721	1.1827	1.3207	631.1	725 .720
1100	3.2073-4	126.7	8.3327	28.949	455	1.0000 -1.0000	1.1940	1.3167	645.0	755	.721	1.1917	1.3175	645.2	753 .720
1150	3.0678-4	186.7	8.3860	28.949	469	1.0000 -1.0000	1.2035	1.3134	658.6	783	.721	1.2003	1.3145	658.9	781 .721
1200	2.9400-4	247.1	8.4374	28.949	482	1.0000 -1.0000	1.2129	1.3103	672.0	811	.721	1.2084	1.3118	672.4	808 .721
1250	2.8224-4	307.9	8.4871	28.949	495	1.0000 -1.0000	1.2222	1.3072	685.0	839	.721	1.2162	1.3092	685.6	835 .721
1300	2.7138-4	369.3	8.5352	28.949	507	1.0000 -1.0000	1.2314	1.3042	697.8	867	.721	1.2236	1.3067	698.5	861 .721
1350	2.6133-4	431.1	8.5819	28.949	520	1.0000 -1.0000	1.2406	1.3013	710.3	895	.721	1.2307	1.3044	711.2	887 .721
1400	2.5200-4	493.4	8.6272	28.949	532	1.0001 -1.0000	1.2499	1.2984	722.5	923	.721	1.2373	1.3023	723.6	913 .721
1450	2.4331-4	556.1	8.6712	28.949	544	1.0001 -1.0000	1.2594	1.2955	734.5	951	.721	1.2437	1.3003	735.9	939 .721
1500	2.3520-4	619.3	8.7140	28.949	556	1.0002 -1.0000	1.2691	1.2926	746.2	979	.721	1.2498	1.2984	747.9	964 .721
1550	2.2761-4	683.0	8.7558	28.949	568	1.0002 -1.0000	1.2790	1.2898	757.7	1008	.721	1.2555	1.2966	759.7	989 .721
1600	2.2049-4	747.2	8.7966	28.949	580	1.0004 -1.0000	1.2894	1.2868	769.0	1038	.720	1.2610	1.2949	771.4	1014 .721
1650	2.1381-4	811.9	8.8364	28.948	591	1.0005 -1.0000	1.3003	1.2839	780.0	1069	.720	1.2662	1.2934	782.9	1039 .720
1700	2.0752-4	877.2	8.8754	28.948	603	1.0008 -1.0000	1.3119	1.2809	790.8	1100	.719	1.2711	1.2919	794.2	1064 .720
1750	2.0158-4	943.1	8.9136	28.947	614	1.0012 -1.0000	1.3244	1.2777	801.4	1133	.718	1.2758	1.2906	805.4	1088 .720
1800	1.9597-4	1009.7	8.9511	28.946	625	1.0016 -1.0000	1.3381	1.2744	811.7	1168	.717	1.2802	1.2893	816.5	1112 .720
1850	1.9067-4	1077.0	8.9880	28.944	636	1.0023 -1.0001	1.3533	1.2709	821.8	1204	.715	1.2844	1.2881	827.4	1136 .719
1900	1.8564-4	1145.1	9.0243	28.942	647	1.0032 -1.0001	1.3703	1.2672	831.7	1244	.713	1.2884	1.2870	838.1	1160 .719
1950	1.8086-4	1214.1	9.0601	28.939	658	1.0044 -1.0001	1.3898	1.2633	841.3	1287	.710	1.2921	1.2859	848.8	1183 .719
2000	1.7631-4	1284.1	9.0956	28.936	669	1.0059 -1.0002	1.4121	1.2590	850.6	1335	.707	1.2957	1.2850	859.3	1206 .718
2050	1.7198-4	1355.3	9.1308	28.931	679	1.0080 -1.0002	1.4380	1.2544	859.7	1389	.704	1.2991	1.2841	869.8	1229 .718
2100	1.6785-4	1428.0	9.1658	28.924	690	1.0106 -1.0003	1.4682	1.2494	868.5	1450	.699	1.3023	1.2833	880.1	1251 .718
2150	1.6390-4	1502.2	9.2007	28.916	700	1.0140 -1.0005	1.5036	1.2441	877.0	1520	.693	1.3053	1.2825	890.4	1273 .718
2200	1.6012-4	1578.4	9.2358	28.905	711	1.0183 -1.0006	1.5451	1.2383	885.2	1602	.685	1.3082	1.2818	900.7	1295 .718
2250	1.5649-4	1656.9	9.2710	28.892	721	1.0237 -1.0008	1.5937	1.2321	893.2	1698	.677	1.3109	1.2813	910.8	1317 .718
2300	1.5299-4	1737.9	9.3067	28.875	731	1.0303 -1.0011	1.6505	1.2257	901.0	1811	.666	1.3135	1.2808	921.0	1338 .718
2350	1.4963-4	1822.1	9.3428	28.853	741	1.0384 -1.0014	1.7165	1.2190	908.6	1944	.655	1.3159	1.2804	931.2	1359 .718
2400	1.4638-4	1909.7	9.3798	28.827	751	1.0483 -1.0018	1.7926	1.2121	916.0	2100	.641	1.3182	1.2801	941.3	1381 .717
2450	1.4323-4	2001.5	9.4176	28.795	761	1.0600 -1.0023	1.8797	1.2053	923.4	2283	.627	1.3204	1.2799	951.5	1402 .717
2500	1.4018-4	2097.9	9.4565	28.756	771	1.0738 -1.0029	1.9784	1.1985	930.8	2495	.611	1.3224	1.2798	961.8	1423 .717
2550	1.3721-4	2199.5	9.4968	28.710	781	1.0898 -1.0036	2.0889	1.1920	938.2	2740	.595	1.3244	1.2799	972.2	1444 .716
2600	1.3431-4	2307.0	9.5385	28.655	790	1.1082 -1.0044	2.2113	1.1859	945.8	3019	.579	1.3262	1.2801	982.7	1465 .715
2650	1.3148-4	2420.9	9.5819	28.590	800	1.1289 -1.0054	2.3449	1.1802	953.7	3334	.562	1.3279	1.2804	993.3	1487 .714
2700	1.2871-4	2541.7	9.6270	28.516	809	1.1519 -1.0065	2.4889	1.1750	961.8	3683	.547	1.3296	1.2809	1004.2	1509 .713
2750	1.2599-4	2669.9	9.6741	28.430	819	1.1772 -1.0078	2.6420	1.1705	970.2	4065	.532	1.3311	1.2816	1015.2	1531 .712
2800	1.2331-4	2806.0	9.7231	28.332	828	1.2045 -1.0092	2.8026	1.1665	979.0	4475	.518	1.3327	1.2824	1026.5	1554 .710
2850	1.2068-4	2950.2	9.7742	28.223	837	1.2336 -1.0107	2.9690	1.1632	988.2	4908	.506	1.3341	1.2834	1038.1	1577 .708
2900	1.1809-4	3102.9	9.8273	28.101	847	1.2642 -1.0124	3.1393	1.1604	997.8	5356	.496	1.3355	1.2846	1049.9	1601 .706
2950	1.1553-4	3264.2	9.8824	27.967	856	1.2961 -1.0142	3.3114	1.1582	1007.9	5809	.488	1.3369	1.2860	1062.0	1625 .704
3000	1.1301-4	3434.1	9.9395	27.820	865	1.3287 -1.0161	3.4832	1.1566	1018.3	6257	.482	1.3383	1.2875	1074.4	1650 .701

TABLE 7.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016907; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9200-3	-108.0	7.4360	28.950	399	1.0000	-1.0000	1.1519	1.3321	586.8	637	.722	1.1516	1.3323	586.8	636	.722
950	3.7137-3	-50.1	7.4986	28.950	413	1.0000	-1.0000	1.1635	1.3278	601.9	667	.721	1.1628	1.3280	601.9	667	.721
1000	3.5280-3	8.3	7.5585	28.950	428	1.0000	-1.0000	1.1743	1.3237	616.6	697	.721	1.1733	1.3241	616.7	697	.721
1050	3.3600-3	67.3	7.6161	28.950	442	1.0000	-1.0000	1.1843	1.3201	631.0	726	.721	1.1827	1.3207	631.1	725	.720
1100	3.2073-3	126.7	7.6714	28.950	455	1.0000	-1.0000	1.1940	1.3167	645.0	755	.721	1.1917	1.3175	645.2	753	.720
1150	3.0678-3	186.7	7.7247	28.950	469	1.0000	-1.0000	1.2035	1.3134	658.6	783	.721	1.2003	1.3145	658.9	781	.721
1200	2.9400-3	247.1	7.7761	28.950	482	1.0000	-1.0000	1.2128	1.3103	672.0	811	.721	1.2084	1.3118	672.4	808	.721
1250	2.8224-3	307.9	7.8258	28.950	495	1.0000	-1.0000	1.2221	1.3072	685.0	839	.721	1.2162	1.3092	685.6	835	.721
1300	2.7138-3	369.3	7.8739	28.950	507	1.0000	-1.0000	1.2312	1.3042	697.8	867	.721	1.2236	1.3067	698.5	861	.721
1350	2.6133-3	431.1	7.9206	28.950	520	1.0000	-1.0000	1.2404	1.3013	710.3	894	.721	1.2307	1.3044	711.2	887	.721
1400	2.5200-3	493.3	7.9658	28.950	532	1.0000	-1.0000	1.2495	1.2985	722.6	922	.721	1.2373	1.3023	723.6	913	.721
1450	2.4331-3	556.0	8.0098	28.950	544	1.0000	-1.0000	1.2587	1.2957	734.6	950	.721	1.2437	1.3003	735.9	939	.721
1500	2.3520-3	619.2	8.0527	28.950	556	1.0001	-1.0000	1.2680	1.2929	746.3	978	.721	1.2498	1.2984	747.9	964	.721
1550	2.2761-3	682.8	8.0944	28.949	568	1.0001	-1.0000	1.2774	1.2901	757.8	1007	.721	1.2555	1.2966	759.7	989	.721
1600	2.2050-3	746.9	8.1351	28.949	580	1.0002	-1.0000	1.2870	1.2874	769.1	1036	.721	1.2610	1.2949	771.4	1014	.721
1650	2.1381-3	811.5	8.1748	28.949	591	1.0003	-1.0000	1.2968	1.2847	780.2	1065	.720	1.2662	1.2934	782.9	1039	.721
1700	2.0752-3	876.6	8.2137	28.949	603	1.0004	-1.0000	1.3069	1.2819	791.1	1095	.720	1.2711	1.2919	794.2	1064	.720
1750	2.0159-3	942.2	8.2517	28.948	614	1.0005	-1.0000	1.3174	1.2792	801.8	1125	.719	1.2758	1.2905	805.4	1088	.720
1800	1.9599-3	1008.4	8.2890	28.948	625	1.0007	-1.0000	1.3283	1.2764	812.3	1156	.718	1.2802	1.2893	816.4	1112	.720
1850	1.9069-3	1075.1	8.3256	28.947	636	1.0010	-1.0000	1.3398	1.2735	822.6	1188	.718	1.2844	1.2880	827.3	1136	.719
1900	1.8566-3	1142.3	8.3614	28.946	647	1.0014	-1.0000	1.3519	1.2707	832.7	1221	.717	1.2884	1.2869	838.1	1160	.719
1950	1.8089-3	1210.3	8.3967	28.945	658	1.0019	-1.0001	1.3649	1.2677	842.7	1255	.716	1.2921	1.2859	848.7	1183	.719
2000	1.7636-3	1278.9	8.4315	28.944	669	1.0025	-1.0001	1.3789	1.2647	852.4	1291	.714	1.2957	1.2849	859.2	1206	.718
2050	1.7205-3	1348.2	8.4657	28.941	679	1.0033	-1.0001	1.3942	1.2615	862.0	1329	.713	1.2991	1.2839	869.6	1229	.718
2100	1.6794-3	1418.3	8.4995	28.939	690	1.0043	-1.0001	1.4108	1.2583	871.3	1369	.711	1.3023	1.2831	879.9	1251	.718
2150	1.6401-3	1489.3	8.5329	28.935	700	1.0056	-1.0002	1.4292	1.2549	880.5	1412	.709	1.3054	1.2823	890.0	1273	.718
2200	1.6026-3	1561.2	8.5660	28.931	711	1.0072	-1.0002	1.4496	1.2514	889.5	1459	.706	1.3082	1.2815	900.1	1295	.718
2250	1.5667-3	1634.3	8.5988	28.926	721	1.0091	-1.0003	1.4723	1.2477	898.3	1510	.703	1.3110	1.2808	910.1	1316	.718
2300	1.5323-3	1708.5	8.6314	28.919	731	1.0115	-1.0004	1.4977	1.2438	906.9	1566	.700	1.3136	1.2802	920.1	1338	.718
2350	1.4993-3	1784.1	8.6639	28.911	741	1.0144	-1.0005	1.5262	1.2398	915.3	1628	.695	1.3160	1.2796	929.9	1359	.718
2400	1.4676-3	1861.2	8.6964	28.902	752	1.0179	-1.0007	1.5582	1.2356	923.6	1697	.690	1.3183	1.2791	939.8	1380	.718
2450	1.4370-3	1940.0	8.7289	28.890	762	1.0221	-1.0008	1.5941	1.2312	931.7	1775	.684	1.3205	1.2787	949.5	1401	.718
2500	1.4076-3	2020.7	8.7615	28.875	771	1.0271	-1.0010	1.6342	1.2268	939.7	1862	.677	1.3226	1.2783	959.3	1421	.718
2550	1.3792-3	2103.5	8.7943	28.858	781	1.0330	-1.0013	1.6790	1.2222	947.6	1961	.669	1.3246	1.2780	969.0	1442	.718
2600	1.3517-3	2188.7	8.8274	28.838	791	1.0398	-1.0016	1.7287	1.2176	955.4	2071	.660	1.3265	1.2777	978.7	1463	.717
2650	1.3251-3	2276.4	8.8608	28.814	801	1.0477	-1.0020	1.7837	1.2130	963.1	2195	.651	1.3283	1.2775	988.4	1484	.717
2700	1.2993-3	2367.1	8.8947	28.786	810	1.0566	-1.0024	1.8439	1.2085	970.8	2334	.640	1.3300	1.2774	998.1	1504	.716
2750	1.2742-3	2460.9	8.9291	28.753	820	1.0668	-1.0029	1.9096	1.2040	978.5	2488	.629	1.3316	1.2774	1007.9	1525	.716
2800	1.2498-3	2558.2	8.9642	28.716	829	1.0781	-1.0034	1.9804	1.1998	986.2	2658	.618	1.3331	1.2775	1017.7	1546	.715
2850	1.2261-3	2659.1	8.9999	28.673	839	1.0906	-1.0040	2.0562	1.1957	994.1	2846	.606	1.3345	1.2776	1027.5	1566	.715
2900	1.2029-3	2763.9	9.0363	28.625	848	1.1044	-1.0048	2.1366	1.1920	1002.0	3050	.594	1.3359	1.2778	1037.5	1587	.714
2950	1.1803-3	2872.8	9.0736	28.570	857	1.1192	-1.0056	2.2210	1.1885	1010.1	3271	.582	1.3373	1.2782	1047.5	1608	.713
3000	1.1581-3	2986.0	9.1116	28.509	867	1.1352	-1.0064	2.3087	1.1853	1018.4	3508	.570	1.3385	1.2786	1057.7	1629	.712

TABLE 7.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016907; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9600-2	-108.0	6.9738	28.950	399	1.0000	-1.0000	1.1520	1.3321	586.8	637	.722	1.1516	1.3323	586.8	636	.722
950	1.8568-2	-50.1	7.0364	28.950	413	1.0000	-1.0000	1.1635	1.3277	601.9	667	.721	1.1628	1.3280	601.9	667	.721
1000	1.7640-2	8.3	7.0963	28.950	428	1.0000	-1.0000	1.1744	1.3237	616.6	697	.721	1.1733	1.3241	616.7	697	.721
1050	1.6800-2	67.3	7.1539	28.950	442	1.0000	-1.0000	1.1843	1.3201	631.0	726	.721	1.1827	1.3207	631.1	725	.720
1100	1.6036-2	126.7	7.2092	28.950	455	1.0000	-1.0000	1.1940	1.3167	645.0	755	.721	1.1917	1.3175	645.2	753	.720
1150	1.5339-2	186.7	7.2625	28.950	469	1.0000	-1.0000	1.2035	1.3134	658.6	783	.721	1.2003	1.3145	658.9	781	.721
1200	1.4700-2	247.1	7.3139	28.950	482	1.0000	-1.0000	1.2129	1.3102	672.0	811	.721	1.2084	1.3118	672.4	808	.721
1250	1.4112-2	308.0	7.3636	28.950	495	1.0000	-1.0000	1.2221	1.3072	685.0	839	.721	1.2162	1.3091	685.6	835	.721
1300	1.3569-2	369.3	7.4117	28.950	507	1.0000	-1.0000	1.2312	1.3042	697.8	867	.721	1.2236	1.3067	698.5	861	.721
1350	1.3067-2	431.1	7.4583	28.950	520	1.0000	-1.0000	1.2403	1.3013	710.3	894	.721	1.2307	1.3044	711.2	887	.721
1400	1.2600-2	493.3	7.5036	28.950	532	1.0000	-1.0000	1.2494	1.2985	722.6	922	.721	1.2374	1.3023	723.6	913	.721
1450	1.2166-2	556.0	7.5476	28.950	544	1.0000	-1.0000	1.2584	1.2957	734.6	950	.721	1.2437	1.3003	735.9	939	.721
1500	1.1760-2	619.2	7.5904	28.950	556	1.0000	-1.0000	1.2676	1.2929	746.3	978	.721	1.2498	1.2984	747.9	964	.721
1550	1.1381-2	682.8	7.6321	28.950	568	1.0000	-1.0000	1.2768	1.2902	757.9	1006	.721	1.2555	1.2966	759.7	989	.721
1600	1.1025-2	746.8	7.6728	28.950	580	1.0001	-1.0000	1.2861	1.2876	769.2	1035	.721	1.2610	1.2949	771.4	1014	.721
1650	1.0691-2	811.4	7.7125	28.950	591	1.0001	-1.0000	1.2955	1.2849	780.3	1064	.720	1.2662	1.2934	782.9	1039	.721
1700	1.0376-2	876.4	7.7513	28.950	603	1.0002	-1.0000	1.3051	1.2823	791.2	1093	.720	1.2711	1.2919	794.2	1064	.720
1750	1.0080-2	941.9	7.7893	28.949	614	1.0003	-1.0000	1.3149	1.2796	802.0	1122	.720	1.2758	1.2905	805.4	1088	.720
1800	9.7998-3	1007.9	7.8265	28.949	625	1.0004	-1.0000	1.3249	1.2770	812.5	1152	.719	1.2802	1.2892	816.4	1112	.720
1850	9.5348-3	1074.4	7.8629	28.949	636	1.0006	-1.0000	1.3352	1.2744	822.9	1183	.718	1.2844	1.2880	827.3	1136	.719
1900	9.2837-3	1141.4	7.8987	28.948	647	1.0008	-1.0000	1.3458	1.2718	833.1	1214	.718	1.2884	1.2869	838.0	1160	.719
1950	9.0455-3	1209.0	7.9338	28.947	658	1.0011	-1.0000	1.3568	1.2692	843.1	1245	.717	1.2921	1.2858	848.6	1183	.719
2000	8.8191-3	1277.1	7.9683	28.947	669	1.0014	-1.0001	1.3683	1.2665	853.0	1278	.716	1.2957	1.2848	859.1	1206	.718
2050	8.6036-3	1345.8	8.0022	28.945	679	1.0018	-1.0001	1.3804	1.2639	862.7	1311	.715	1.2991	1.2839	869.5	1229	.718
2100	8.3984-3	1415.2	8.0356	28.944	690	1.0024	-1.0001	1.3931	1.2612	872.2	1345	.715	1.3023	1.2830	879.7	1251	.718
2150	8.2025-3	1485.1	8.0686	28.942	700	1.0030	-1.0001	1.4066	1.2584	881.6	1381	.713	1.3054	1.2822	889.9	1273	.718
2200	8.0155-3	1555.8	8.1011	28.940	711	1.0039	-1.0001	1.4210	1.2557	890.9	1418	.712	1.3083	1.2814	900.0	1295	.718
2250	7.8366-3	1627.3	8.1332	28.937	721	1.0049	-1.0002	1.4364	1.2528	900.0	1458	.711	1.3110	1.2807	909.9	1316	.718
2300	7.6653-3	1699.5	8.1649	28.934	731	1.0061	-1.0002	1.4530	1.2499	908.9	1499	.709	1.3136	1.2800	919.8	1338	.718
2350	7.5011-3	1772.6	8.1964	28.929	742	1.0076	-1.0003	1.4710	1.2470	917.7	1544	.707	1.3161	1.2794	929.6	1359	.718
2400	7.3435-3	1846.6	8.2275	28.924	752	1.0093	-1.0004	1.4906	1.2439	926.4	1591	.704	1.3184	1.2788	939.3	1380	.718
2450	7.1921-3	1921.7	8.2585	28.918	762	1.0114	-1.0004	1.5119	1.2408	934.9	1642	.701	1.3206	1.2783	948.9	1401	.718
2500	7.0465-3	1997.8	8.2892	28.911	772	1.0139	-1.0005	1.5351	1.2377	943.3	1697	.698	1.3227	1.2778	958.5	1421	.718
2550	6.9062-3	2075.2	8.3199	28.902	781	1.0168	-1.0007	1.5605	1.2344	951.6	1758	.694	1.3247	1.2774	968.0	1442	.718
2600	6.7710-3	2153.9	8.3505	28.892	791	1.0202	-1.0008	1.5883	1.2312	959.8	1823	.689	1.3266	1.2770	977.5	1463	.718
2650	6.6405-3	2234.1	8.3810	28.879	801	1.0240	-1.0010	1.6185	1.2278	967.9	1895	.684	1.3284	1.2767	986.9	1483	.717
2700	6.5143-3	2315.8	8.4116	28.865	811	1.0285	-1.0012	1.6514	1.2245	975.8	1974	.678	1.3302	1.2764	996.3	1504	.717
2750	6.3922-3	2399.3	8.4422	28.849	820	1.0336	-1.0014	1.6872	1.2211	983.8	2059	.672	1.3318	1.2762	1005.7	1524	.717
2800	6.2740-3	2484.6	8.4729	28.830	830	1.0393	-1.0017	1.7258	1.2177	991.6	2153	.665	1.3334	1.2760	1015.1	1544	.716
2850	6.1593-3	2571.9	8.5038	28.808	839	1.0458	-1.0020	1.7673	1.2144	999.5	2255	.658	1.3349	1.2759	1024.4	1565	.716
2900	6.0479-3	2661.4	8.5350	28.784	849	1.0529	-1.0024	1.8118	1.2112	1007.3	2367	.650	1.3363	1.2758	1033.8	1585	.715
2950	5.9396-3	2753.1	8.5663	28.756	858	1.0608	-1.0028	1.8591	1.2080	1015.1	2487	.641	1.3376	1.2758	1043.2	1605	.715
3000	5.8342-3	2847.3	8.5980	28.724	867	1.0695	-1.0033	1.9091	1.2050	1022.9	2617	.633	1.3390	1.2758	1052.6	1625	.714

TABLE 7C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016907; EQUIV.RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.826-5	-917.4	7.5776	28.949	1.0529	1.788-5	29.336	132	1.000	-1.000	0.9992	1.3960	281	180	.734	200
220	1.656-5	-893.0	7.6936	28.949	1.5821	1.624-5	29.308	143	1.000	-1.000	1.0000	1.3960	295	196	.731	220
240	1.481-5	-830.1	7.9643	28.949	6.1749	1.474-5	29.035	151	1.000	-1.000	1.0129	1.3942	310	208	.735	240
						PRESSURE = 0.10 ATM										
200	1.827-4	-917.6	6.9377	28.949	1.0154	1.788-4	29.338	132	1.000	-1.000	0.9991	1.3960	281	180	.734	200
220	1.660-4	-897.0	7.0361	28.949	1.0704	1.625-4	29.335	143	1.000	-1.000	0.9988	1.3962	295	196	.730	220
240	1.518-4	-872.5	7.1422	28.949	1.5082	1.488-4	29.308	154	1.000	-1.000	1.0001	1.3960	308	211	.727	240
260	1.378-4	-823.3	7.3381	28.949	4.1232	1.365-4	29.120	162	1.000	-1.000	1.0094	1.3945	322	225	.729	260
280	1.260-4	-775.8	7.5164	28.949	1.0184	1.260-4	28.949	171	1.000	-1.000	1.0184	1.3928	335	238	.731	280
						PRESSURE = 1.00 ATM										
200	1.827-3	-917.7	6.2989	28.949	1.0116	1.788-3	29.338	132	1.000	-1.000	0.9991	1.3960	281	180	.734	200
220	1.660-3	-897.4	6.3956	28.949	1.0195	1.625-3	29.338	143	1.000	-1.000	0.9986	1.3962	295	196	.730	220
240	1.522-3	-876.6	6.4857	28.949	1.0659	1.490-3	29.335	154	1.000	-1.000	0.9988	1.3962	308	212	.726	240
260	1.402-3	-853.4	6.5785	28.949	1.3204	1.374-3	29.316	164	1.000	-1.000	1.0002	1.3958	321	227	.724	260
280	1.292-3	-814.1	6.7235	28.949	2.0742	1.272-3	29.228	173	1.000	-1.000	1.0053	1.3947	333	241	.724	280
298	1.187-3	-762.3	6.9023	28.949	3.9227	1.185-3	28.986	180	1.000	-1.000	1.0180	1.3923	345	252	.729	298
300	1.176-3	-755.4	6.9254	28.949	1.0199	1.176-3	28.949	181	1.000	-1.000	1.0199	1.3920	346	253	.730	300
320	1.102-3	-735.0	6.9913	28.949	1.0217	1.102-3	28.949	190	1.000	-1.000	1.0217	1.3910	358	266	.729	320
						PRESSURE = 10.00 ATM										
200	1.826-2	-917.7	5.6603	28.949	1.0112	1.788-2	29.338	132	1.000	-1.000	0.9991	1.3960	281	180	.734	200
220	1.660-2	-897.4	5.7568	28.949	1.0144	1.625-2	29.338	143	1.000	-1.000	0.9986	1.3962	295	196	.730	220
240	1.522-2	-877.1	5.8453	28.949	1.0219	1.490-2	29.338	154	1.000	-1.000	0.9987	1.3962	308	212	.726	240
260	1.404-2	-856.4	5.9280	28.949	1.0507	1.375-2	29.336	164	1.000	-1.000	0.9993	1.3959	321	227	.723	260
280	1.303-2	-827.4	6.0351	28.949	1.1673	1.276-2	29.327	174	1.000	-1.000	1.0006	1.3954	333	242	.721	280
298	1.221-2	-804.9	6.1130	28.949	1.3386	1.198-2	29.303	183	1.000	-1.000	1.0029	1.3945	343	255	.721	298
300	1.213-2	-802.4	6.1214	28.949	1.3653	1.190-2	29.299	184	1.000	-1.000	1.0033	1.3944	345	256	.721	300
320	1.130-2	-771.1	6.2223	28.949	1.8244	1.113-2	29.221	193	1.000	-1.000	1.0087	1.3929	356	269	.723	320
340	1.046-2	-726.2	6.3581	28.949	2.7734	1.041-2	29.037	200	1.000	-1.000	1.0196	1.3905	368	281	.727	340
360	9.800-3	-694.0	6.4506	28.949	1.0264	9.800-3	28.949	208	1.000	-1.000	1.0264	1.3885	379	293	.730	360
380	9.284-3	-673.5	6.5061	28.949	1.0293	9.284-3	28.949	217	1.000	-1.000	1.0293	1.3870	389	306	.729	380
						PRESSURE = 50.00 ATM										
200	9.114-2	-917.7	5.2139	28.949	1.0112	8.938-2	29.338	132	1.000	-1.000	0.9991	1.3960	281	180	.734	200
220	8.287-2	-897.4	5.3104	28.949	1.0139	8.126-2	29.338	143	1.000	-1.000	0.9986	1.3962	295	196	.730	220
240	7.598-2	-877.1	5.3988	28.949	1.0180	7.449-2	29.338	154	1.000	-1.000	0.9987	1.3962	308	212	.726	240
260	7.014-2	-856.7	5.4806	28.949	1.0268	6.876-2	29.338	164	1.000	-1.000	0.9992	1.3959	321	227	.723	260
280	6.514-2	-828.6	5.5844	28.949	1.0882	6.384-2	29.336	174	1.000	-1.000	1.0002	1.3954	333	242	.721	280
298	6.115-2	-808.5	5.6537	28.949	1.1228	5.994-2	29.331	183	1.000	-1.000	1.0016	1.3947	343	255	.720	298
300	6.077-2	-806.4	5.6606	28.949	1.1282	5.957-2	29.330	184	1.000	-1.000	1.0018	1.3946	344	256	.720	300
320	5.690-2	-783.1	5.7360	28.949	1.2191	5.582-2	29.315	193	1.000	-1.000	1.0043	1.3936	356	270	.720	320
340	5.339-2	-757.1	5.8147	28.949	1.3987	5.247-2	29.278	202	1.000	-1.000	1.0081	1.3922	367	283	.722	340
360	5.009-2	-726.2	5.9029	28.949	1.7176	4.943-2	29.201	211	1.000	-1.000	1.0142	1.3903	378	295	.724	360
380	4.686-2	-687.0	6.0087	28.949	2.2418	4.659-2	29.056	218	1.000	-1.000	1.0241	1.3878	388	307	.727	380
400	4.410-2	-652.8	6.0968	28.949	1.0325	4.410-2	28.949	226	1.000	-1.000	1.0325	1.3854	399	320	.729	400
420	4.200-2	-632.2	6.1472	28.949	1.0359	4.200-2	28.949	234	1.000	-1.000	1.0359	1.3836	409	333	.728	420

TABLE 8A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.033814; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 28.9344;
DRY AIR; GASEOUS COMPOSITION: CO2= .06778; H2O= .06747; N2= .75450; O2= .10120; AR= .00905

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7631-3	8.8153-2	-1586.7	7.8569	7.1952	6.5336	5.8719	5.4095	1.0263	1.3889	282.5	124	167	.7593	200
210	1.6791-3	8.3956-2	-1576.4	7.9070	7.2453	6.5837	5.9220	5.4595	1.0266	1.3887	289.5	129	175	.7562	210
220	1.6028-3	8.0139-2	-1566.1	7.9548	7.2931	6.6314	5.9698	5.5073	1.0271	1.3884	296.3	135	184	.7532	220
230	1.5331-3	7.6655-2	-1555.9	8.0004	7.3388	6.6771	6.0155	5.5530	1.0277	1.3881	302.9	140	192	.7505	230
240	1.4692-3	7.3461-2	-1545.6	8.0442	7.3825	6.7209	6.0592	5.5967	1.0283	1.3878	309.4	145	200	.7481	240
250	1.4105-3	7.0523-2	-1535.3	8.0862	7.4245	6.7629	6.1012	5.6387	1.0291	1.3874	315.7	151	208	.7459	250
260	1.3562-3	6.7810-2	-1525.0	8.1266	7.4649	6.8032	6.1416	5.6791	1.0300	1.3869	321.9	156	216	.7441	260
270	1.3060-3	6.5299-2	-1514.7	8.1654	7.5038	6.8421	6.1805	5.7180	1.0310	1.3864	328.0	161	224	.7427	270
280	1.2593-3	6.2967-2	-1504.4	8.2030	7.5413	6.8796	6.2180	5.7555	1.0320	1.3859	333.9	166	231	.7415	280
290	1.2159-3	6.0795-2	-1494.0	8.2392	7.5775	6.9159	6.2542	5.7917	1.0332	1.3853	339.8	171	239	.7406	290
298	1.1827-3	5.9134-2	-1485.6	8.2678	7.6062	6.9445	6.2829	5.8204	1.0342	1.3848	344.4	175	245	.7400	298
300	1.1754-3	5.8769-2	-1483.7	8.2742	7.6126	6.9509	6.2893	5.8268	1.0344	1.3846	345.5	176	246	.7399	300
310	1.1375-3	5.6873-2	-1473.4	8.3082	7.6465	6.9849	6.3232	5.8607	1.0357	1.3840	351.1	181	253	.7398	310
320	1.1019-3	5.5096-2	-1463.0	8.3411	7.6794	7.0178	6.3561	5.8936	1.0371	1.3832	356.6	186	260	.7399	320
330	1.0685-3	5.3426-2	-1452.6	8.3730	7.7114	7.0497	6.3880	5.9256	1.0386	1.3825	362.1	190	267	.7400	330
340	1.0371-3	5.1855-2	-1442.2	8.4040	7.7424	7.0807	6.4191	5.9566	1.0402	1.3817	367.4	195	274	.7401	340
350	1.0075-3	5.0373-2	-1431.8	8.4342	7.7726	7.1109	6.4493	5.9868	1.0418	1.3809	372.7	199	281	.7402	350
360	9.7948-4	4.8974-2	-1421.4	8.4636	7.8019	7.1403	6.4786	6.0161	1.0435	1.3800	377.8	204	288	.7400	360
370	9.5301-4	4.7650-2	-1410.9	8.4922	7.8306	7.1689	6.5072	6.0448	1.0453	1.3791	382.9	208	295	.7397	370
380	9.2793-4	4.6397-2	-1400.5	8.5201	7.8585	7.1968	6.5351	6.0727	1.0471	1.3782	387.9	213	301	.7393	380
390	9.0414-4	4.5207-2	-1390.0	8.5473	7.8857	7.2240	6.5624	6.0999	1.0490	1.3773	392.9	217	308	.7389	390
400	8.8153-4	4.4077-2	-1379.5	8.5739	7.9123	7.2506	6.5889	6.1265	1.0510	1.3763	397.7	222	315	.7385	400
410	8.6003-4	4.3002-2	-1369.0	8.5999	7.9382	7.2766	6.6149	6.1524	1.0530	1.3753	402.5	226	322	.7383	410
420	8.3956-4	4.1978-2	-1358.4	8.6253	7.9636	7.3020	6.6403	6.1778	1.0551	1.3743	407.3	230	329	.7381	420
430	8.2003-4	4.1002-2	-1347.9	8.6502	7.9885	7.3268	6.6652	6.2027	1.0572	1.3732	411.9	234	335	.7379	430
440	8.0139-4	4.0070-2	-1337.3	8.6745	8.0128	7.3512	6.6895	6.2270	1.0594	1.3722	416.5	238	342	.7378	440
450	7.8359-4	3.9179-2	-1326.7	8.6983	8.0367	7.3750	6.7133	6.2509	1.0617	1.3711	421.1	242	349	.7377	450
460	7.6655-4	3.8328-2	-1316.1	8.7217	8.0600	7.3984	6.7367	6.2742	1.0639	1.3700	425.6	246	355	.7377	460
470	7.5024-4	3.7512-2	-1305.4	8.7446	8.0829	7.4213	6.7596	6.2971	1.0663	1.3689	430.0	250	362	.7376	470
480	7.3461-4	3.6731-2	-1294.7	8.7671	8.1054	7.4437	6.7821	6.3196	1.0686	1.3678	434.4	254	368	.7376	480
490	7.1962-4	3.5981-2	-1284.0	8.7891	8.1275	7.4658	6.8041	6.3417	1.0710	1.3667	438.7	258	375	.7376	490
500	7.0523-4	3.5261-2	-1273.3	8.8108	8.1491	7.4875	6.8258	6.3633	1.0735	1.3655	442.9	262	381	.7376	500
510	6.9140-4	3.4570-2	-1262.6	8.8321	8.1704	7.5087	6.8471	6.3846	1.0760	1.3644	447.2	266	388	.7375	510
520	6.7810-4	3.3905-2	-1251.8	8.8530	8.1913	7.5297	6.8680	6.4055	1.0785	1.3632	451.3	270	394	.7374	520
530	6.6531-4	3.3265-2	-1241.0	8.8735	8.2119	7.5502	6.8886	6.4261	1.0810	1.3621	455.5	273	401	.7373	530
540	6.5299-4	3.2649-2	-1230.2	8.8938	8.2321	7.5705	6.9088	6.4463	1.0836	1.3609	459.5	277	407	.7372	540
550	6.4112-4	3.2056-2	-1219.3	8.9137	8.2520	7.5904	6.9287	6.4662	1.0862	1.3597	463.6	281	414	.7370	550
560	6.2967-4	3.1483-2	-1208.4	8.9333	8.2716	7.6100	6.9483	6.4858	1.0888	1.3585	467.6	285	420	.7369	560
570	6.1862-4	3.0931-2	-1197.5	8.9526	8.2909	7.6293	6.9676	6.5051	1.0915	1.3573	471.5	288	427	.7367	570
580	6.0795-4	3.0398-2	-1186.6	8.9716	8.3099	7.6483	6.9866	6.5241	1.0942	1.3562	475.4	292	434	.7365	580
590	5.9765-4	2.9883-2	-1175.7	8.9903	8.3286	7.6670	7.0053	6.5429	1.0969	1.3550	479.3	295	440	.7363	590

TABLE 8A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.033814; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 28.9344;
DRY AIR; GASEOUS COMPOSITION: CO2= .06778; H2O= .06747; N2= .75450; O2= .10120; AR= .00905

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8769-4	2.9384-2	-1164.7	9.0088	8.3471	7.6854	7.0238	6.5613	1.0996	1.3538	483.1	299	447	.7361	600
610	5.7805-4	2.8903-2	-1153.7	9.0270	8.3653	7.7036	7.0420	6.5795	1.1023	1.3526	486.9	303	453	.7358	610
620	5.6873-4	2.8437-2	-1142.6	9.0449	8.3832	7.7216	7.0599	6.5975	1.1050	1.3514	490.7	306	460	.7355	620
630	5.5970-4	2.7985-2	-1131.6	9.0626	8.4010	7.7393	7.0776	6.6152	1.1078	1.3502	494.4	310	467	.7352	630
640	5.5096-4	2.7548-2	-1120.5	9.0801	8.4184	7.7568	7.0951	6.6326	1.1106	1.3491	498.1	313	473	.7349	640
650	5.4248-4	2.7124-2	-1109.4	9.0973	8.4357	7.7740	7.1123	6.6499	1.1133	1.3479	501.8	317	480	.7346	650
660	5.3426-4	2.6713-2	-1098.2	9.1143	8.4527	7.7910	7.1294	6.6669	1.1161	1.3467	505.4	320	487	.7343	660
670	5.2629-4	2.6314-2	-1087.0	9.1311	8.4695	7.8078	7.1462	6.6837	1.1189	1.3456	509.0	324	493	.7340	670
680	5.1855-4	2.5927-2	-1075.8	9.1477	8.4861	7.8244	7.1628	6.7003	1.1217	1.3444	512.5	327	500	.7337	680
690	5.1103-4	2.5552-2	-1064.6	9.1641	8.5025	7.8408	7.1792	6.7167	1.1245	1.3433	516.1	330	507	.7334	690
700	5.0373-4	2.5187-2	-1053.3	9.1803	8.5187	7.8570	7.1954	6.7329	1.1273	1.3421	519.6	334	513	.7331	700
710	4.9664-4	2.4832-2	-1042.1	9.1963	8.5347	7.8730	7.2114	6.7489	1.1301	1.3410	523.1	337	520	.7328	710
720	4.8974-4	2.4487-2	-1030.7	9.2122	8.5505	7.8889	7.2272	6.7647	1.1329	1.3399	526.5	340	526	.7325	720
730	4.8303-4	2.4152-2	-1019.4	9.2278	8.5662	7.9045	7.2428	6.7804	1.1356	1.3387	529.9	344	533	.7322	730
740	4.7650-4	2.3825-2	-1008.0	9.2433	8.5816	7.9200	7.2583	6.7958	1.1384	1.3376	533.3	347	540	.7319	740
750	4.7015-4	2.3508-2	-996.6	9.2586	8.5969	7.9353	7.2736	6.8111	1.1412	1.3365	536.7	350	546	.7316	750
760	4.6396-4	2.3198-2	-985.2	9.2737	8.6121	7.9504	7.2887	6.8263	1.1439	1.3355	540.0	354	553	.7313	760
770	4.5794-4	2.2897-2	-973.7	9.2887	8.6270	7.9654	7.3037	6.8412	1.1467	1.3344	543.4	357	560	.7310	770
780	4.5207-4	2.2603-2	-962.3	9.3035	8.6418	7.9802	7.3185	6.8561	1.1494	1.3333	546.7	360	566	.7307	780
790	4.4635-4	2.2317-2	-950.8	9.3182	8.6565	7.9948	7.3332	6.8707	1.1522	1.3323	549.9	363	573	.7305	790
800	4.4077-4	2.2038-2	-939.2	9.3327	8.6710	8.0094	7.3477	6.8852	1.1549	1.3312	553.2	366	579	.7302	800
810	4.3533-4	2.1766-2	-927.7	9.3470	8.6854	8.0237	7.3621	6.8996	1.1576	1.3302	556.4	370	586	.7300	810
820	4.3002-4	2.1501-2	-916.1	9.3613	8.6996	8.0379	7.3763	6.9138	1.1603	1.3292	559.6	373	592	.7298	820
830	4.2484-4	2.1242-2	-904.5	9.3753	8.7137	8.0520	7.3904	6.9279	1.1629	1.3282	562.8	376	599	.7296	830
840	4.1978-4	2.0989-2	-892.8	9.3893	8.7276	8.0660	7.4043	6.9418	1.1656	1.3272	566.0	379	605	.7294	840
850	4.1484-4	2.0742-2	-881.1	9.4031	8.7414	8.0798	7.4181	6.9556	1.1682	1.3262	569.1	382	612	.7292	850
860	4.1002-4	2.0501-2	-869.5	9.4168	8.7551	8.0935	7.4318	6.9693	1.1708	1.3253	572.3	385	618	.7291	860
870	4.0530-4	2.0265-2	-857.7	9.4303	8.7687	8.1070	7.4453	6.9829	1.1734	1.3243	575.4	388	625	.7289	870
880	4.0070-4	2.0035-2	-846.0	9.4437	8.7821	8.1204	7.4588	6.9963	1.1760	1.3234	578.5	391	631	.7287	880
890	3.9619-4	1.9810-2	-834.2	9.4570	8.7954	8.1337	7.4721	7.0096	1.1785	1.3225	581.6	394	638	.7285	890
900	3.9179-4	1.9590-2	-822.4	9.4702	8.8086	8.1469	7.4853	7.0228	1.1810	1.3215	584.6	397	644	.7284	900
910	3.8749-4	1.9374-2	-810.6	9.4833	8.8216	8.1600	7.4983	7.0358	1.1835	1.3207	587.7	400	651	.7282	910
920	3.8328-4	1.9164-2	-798.7	9.4962	8.8346	8.1729	7.5113	7.0488	1.1860	1.3198	590.7	403	657	.7281	920
930	3.7915-4	1.8958-2	-786.9	9.5091	8.8474	8.1858	7.5241	7.0616	1.1884	1.3189	593.7	406	663	.7279	930
940	3.7512-4	1.8756-2	-775.0	9.5218	8.8601	8.1985	7.5368	7.0743	1.1908	1.3181	596.7	409	670	.7278	940
950	3.7117-4	1.8559-2	-763.1	9.5344	8.8728	8.2111	7.5494	7.0870	1.1932	1.3172	599.7	412	676	.7276	950
960	3.6731-4	1.8365-2	-751.1	9.5469	8.8853	8.2236	7.5619	7.0995	1.1955	1.3164	602.6	415	682	.7275	960
970	3.6352-4	1.8176-2	-739.1	9.5593	8.8977	8.2360	7.5743	7.1119	1.1978	1.3156	605.6	418	688	.7274	970
980	3.5981-4	1.7990-2	-727.2	9.5716	8.9100	8.2483	7.5866	7.1242	1.2001	1.3148	608.5	421	695	.7272	980
990	3.5618-4	1.7809-2	-715.1	9.5838	8.9222	8.2605	7.5988	7.1364	1.2023	1.3141	611.4	424	701	.7271	990

TABLE 8A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.033814; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 28.9344;
DRY AIR; GASEOUS COMPOSITION: CO2= .06778; H2O= .06747; N2= .75450; O2= .10120; AR= .00905

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
1000	3.5261-4	1.7631-2	-703.1	9.5959	8.9342	8.2726	7.6109	7.1485	1.2046	1.3133	614.3	427	707	.7270	1000
1050	3.3582-4	1.6791-2	-642.6	9.6549	8.9933	8.3316	7.6700	7.2075	1.2149	1.3098	628.6	441	737	.7266	1050
1100	3.2056-4	1.6028-2	-581.6	9.7117	9.0500	8.3884	7.7267	7.2642	1.2247	1.3066	642.6	455	767	.7263	1100
1150	3.0662-4	1.5331-2	-520.2	9.7663	9.1047	8.4430	7.7814	7.3189	1.2341	1.3035	656.3	468	796	.7261	1150
1200	2.9384-4	1.4692-2	-458.2	9.8190	9.1574	8.4957	7.8341	7.3716	1.2431	1.3007	669.7	482	825	.7259	1200
1250	2.8209-4	1.4105-2	-395.9	9.8700	9.2083	8.5466	7.8850	7.4225	1.2516	1.2980	682.8	495	853	.7258	1250
1300	2.7124-4	1.3562-2	-333.1	9.9192	9.2575	8.5959	7.9342	7.4718	1.2597	1.2955	695.7	508	881	.7257	1300
1350	2.6119-4	1.3060-2	-269.9	9.9669	9.3052	8.6436	7.9819	7.5194	1.2674	1.2932	708.3	521	909	.7255	1350
1400	2.5187-4	1.2593-2	-206.3	10.0131	9.3515	8.6898	8.0281	7.5657	1.2747	1.2910	720.7	533	937	.7254	1400
1450	2.4318-4	1.2159-2	-142.4	10.0580	9.3963	8.7347	8.0730	7.6105	1.2817	1.2890	732.9	545	964	.7252	1450
1500	2.3508-4	1.1754-2	-78.2	10.1015	9.4399	8.7782	8.1166	7.6541	1.2883	1.2871	744.8	558	991	.7250	1500
1550	2.2749-4	1.1375-2	-13.6	10.1439	9.4822	8.8206	8.1589	7.6964	1.2946	1.2853	756.6	570	1018	.7246	1550
1600	2.2038-4	1.1019-2	51.3	10.1851	9.5234	8.8618	8.2001	7.7376	1.3006	1.2836	768.2	582	1045	.7242	1600
1650	2.1371-4	1.0685-2	116.5	10.2252	9.5635	8.9019	8.2402	7.7777	1.3063	1.2820	779.6	593	1071	.7237	1650
1700	2.0742-4	1.0371-2	181.9	10.2643	9.6026	8.9410	8.2793	7.8168	1.3117	1.2805	790.9	605	1097	.7233	1700
1750	2.0149-4	1.0075-2	247.6	10.3024	9.6407	8.9791	8.3174	7.8549	1.3168	1.2791	802.0	617	1123	.7228	1750
1800	1.9590-4	9.7948-3	313.6	10.3395	9.6779	9.0162	8.3546	7.8921	1.3216	1.2778	813.0	628	1149	.7223	1800
1850	1.9060-4	9.5301-3	379.8	10.3758	9.7141	9.0525	8.3908	7.9284	1.3262	1.2766	823.8	639	1174	.7218	1850
1900	1.8559-4	9.2793-3	446.2	10.4112	9.7496	9.0879	8.4263	7.9638	1.3305	1.2755	834.5	650	1200	.7214	1900
1950	1.8083-4	9.0414-3	512.8	10.4458	9.7842	9.1225	8.4609	7.9984	1.3347	1.2744	845.0	661	1225	.7209	1950
2000	1.7631-4	8.8153-3	579.7	10.4797	9.8180	9.1564	8.4947	8.0322	1.3386	1.2734	855.5	672	1249	.7204	2000
2050	1.7201-4	8.6003-3	646.7	10.5128	9.8511	9.1895	8.5278	8.0653	1.3423	1.2724	865.8	683	1273	.7201	2050
2100	1.6791-4	8.3956-3	713.9	10.5452	9.8835	9.2219	8.5602	8.0977	1.3458	1.2715	875.9	694	1297	.7198	2100
2150	1.6401-4	8.2003-3	781.3	10.5769	9.9152	9.2536	8.5919	8.1294	1.3491	1.2706	886.0	705	1321	.7195	2150
2200	1.6028-4	8.0139-3	848.8	10.6079	9.9463	9.2846	8.6230	8.1605	1.3523	1.2698	896.0	715	1345	.7192	2200
2250	1.5672-4	7.8359-3	916.5	10.6383	9.9767	9.3150	8.6534	8.1909	1.3553	1.2691	905.8	726	1368	.7189	2250
2300	1.5331-4	7.6655-3	984.3	10.6682	10.0065	9.3449	8.6832	8.2207	1.3581	1.2684	915.6	736	1391	.7187	2300
2350	1.5005-4	7.5024-3	1052.3	10.6974	10.0357	9.3741	8.7124	8.2500	1.3608	1.2677	925.2	746	1414	.7184	2350
2400	1.4692-4	7.3461-3	1120.4	10.7261	10.0644	9.4028	8.7411	8.2786	1.3634	1.2670	934.8	756	1436	.7181	2400
2450	1.4392-4	7.1962-3	1188.6	10.7542	10.0926	9.4309	8.7692	8.3068	1.3659	1.2664	944.2	767	1459	.7178	2450
2500	1.4105-4	7.0523-3	1257.0	10.7818	10.1202	9.4585	8.7969	8.3344	1.3682	1.2659	953.6	777	1481	.7175	2500
2550	1.3828-4	6.9140-3	1325.4	10.8090	10.1473	9.4856	8.8240	8.3615	1.3704	1.2653	962.9	787	1503	.7170	2550
2600	1.3562-4	6.7810-3	1394.0	10.8356	10.1739	9.5123	8.8506	8.3881	1.3726	1.2648	972.1	796	1526	.7165	2600
2650	1.3306-4	6.6531-3	1462.7	10.8617	10.2001	9.5384	8.8768	8.4143	1.3746	1.2643	981.2	806	1548	.7160	2650
2700	1.3060-4	6.5299-3	1531.5	10.8875	10.2258	9.5641	8.9025	8.4400	1.3766	1.2638	990.2	816	1570	.7156	2700
2750	1.2822-4	6.4112-3	1600.4	10.9127	10.2511	9.5894	8.9278	8.4653	1.3785	1.2634	999.2	826	1592	.7151	2750
2800	1.2593-4	6.2967-3	1669.3	10.9376	10.2759	9.6143	8.9526	8.4901	1.3803	1.2629	1008.0	835	1613	.7146	2800
2850	1.2372-4	6.1862-3	1738.4	10.9620	10.3004	9.6387	8.9771	8.5146	1.3820	1.2625	1016.8	845	1635	.7142	2850
2900	1.2159-4	6.0795-3	1807.5	10.9861	10.3244	9.6628	9.0011	8.5386	1.3837	1.2621	1025.5	854	1656	.7137	2900
2950	1.1953-4	5.9765-3	1876.8	11.0098	10.3481	9.6864	9.0248	8.5623	1.3854	1.2617	1034.2	864	1678	.7132	2950
3000	1.1754-4	5.8769-3	1946.1	11.0331	10.3714	9.7097	9.0481	8.5856	1.3869	1.2613	1042.8	873	1699	.7128	3000

TABLE 8.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.033814; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9179-6	-822.4	9.4703	28.934	397	1.0000	-1.0000	1.1813	1.3214	584.6	644	.728	1.1810	1.3215	584.6	644	.728
950	3.7117-6	-763.0	9.5345	28.934	412	1.0000	-1.0000	1.1937	1.3171	599.6	676	.728	1.1932	1.3172	599.7	676	.728
1000	3.5261-6	-703.0	9.5960	28.934	427	1.0000	-1.0000	1.2054	1.3130	614.2	707	.727	1.2046	1.3133	614.3	707	.727
1050	3.3582-6	-642.5	9.6551	28.934	441	1.0000	-1.0000	1.2162	1.3094	628.5	738	.727	1.2149	1.3098	628.6	737	.727
1100	3.2056-6	-581.4	9.7119	28.934	455	1.0000	-1.0000	1.2267	1.3059	642.5	768	.726	1.2247	1.3066	642.6	767	.726
1150	3.0662-6	-519.8	9.7666	28.934	468	1.0000	-1.0000	1.2369	1.3026	656.1	798	.726	1.2341	1.3035	656.3	796	.726
1200	2.9384-6	-457.7	9.8195	28.934	482	1.0000	-1.0000	1.2471	1.2994	669.4	828	.726	1.2431	1.3007	669.7	825	.726
1250	2.8209-6	-395.1	9.8706	28.934	495	1.0001	-1.0000	1.2571	1.2963	682.4	857	.726	1.2516	1.2980	682.8	853	.726
1300	2.7124-6	-332.0	9.9201	28.934	508	1.0001	-1.0000	1.2673	1.2933	695.1	887	.725	1.2597	1.2955	695.7	881	.726
1350	2.6119-6	-268.4	9.9681	28.934	521	1.0002	-1.0000	1.2778	1.2903	707.5	917	.725	1.2674	1.2932	708.3	909	.726
1400	2.5186-6	-204.2	10.0148	28.934	533	1.0003	-1.0000	1.2887	1.2872	719.6	948	.725	1.2747	1.2910	720.7	937	.725
1450	2.4317-6	-139.5	10.0602	28.933	545	1.0005	-1.0000	1.3006	1.2840	731.4	980	.724	1.2817	1.2890	732.9	964	.725
1500	2.3506-6	-74.1	10.1045	28.933	558	1.0009	-1.0000	1.3139	1.2805	743.0	1013	.723	1.2883	1.2871	744.9	991	.725
1550	2.2747-6	-8.1	10.1479	28.932	570	1.0014	-1.0000	1.3293	1.2767	754.1	1050	.721	1.2946	1.2853	756.7	1018	.725
1600	2.2035-6	58.8	10.1904	28.930	582	1.0022	-1.0001	1.3480	1.2724	764.9	1091	.719	1.3006	1.2836	768.3	1045	.724
1650	2.1365-6	126.8	10.2322	28.927	593	1.0035	-1.0001	1.3713	1.2674	775.3	1138	.715	1.3063	1.2821	779.8	1071	.724
1700	2.0734-6	196.1	10.2735	28.924	605	1.0055	-1.0001	1.4013	1.2615	785.1	1194	.710	1.3116	1.2807	791.1	1097	.723
1750	2.0138-6	267.1	10.3147	28.918	617	1.0085	-1.0002	1.4408	1.2543	794.4	1265	.702	1.3167	1.2794	802.3	1123	.723
1800	1.9573-6	340.4	10.3560	28.909	628	1.0129	-1.0003	1.4932	1.2457	803.1	1355	.692	1.3215	1.2782	813.4	1149	.722
1850	1.9035-6	416.7	10.3978	28.897	639	1.0193	-1.0005	1.5633	1.2356	811.0	1475	.677	1.3261	1.2771	824.5	1175	.721
1900	1.8523-6	497.1	10.4407	28.878	650	1.0284	-1.0008	1.6566	1.2240	818.3	1635	.659	1.3304	1.2762	835.5	1200	.721
1950	1.8032-6	582.9	10.4852	28.853	661	1.0412	-1.0012	1.7799	1.2111	824.9	1851	.636	1.3344	1.2754	846.6	1225	.720
2000	1.7559-6	675.7	10.5322	28.817	672	1.0586	-1.0018	1.9404	1.1974	831.2	2141	.609	1.3382	1.2749	857.7	1250	.719
2050	1.7101-6	777.7	10.5826	28.767	682	1.0819	-1.0026	2.1457	1.1835	837.4	2526	.580	1.3417	1.2746	869.0	1275	.718
2100	1.6655-6	891.1	10.6373	28.700	693	1.1121	-1.0037	2.4025	1.1702	843.8	3030	.549	1.3450	1.2745	880.5	1300	.717
2150	1.6218-6	1018.8	10.6973	28.612	703	1.1503	-1.0051	2.7154	1.1581	850.6	3674	.519	1.3481	1.2748	892.4	1325	.715
2200	1.5787-6	1163.7	10.7639	28.499	713	1.1970	-1.0068	3.0864	1.1476	858.2	4477	.491	1.3509	1.2754	904.8	1350	.713
2250	1.5358-6	1328.4	10.8379	28.356	722	1.2527	-1.0090	3.5140	1.1389	866.8	5446	.466	1.3536	1.2765	917.7	1376	.710
2300	1.4931-6	1515.9	10.9203	28.179	732	1.3169	-1.0116	3.9933	1.1319	876.4	6578	.444	1.3561	1.2781	931.3	1404	.707
2350	1.4503-6	1728.5	11.0118	27.967	741	1.3891	-1.0147	4.5171	1.1265	887.2	7849	.426	1.3585	1.2802	945.7	1433	.702
2400	1.4073-6	1968.2	11.1127	27.716	750	1.4681	-1.0182	5.0753	1.1226	899.0	9213	.413	1.3609	1.2828	961.0	1465	.697
2450	1.3642-6	2236.4	11.2232	27.426	758	1.5518	-1.0221	5.6544	1.1199	912.0	10601	.405	1.3632	1.2860	977.3	1499	.690
2500	1.3210-6	2533.7	11.3433	27.099	767	1.6374	-1.0262	6.2348	1.1182	926.1	11918	.401	1.3657	1.2898	994.6	1536	.682
2550	1.2778-6	2859.4	11.4723	26.737	776	1.7205	-1.0304	6.7884	1.1175	941.4	13053	.403	1.3683	1.2941	1013.0	1577	.673
2600	1.2349-6	3211.4	11.6090	26.346	784	1.7953	-1.0345	7.2770	1.1177	957.6	13898	.411	1.3711	1.2990	1032.4	1621	.663
2650	1.1926-6	3585.3	11.7514	25.934	793	1.8549	-1.0380	7.6555	1.1186	974.9	14362	.423	1.3740	1.3043	1052.7	1668	.653
2700	1.1516-6	3974.4	11.8969	25.513	802	1.8926	-1.0407	7.8797	1.1204	992.9	14400	.439	1.3770	1.3100	1073.6	1716	.643
2750	1.1121-6	4370.1	12.0421	25.095	811	1.9037	-1.0421	7.9177	1.1230	1011.5	14021	.458	1.3801	1.3159	1095.0	1765	.634
2800	1.0747-6	4762.9	12.1837	24.692	820	1.8870	-1.0423	7.7602	1.1264	1030.5	13287	.479	1.3831	1.3218	1116.3	1813	.625
2850	1.0398-6	5143.2	12.3183	24.316	829	1.8446	-1.0411	7.4226	1.1308	1049.7	12296	.500	1.3860	1.3275	1137.4	1860	.618
2900	1.0075-6	5502.7	12.4434	23.974	838	1.7816	-1.0388	6.9403	1.1361	1068.9	11155	.522	1.3888	1.3328	1157.8	1904	.612
2950	9.7786-7	5835.5	12.5572	23.671	848	1.7045	-1.0357	6.3593	1.1426	1088.1	9961	.541	1.3914	1.3377	1177.3	1945	.607
3000	9.5091-7	6137.8	12.6588	23.409	858	1.6198	-1.0321	5.7284	1.1503	1107.1	8790	.559	1.3937	1.3420	1195.8	1984	.602

TABLE 8.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.033814; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.9179-5	-822.4	8.8086	28.934	397	1.0000	-1.0000	1.1813	1.3214	584.6	644 .728	1.1810	1.3215	584.6	644 .728
950	3.7117-5	-763.0	8.8728	28.934	412	1.0000	-1.0000	1.1937	1.3171	599.6	676 .728	1.1932	1.3172	599.7	676 .728
1000	3.5261-5	-703.0	8.9343	28.934	427	1.0000	-1.0000	1.2054	1.3130	614.2	707 .727	1.2046	1.3133	614.3	707 .727
1050	3.3582-5	-642.5	8.9934	28.934	441	1.0000	-1.0000	1.2162	1.3094	628.5	738 .727	1.2149	1.3098	628.6	737 .727
1100	3.2056-5	-581.4	9.0502	28.934	455	1.0000	-1.0000	1.2266	1.3059	642.5	768 .726	1.2247	1.3066	642.6	767 .726
1150	3.0662-5	-519.8	9.1050	28.934	468	1.0000	-1.0000	1.2368	1.3027	656.1	798 .726	1.2341	1.3035	656.3	796 .726
1200	2.9384-5	-457.7	9.1578	28.934	482	1.0000	-1.0000	1.2468	1.2995	669.4	827 .726	1.2431	1.3007	669.7	825 .726
1250	2.8209-5	-395.2	9.2089	28.934	495	1.0000	-1.0000	1.2567	1.2965	682.4	857 .726	1.2516	1.2980	682.8	853 .726
1300	2.7124-5	-332.1	9.2584	28.934	508	1.0001	-1.0000	1.2665	1.2935	695.1	886 .726	1.2597	1.2955	695.7	881 .726
1350	2.6119-5	-268.5	9.3064	28.934	521	1.0001	-1.0000	1.2764	1.2906	707.6	916 .725	1.2674	1.2932	708.3	909 .726
1400	2.5186-5	-204.4	9.3530	28.934	533	1.0002	-1.0000	1.2865	1.2877	719.8	946 .725	1.2747	1.2910	720.7	937 .725
1450	2.4318-5	-139.8	9.3983	28.934	545	1.0003	-1.0000	1.2968	1.2848	731.7	976 .725	1.2817	1.2890	732.9	964 .725
1500	2.3507-5	-74.7	9.4425	28.934	558	1.0004	-1.0000	1.3078	1.2819	743.3	1007 .724	1.2883	1.2871	744.8	991 .725
1550	2.2748-5	-9.1	9.4855	28.933	570	1.0006	-1.0000	1.3195	1.2789	754.7	1039 .723	1.2946	1.2853	756.6	1018 .725
1600	2.2037-5	57.2	9.5276	28.932	582	1.0010	-1.0000	1.3324	1.2756	765.9	1073 .722	1.3006	1.2836	768.2	1045 .724
1650	2.1368-5	124.2	9.5688	28.931	593	1.0015	-1.0000	1.3471	1.2722	776.7	1109 .721	1.3063	1.2821	779.7	1071 .724
1700	2.0739-5	192.0	9.6093	28.930	605	1.0023	-1.0001	1.3641	1.2684	787.2	1149 .718	1.3116	1.2806	791.0	1097 .723
1750	2.0144-5	260.7	9.6491	28.927	617	1.0034	-1.0001	1.3844	1.2641	797.4	1193 .716	1.3167	1.2792	802.2	1123 .723
1800	1.9583-5	330.5	9.6885	28.924	628	1.0050	-1.0001	1.4091	1.2593	807.2	1243 .712	1.3216	1.2780	813.2	1149 .722
1850	1.9050-5	401.7	9.7275	28.919	639	1.0073	-1.0002	1.4397	1.2538	816.6	1302 .707	1.3261	1.2768	824.1	1174 .722
1900	1.8544-5	474.6	9.7664	28.912	650	1.0105	-1.0003	1.4781	1.2475	825.6	1373 .700	1.3305	1.2757	834.9	1200 .721
1950	1.8063-5	549.7	9.8053	28.903	661	1.0149	-1.0004	1.5264	1.2402	834.1	1461 .691	1.3345	1.2748	845.6	1225 .721
2000	1.7604-5	627.4	9.8447	28.890	672	1.0209	-1.0006	1.5874	1.2320	842.1	1570 .680	1.3384	1.2739	856.3	1250 .720
2050	1.7164-5	708.7	9.8848	28.872	683	1.0289	-1.0009	1.6641	1.2229	849.7	1707 .666	1.3420	1.2732	867.0	1274 .720
2100	1.6741-5	794.2	9.9260	28.849	694	1.0394	-1.0013	1.7598	1.2131	856.9	1880 .649	1.3454	1.2726	877.6	1298 .719
2150	1.6334-5	885.0	9.9688	28.817	704	1.0531	-1.0017	1.8780	1.2028	863.8	2099 .630	1.3486	1.2722	888.3	1322 .718
2200	1.5941-5	982.4	10.0136	28.777	714	1.0704	-1.0024	2.0219	1.1924	870.6	2374 .608	1.3516	1.2719	899.1	1346 .718
2250	1.5558-5	1087.7	10.0609	28.725	725	1.0919	-1.0032	2.1939	1.1822	877.5	2715 .586	1.3544	1.2718	910.1	1369 .717
2300	1.5185-5	1202.3	10.1112	28.659	735	1.1180	-1.0042	2.3958	1.1726	884.5	3132 .562	1.3569	1.2719	921.3	1393 .715
2350	1.4819-5	1327.8	10.1652	28.577	744	1.1490	-1.0054	2.6275	1.1638	892.0	3633 .538	1.3593	1.2723	932.7	1417 .714
2400	1.4460-5	1465.5	10.2232	28.477	754	1.1850	-1.0069	2.8878	1.1561	900.1	4223 .516	1.3615	1.2730	944.5	1442 .712
2450	1.4105-5	1617.0	10.2856	28.357	763	1.2258	-1.0087	3.1739	1.1496	908.7	4905 .494	1.3636	1.2739	956.6	1466 .710
2500	1.3754-5	1783.3	10.3528	28.215	773	1.2710	-1.0107	3.4820	1.1441	918.1	5674 .474	1.3655	1.2752	969.2	1492 .707
2550	1.3406-5	1965.5	10.4250	28.051	782	1.3202	-1.0130	3.8076	1.1398	928.2	6522 .456	1.3673	1.2768	982.4	1519 .704
2600	1.3060-5	2164.3	10.5022	27.863	791	1.3728	-1.0155	4.1462	1.1365	939.0	7431 .441	1.3690	1.2787	996.0	1547 .700
2650	1.2716-5	2380.2	10.5844	27.651	800	1.4282	-1.0183	4.4930	1.1340	950.6	8378 .429	1.3707	1.2810	1010.3	1577 .695
2700	1.2374-5	2613.6	10.6717	27.416	809	1.4854	-1.0213	4.8423	1.1323	962.9	9327 .420	1.3725	1.2836	1025.2	1609 .690
2750	1.2035-5	2864.4	10.7637	27.159	817	1.5431	-1.0245	5.1871	1.1313	975.9	10241 .414	1.3743	1.2866	1040.8	1643 .684
2800	1.1699-5	3132.1	10.8601	26.880	826	1.5999	-1.0277	5.5178	1.1309	989.7	11071 .412	1.3761	1.2899	1057.0	1679 .677
2850	1.1367-5	3415.7	10.9605	26.584	835	1.6534	-1.0309	5.8221	1.1311	1004.1	11772 .413	1.3780	1.2936	1073.8	1718 .670
2900	1.1040-5	3713.6	11.0642	26.272	844	1.7010	-1.0340	6.0852	1.1319	1019.2	12299 .417	1.3801	1.2975	1091.3	1758 .662
2950	1.0720-5	4023.3	11.1700	25.950	853	1.7401	-1.0367	6.2907	1.1332	1034.9	12621 .425	1.3822	1.3018	1109.2	1801 .654
3000	1.0409-5	4341.4	11.2770	25.623	862	1.7678	-1.0389	6.4233	1.1350	1051.2	12717 .435	1.3844	1.3062	1127.6	1845 .647

TABLE 8.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.033814; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9179-4	-822.4	8.1470	28.934	397	1.0000	-1.0000	1.1813	1.3214	584.6	644	.728	1.1810	1.3215	584.6	644	.728
950	3.7117-4	-763.0	8.2111	28.934	412	1.0000	-1.0000	1.1937	1.3171	599.6	676	.728	1.1932	1.3172	599.7	676	.728
1000	3.5261-4	-703.0	8.2727	28.934	427	1.0000	-1.0000	1.2054	1.3130	614.2	707	.727	1.2046	1.3133	614.3	707	.727
1050	3.3582-4	-642.5	8.3317	28.934	441	1.0000	-1.0000	1.2161	1.3094	628.5	738	.727	1.2149	1.3098	628.6	737	.727
1100	3.2056-4	-581.4	8.3886	28.934	455	1.0000	-1.0000	1.2266	1.3059	642.5	768	.726	1.2247	1.3065	642.6	767	.726
1150	3.0662-4	-519.8	8.4433	28.934	468	1.0000	-1.0000	1.2368	1.3027	656.1	798	.726	1.2341	1.3035	656.3	796	.726
1200	2.9384-4	-457.8	8.4962	28.934	482	1.0000	-1.0000	1.2467	1.2995	669.4	827	.726	1.2431	1.3007	669.7	825	.726
1250	2.8209-4	-395.2	8.5472	28.934	495	1.0000	-1.0000	1.2565	1.2965	682.4	857	.726	1.2516	1.2980	682.8	853	.726
1300	2.7124-4	-332.1	8.5967	28.934	508	1.0000	-1.0000	1.2661	1.2936	695.2	886	.726	1.2597	1.2955	695.7	881	.726
1350	2.6119-4	-268.6	8.6447	28.934	521	1.0000	-1.0000	1.2757	1.2908	707.6	915	.726	1.2674	1.2932	708.3	909	.726
1400	2.5187-4	-204.5	8.6912	28.934	533	1.0001	-1.0000	1.2853	1.2880	719.8	945	.725	1.2747	1.2910	720.7	937	.725
1450	2.4318-4	-140.0	8.7365	28.934	545	1.0001	-1.0000	1.2950	1.2853	731.8	974	.725	1.2817	1.2890	732.9	964	.725
1500	2.3507-4	-75.0	8.7806	28.934	558	1.0002	-1.0000	1.3049	1.2825	743.5	1004	.725	1.2883	1.2871	744.8	991	.725
1550	2.2749-4	-9.5	8.8235	28.934	570	1.0003	-1.0000	1.3151	1.2798	755.0	1035	.724	1.2946	1.2853	756.6	1018	.725
1600	2.2038-4	56.5	8.8655	28.933	582	1.0005	-1.0000	1.3258	1.2770	766.3	1066	.723	1.3006	1.2836	768.2	1045	.724
1650	2.1369-4	123.1	8.9064	28.933	593	1.0007	-1.0000	1.3371	1.2742	777.3	1098	.722	1.3063	1.2820	779.7	1071	.724
1700	2.0740-4	190.2	8.9465	28.932	605	1.0010	-1.0000	1.3493	1.2713	788.1	1132	.721	1.3117	1.2806	791.0	1097	.723
1750	2.0147-4	258.0	8.9858	28.931	617	1.0015	-1.0000	1.3626	1.2682	798.6	1167	.720	1.3167	1.2792	802.1	1123	.723
1800	1.9586-4	326.5	9.0244	28.930	628	1.0021	-1.0001	1.3775	1.2650	808.9	1204	.718	1.3216	1.2779	813.1	1149	.722
1850	1.9056-4	395.8	9.0624	28.928	639	1.0030	-1.0001	1.3945	1.2615	819.0	1245	.716	1.3262	1.2767	823.9	1174	.722
1900	1.8552-4	466.0	9.0998	28.925	650	1.0042	-1.0001	1.4142	1.2577	828.8	1289	.714	1.3305	1.2756	834.7	1200	.721
1950	1.8074-4	537.3	9.1369	28.921	661	1.0058	-1.0002	1.4372	1.2535	838.3	1338	.710	1.3346	1.2746	845.3	1225	.721
2000	1.7620-4	609.8	9.1736	28.916	672	1.0080	-1.0002	1.4644	1.2489	847.5	1394	.706	1.3385	1.2736	855.8	1249	.720
2050	1.7186-4	683.8	9.2101	28.909	683	1.0108	-1.0003	1.4970	1.2438	856.3	1459	.701	1.3421	1.2727	866.2	1274	.720
2100	1.6772-4	759.6	9.2467	28.901	694	1.0146	-1.0005	1.5360	1.2382	864.9	1534	.695	1.3456	1.2719	876.6	1298	.720
2150	1.6375-4	837.5	9.2833	28.889	705	1.0194	-1.0006	1.5828	1.2320	873.1	1623	.687	1.3489	1.2712	886.9	1321	.719
2200	1.5995-4	918.0	9.3203	28.874	715	1.0255	-1.0008	1.6388	1.2254	881.1	1729	.678	1.3519	1.2706	897.2	1345	.719
2250	1.5629-4	1001.6	9.3579	28.855	725	1.0332	-1.0011	1.7056	1.2183	888.8	1856	.667	1.3548	1.2701	907.4	1368	.718
2300	1.5276-4	1088.8	9.3962	28.831	736	1.0428	-1.0015	1.7846	1.2110	896.2	2008	.654	1.3575	1.2697	917.7	1391	.718
2350	1.4936-4	1180.3	9.4356	28.801	746	1.0544	-1.0019	1.8772	1.2034	903.6	2190	.639	1.3601	1.2694	928.0	1415	.717
2400	1.4606-4	1276.8	9.4762	28.764	756	1.0685	-1.0025	1.9843	1.1959	910.8	2405	.624	1.3624	1.2693	938.4	1437	.716
2450	1.4285-4	1379.0	9.5183	28.719	766	1.0851	-1.0032	2.1065	1.1885	918.2	2658	.607	1.3646	1.2693	948.8	1460	.716
2500	1.3973-4	1487.7	9.5622	28.664	775	1.1044	-1.0040	2.2439	1.1816	925.6	2953	.589	1.3667	1.2694	959.4	1483	.715
2550	1.3668-4	1603.6	9.6082	28.599	785	1.1264	-1.0050	2.3959	1.1751	933.4	3293	.571	1.3686	1.2697	970.2	1506	.713
2600	1.3369-4	1727.5	9.6563	28.522	795	1.1512	-1.0061	2.5610	1.1692	941.4	3680	.553	1.3703	1.2702	981.2	1530	.712
2650	1.3076-4	1859.9	9.7067	28.433	804	1.1784	-1.0074	2.7376	1.1641	949.8	4113	.535	1.3720	1.2709	992.4	1553	.710
2700	1.2787-4	2001.4	9.7596	28.330	813	1.2079	-1.0088	2.9232	1.1597	958.6	4592	.518	1.3735	1.2717	1003.9	1577	.708
2750	1.2503-4	2152.3	9.8150	28.214	822	1.2395	-1.0104	3.1156	1.1560	967.9	5113	.501	1.3749	1.2728	1015.6	1602	.706
2800	1.2224-4	2313.0	9.8729	28.085	831	1.2727	-1.0121	3.3124	1.1530	977.6	5672	.486	1.3762	1.2741	1027.7	1627	.703
2850	1.1948-4	2483.6	9.9333	27.941	840	1.3073	-1.0139	3.5115	1.1506	987.8	6263	.471	1.3775	1.2755	1040.1	1653	.700
2900	1.1675-4	2664.2	9.9961	27.783	849	1.3431	-1.0159	3.7112	1.1488	998.5	6877	.458	1.3788	1.2772	1052.8	1680	.697
2950	1.1407-4	2854.7	10.0612	27.612	858	1.3797	-1.0180	3.9095	1.1475	1009.6	7502	.447	1.3800	1.2791	1065.9	1708	.694
3000	1.1142-4	3055.1	10.1285	27.428	867	1.4167	-1.0203	4.1049	1.1467	1021.2	8125	.438	1.3813	1.2812	1079.4	1737	.689

TABLE 8.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.033814; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 1013.25 KPA (10.00 ATM)
DRY AIR

T	DENSITY	H	ENTROPY	MW	VIS	REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
					MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.9179-3	-822.4	7.4853	28.934	397	1.0000	-1.0000	1.1813	1.3214	584.6	644 .728	1.1810	1.3215	584.6	644 .728
950	3.7117-3	-763.0	7.5495	28.934	412	1.0000	-1.0000	1.1937	1.3170	599.6	676 .728	1.1932	1.3172	599.7	676 .728
1000	3.5261-3	-703.0	7.6110	28.934	427	1.0000	-1.0000	1.2054	1.3130	614.2	707 .727	1.2046	1.3133	614.3	707 .727
1050	3.3582-3	-642.5	7.6701	28.934	441	1.0000	-1.0000	1.2161	1.3094	628.5	738 .727	1.2149	1.3098	628.6	737 .727
1100	3.2056-3	-581.4	7.7269	28.934	455	1.0000	-1.0000	1.2266	1.3059	642.5	768 .726	1.2247	1.3066	642.6	767 .726
1150	3.0662-3	-519.8	7.7817	28.934	468	1.0000	-1.0000	1.2367	1.3027	656.1	798 .726	1.2341	1.3035	656.3	796 .726
1200	2.9385-3	-457.8	7.8345	28.934	482	1.0000	-1.0000	1.2466	1.2995	669.4	827 .726	1.2431	1.3007	669.7	825 .726
1250	2.8209-3	-395.2	7.8856	28.934	495	1.0000	-1.0000	1.2564	1.2965	682.4	857 .726	1.2516	1.2980	682.8	853 .726
1300	2.7124-3	-332.1	7.9350	28.934	508	1.0000	-1.0000	1.2659	1.2936	695.2	886 .726	1.2597	1.2955	695.7	881 .726
1350	2.6120-3	-268.6	7.9830	28.934	521	1.0000	-1.0000	1.2754	1.2908	707.6	915 .726	1.2674	1.2932	708.3	909 .726
1400	2.5187-3	-204.6	8.0296	28.934	533	1.0000	-1.0000	1.2848	1.2881	719.9	944 .725	1.2747	1.2910	720.7	937 .725
1450	2.4318-3	-140.1	8.0748	28.934	545	1.0001	-1.0000	1.2941	1.2855	731.8	973 .725	1.2817	1.2890	732.9	964 .725
1500	2.3507-3	-75.2	8.1188	28.934	558	1.0001	-1.0000	1.3035	1.2828	743.6	1003 .725	1.2883	1.2871	744.8	991 .725
1550	2.2749-3	-9.8	8.1617	28.934	570	1.0001	-1.0000	1.3130	1.2803	755.1	1033 .724	1.2946	1.2853	756.6	1018 .725
1600	2.2038-3	56.1	8.2036	28.934	582	1.0002	-1.0000	1.3227	1.2777	766.5	1063 .724	1.3006	1.2836	768.2	1045 .724
1650	2.1370-3	122.5	8.2444	28.934	593	1.0003	-1.0000	1.3326	1.2752	777.6	1093 .723	1.3063	1.2820	779.7	1071 .724
1700	2.0741-3	189.4	8.2844	28.933	605	1.0005	-1.0000	1.3428	1.2726	788.5	1124 .723	1.3117	1.2805	790.9	1097 .723
1750	2.0148-3	256.8	8.3234	28.933	617	1.0007	-1.0000	1.3534	1.2700	799.2	1156 .722	1.3167	1.2792	802.1	1123 .723
1800	1.9588-3	324.7	8.3617	28.932	628	1.0010	-1.0000	1.3646	1.2674	809.7	1189 .721	1.3216	1.2779	813.0	1149 .722
1850	1.9058-3	393.3	8.3993	28.931	639	1.0013	-1.0000	1.3765	1.2647	820.0	1223 .720	1.3262	1.2767	823.9	1174 .722
1900	1.8556-3	462.4	8.4361	28.930	650	1.0018	-1.0001	1.3894	1.2619	830.1	1258 .718	1.3305	1.2755	834.6	1200 .721
1950	1.8079-3	532.2	8.4724	28.928	661	1.0025	-1.0001	1.4034	1.2590	840.0	1295 .717	1.3346	1.2745	845.1	1225 .721
2000	1.7626-3	602.8	8.5081	28.926	672	1.0033	-1.0001	1.4188	1.2560	849.7	1334 .715	1.3385	1.2735	855.6	1249 .720
2050	1.7194-3	674.1	8.5434	28.924	683	1.0044	-1.0001	1.4361	1.2528	859.2	1376 .713	1.3422	1.2725	866.0	1274 .720
2100	1.6783-3	746.4	8.5782	28.920	694	1.0058	-1.0002	1.4555	1.2495	868.5	1421 .711	1.3457	1.2717	876.2	1297 .720
2150	1.6390-3	819.7	8.6127	28.916	705	1.0076	-1.0002	1.4774	1.2459	877.6	1471 .708	1.3490	1.2709	886.4	1321 .719
2200	1.6014-3	894.2	8.6470	28.910	715	1.0098	-1.0003	1.5025	1.2420	886.5	1526 .704	1.3521	1.2702	896.5	1345 .719
2250	1.5654-3	970.0	8.6810	28.903	726	1.0126	-1.0004	1.5312	1.2379	895.1	1587 .700	1.3550	1.2695	906.5	1368 .719
2300	1.5309-3	1047.4	8.7150	28.893	736	1.0160	-1.0005	1.5642	1.2336	903.6	1656 .695	1.3578	1.2689	916.4	1391 .718
2350	1.4978-3	1126.6	8.7491	28.882	746	1.0203	-1.0007	1.6020	1.2290	911.8	1734 .689	1.3604	1.2684	926.3	1414 .718
2400	1.4659-3	1207.7	8.7832	28.868	756	1.0254	-1.0009	1.6453	1.2242	919.9	1823 .683	1.3629	1.2680	936.2	1437 .718
2450	1.4351-3	1291.2	8.8177	28.852	767	1.0315	-1.0012	1.6948	1.2192	927.8	1925 .675	1.3652	1.2676	946.0	1459 .717
2500	1.4054-3	1377.3	8.8525	28.831	777	1.0388	-1.0015	1.7508	1.2140	935.5	2041 .666	1.3674	1.2673	955.8	1482 .717
2550	1.3767-3	1466.4	8.8877	28.807	786	1.0474	-1.0018	1.8140	1.2088	943.2	2174 .656	1.3694	1.2670	965.7	1504 .716
2600	1.3488-3	1558.8	8.9236	28.777	796	1.0573	-1.0023	1.8846	1.2036	950.8	2324 .646	1.3714	1.2669	975.6	1527 .715
2650	1.3218-3	1655.0	8.9603	28.743	806	1.0687	-1.0028	1.9626	1.1984	958.5	2494 .634	1.3732	1.2669	985.5	1549 .714
2700	1.2955-3	1755.2	8.9977	28.703	815	1.0815	-1.0034	2.0480	1.1934	966.1	2685 .622	1.3749	1.2669	995.4	1572 .713
2750	1.2699-3	1859.9	9.0361	28.656	825	1.0959	-1.0040	2.1403	1.1887	973.9	2898 .609	1.3764	1.2671	1005.5	1594 .712
2800	1.2449-3	1969.3	9.0756	28.603	834	1.1117	-1.0048	2.2388	1.1844	981.8	3134 .596	1.3779	1.2674	1015.6	1616 .711
2850	1.2205-3	2083.8	9.1161	28.542	844	1.1288	-1.0057	2.3425	1.1804	989.9	3392 .583	1.3793	1.2678	1025.9	1639 .710
2900	1.1965-3	2203.7	9.1578	28.474	853	1.1471	-1.0066	2.4504	1.1768	998.3	3672 .569	1.3805	1.2683	1036.3	1661 .709
2950	1.1731-3	2328.9	9.2006	28.397	862	1.1666	-1.0076	2.5613	1.1736	1006.8	3973 .556	1.3817	1.2689	1046.9	1684 .707
3000	1.1501-3	2459.8	9.2446	28.313	871	1.1869	-1.0087	2.6738	1.1709	1015.7	4295 .542	1.3829	1.2696	1057.6	1707 .706

TABLE 8.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.033814; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9590-2	-822.4	7.0228	28.934	397	1.0000	-1.0000	1.1813	1.3214	584.6	644	.728	1.1810	1.3215	584.6	644	.728
950	1.8559-2	-763.0	7.0870	28.934	412	1.0000	-1.0000	1.1937	1.3170	599.6	676	.728	1.1932	1.3172	599.7	676	.728
1000	1.7631-2	-703.0	7.1485	28.934	427	1.0000	-1.0000	1.2054	1.3130	614.2	707	.727	1.2046	1.3133	614.3	707	.727
1050	1.6791-2	-642.5	7.2076	28.934	441	1.0000	-1.0000	1.2162	1.3094	628.5	738	.727	1.2149	1.3098	628.6	737	.727
1100	1.6028-2	-581.4	7.2644	28.934	455	1.0000	-1.0000	1.2266	1.3059	642.5	768	.726	1.2247	1.3065	642.6	767	.726
1150	1.5331-2	-519.8	7.3192	28.934	468	1.0000	-1.0000	1.2367	1.3027	656.1	798	.726	1.2341	1.3035	656.3	796	.726
1200	1.4692-2	-457.7	7.3720	28.935	482	1.0000	-1.0000	1.2466	1.2995	669.4	827	.726	1.2431	1.3007	669.7	825	.726
1250	1.4105-2	-395.2	7.4231	28.935	495	1.0000	-1.0000	1.2563	1.2965	682.4	857	.726	1.2516	1.2980	682.8	853	.726
1300	1.3562-2	-332.1	7.4726	28.935	508	1.0000	-1.0000	1.2658	1.2937	695.2	886	.726	1.2597	1.2955	695.7	881	.726
1350	1.3060-2	-268.6	7.5205	28.935	521	1.0000	-1.0000	1.2752	1.2909	707.6	915	.726	1.2674	1.2932	708.3	909	.726
1400	1.2593-2	-204.6	7.5671	28.935	533	1.0000	-1.0000	1.2845	1.2882	719.9	944	.725	1.2747	1.2910	720.7	937	.725
1450	1.2159-2	-140.1	7.6123	28.935	545	1.0000	-1.0000	1.2938	1.2855	731.9	973	.725	1.2817	1.2890	732.8	964	.725
1500	1.1754-2	-75.2	7.6563	28.935	558	1.0000	-1.0000	1.3030	1.2829	743.6	1002	.725	1.2883	1.2871	744.8	991	.725
1550	1.1375-2	-9.8	7.6992	28.934	570	1.0001	-1.0000	1.3122	1.2804	755.2	1032	.725	1.2946	1.2853	756.6	1018	.725
1600	1.1019-2	56.0	7.7410	28.934	582	1.0001	-1.0000	1.3215	1.2779	766.5	1062	.724	1.3006	1.2836	768.2	1045	.724
1650	1.0685-2	122.3	7.7818	28.934	593	1.0002	-1.0000	1.3309	1.2755	777.7	1092	.724	1.3063	1.2820	779.6	1071	.724
1700	1.0371-2	189.1	7.8217	28.934	605	1.0003	-1.0000	1.3404	1.2730	788.6	1122	.723	1.3117	1.2805	790.9	1097	.723
1750	1.0074-2	256.4	7.8607	28.934	617	1.0004	-1.0000	1.3502	1.2706	799.4	1153	.722	1.3168	1.2792	802.0	1123	.723
1800	9.7945-3	324.1	7.8989	28.933	628	1.0006	-1.0000	1.3601	1.2682	809.9	1184	.722	1.3216	1.2779	813.0	1149	.722
1850	9.5296-3	392.4	7.9363	28.933	639	1.0008	-1.0000	1.3705	1.2658	820.3	1216	.721	1.3262	1.2766	823.8	1174	.722
1900	9.2786-3	461.2	7.9730	28.932	650	1.0011	-1.0000	1.3812	1.2634	830.5	1248	.720	1.3305	1.2755	834.5	1200	.721
1950	9.0404-3	530.5	8.0090	28.931	661	1.0014	-1.0000	1.3925	1.2609	840.6	1281	.719	1.3346	1.2744	845.1	1225	.721
2000	8.8140-3	600.4	8.0444	28.930	672	1.0019	-1.0001	1.4045	1.2584	850.5	1316	.718	1.3385	1.2734	855.5	1249	.720
2050	8.5986-3	671.0	8.0792	28.929	683	1.0025	-1.0001	1.4173	1.2558	860.2	1352	.717	1.3422	1.2725	865.9	1274	.720
2100	8.3933-3	742.2	8.1135	28.927	694	1.0032	-1.0001	1.4310	1.2532	869.7	1389	.715	1.3457	1.2716	876.1	1297	.720
2150	8.1974-3	814.1	8.1474	28.924	705	1.0041	-1.0001	1.4460	1.2505	879.1	1428	.714	1.3490	1.2708	886.2	1321	.720
2200	8.0102-3	886.8	8.1808	28.921	715	1.0053	-1.0002	1.4623	1.2476	888.3	1470	.712	1.3521	1.2700	896.2	1345	.719
2250	7.8312-3	960.4	8.2139	28.917	726	1.0067	-1.0002	1.4803	1.2447	897.4	1514	.710	1.3551	1.2693	906.2	1368	.719
2300	7.6597-3	1034.9	8.2466	28.912	736	1.0084	-1.0003	1.5002	1.2417	906.2	1562	.707	1.3579	1.2687	916.0	1391	.719
2350	7.4952-3	1110.4	8.2791	28.906	746	1.0105	-1.0004	1.5224	1.2385	914.9	1614	.704	1.3605	1.2681	925.8	1414	.718
2400	7.3372-3	1187.1	8.3114	28.899	757	1.0131	-1.0005	1.5471	1.2351	923.5	1671	.701	1.3630	1.2676	935.5	1437	.718
2450	7.1853-3	1265.2	8.3436	28.891	767	1.0161	-1.0006	1.5747	1.2317	931.9	1733	.697	1.3654	1.2671	945.2	1459	.717
2500	7.0391-3	1344.7	8.3757	28.880	777	1.0197	-1.0007	1.6055	1.2281	940.1	1802	.692	1.3676	1.2666	954.8	1482	.717
2550	6.8981-3	1425.8	8.4078	28.868	787	1.0240	-1.0009	1.6398	1.2243	948.3	1879	.687	1.3697	1.2663	964.4	1504	.716
2600	6.7620-3	1508.7	8.4400	28.853	797	1.0290	-1.0011	1.6780	1.2205	956.3	1963	.681	1.3717	1.2659	973.9	1527	.716
2650	6.6304-3	1593.7	8.4724	28.836	806	1.0347	-1.0014	1.7203	1.2166	964.2	2058	.674	1.3736	1.2657	983.4	1549	.715
2700	6.5030-3	1680.8	8.5050	28.815	816	1.0414	-1.0017	1.7669	1.2127	972.0	2162	.667	1.3754	1.2655	992.9	1571	.715
2750	6.3795-3	1770.4	8.5379	28.791	826	1.0489	-1.0020	1.8179	1.2088	979.8	2277	.659	1.3771	1.2654	1002.4	1593	.714
2800	6.2596-3	1862.7	8.5711	28.764	835	1.0573	-1.0024	1.8732	1.2049	987.5	2404	.651	1.3787	1.2653	1012.0	1615	.713
2850	6.1430-3	1957.8	8.6048	28.732	845	1.0668	-1.0029	1.9329	1.2012	995.3	2544	.642	1.3802	1.2653	1021.5	1637	.712
2900	6.0295-3	2056.0	8.6390	28.696	854	1.0772	-1.0034	1.9966	1.1975	1003.1	2697	.632	1.3816	1.2654	1031.1	1658	.712
2950	5.9190-3	2157.5	8.6737	28.656	863	1.0885	-1.0040	2.0640	1.1941	1011.0	2862	.623	1.3829	1.2655	1040.8	1680	.711
3000	5.8111-3	2262.5	8.7089	28.610	873	1.1006	-1.0046	2.1344	1.1909	1019.0	3041	.612	1.3841	1.2658	1050.5	1702	.710

TABLE 8C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.033814; EQUIV.RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.890-5	-1705.4	7.3615	28.934	1.0547	1.811-5	29.722	131	1.000	-1.000	0.9903	1.3937	279	177	.734	200
220	1.714-5	-1681.0	7.4775	28.934	1.5703	1.645-5	29.694	142	1.000	-1.000	0.9924	1.3931	293	193	.731	220
240	1.533-5	-1619.4	7.7428	28.934	6.0120	1.493-5	29.411	150	1.000	-1.000	1.0063	1.3907	307	205	.735	240
						PRESSURE = 0.10 ATM										
200	1.891-4	-1705.7	6.7433	28.934	1.0184	1.811-4	29.724	131	1.000	-1.000	0.9902	1.3937	279	177	.734	200
220	1.718-4	-1684.9	6.8422	28.934	1.0759	1.646-4	29.721	142	1.000	-1.000	0.9912	1.3932	293	193	.730	220
240	1.571-4	-1660.4	6.9485	28.934	1.5032	1.508-4	29.693	153	1.000	-1.000	0.9936	1.3924	306	208	.727	240
260	1.426-4	-1611.9	7.1416	28.934	4.0341	1.383-4	29.499	161	1.000	-1.000	1.0039	1.3903	319	222	.729	260
280	1.259-4	-1504.4	7.5413	28.934	1.0320	1.259-4	28.934	166	1.000	-1.000	1.0320	1.3859	334	231	.741	280
						PRESSURE = 1.00 ATM										
200	1.890-3	-1705.7	6.1262	28.934	1.0148	1.811-3	29.724	131	1.000	-1.000	0.9902	1.3937	279	177	.734	200
220	1.719-3	-1685.3	6.2233	28.934	1.0267	1.647-3	29.724	142	1.000	-1.000	0.9910	1.3932	293	193	.730	220
240	1.575-3	-1664.4	6.3142	28.934	1.0759	1.509-3	29.721	153	1.000	-1.000	0.9924	1.3926	306	209	.726	240
260	1.451-3	-1641.0	6.4077	28.934	1.3260	1.392-3	29.702	163	1.000	-1.000	0.9948	1.3916	318	224	.724	260
280	1.337-3	-1594.6	6.5789	28.934	2.1022	1.289-3	29.610	172	1.000	-1.000	1.0009	1.3900	331	238	.725	280
298	1.229-3	-1542.7	6.7579	28.934	3.8885	1.200-3	29.360	179	1.000	-1.000	1.0143	1.3873	342	249	.730	298
300	1.217-3	-1535.2	6.7828	28.934	4.1810	1.191-3	29.318	180	1.000	-1.000	1.0165	1.3869	344	250	.731	300
320	1.102-3	-1463.0	7.0178	28.934	1.0371	1.102-3	28.934	186	1.000	-1.000	1.0371	1.3832	357	260	.740	320
						PRESSURE = 10.00 ATM										
200	1.889-2	-1705.7	5.5091	28.934	1.0144	1.811-2	29.724	131	1.000	-1.000	0.9902	1.3937	279	177	.734	200
220	1.717-2	-1685.3	5.6061	28.934	1.0218	1.647-2	29.724	142	1.000	-1.000	0.9910	1.3932	293	193	.730	220
240	1.574-2	-1664.8	5.6955	28.934	1.0334	1.509-2	29.724	153	1.000	-1.000	0.9922	1.3926	306	209	.726	240
260	1.453-2	-1643.9	5.7792	28.934	1.0654	1.393-2	29.722	163	1.000	-1.000	0.9939	1.3917	318	224	.724	260
280	1.348-2	-1607.4	5.9138	28.934	1.2260	1.293-2	29.713	173	1.000	-1.000	0.9962	1.3906	330	239	.722	280
298	1.264-2	-1583.8	5.9953	28.934	1.3919	1.213-2	29.688	182	1.000	-1.000	0.9994	1.3893	341	252	.722	298
300	1.255-2	-1581.2	6.0039	28.934	1.4177	1.206-2	29.684	183	1.000	-1.000	0.9998	1.3892	342	253	.722	300
320	1.169-2	-1549.0	6.1078	28.934	1.8619	1.127-2	29.603	192	1.000	-1.000	1.0061	1.3873	353	266	.724	320
340	1.082-2	-1503.6	6.2450	28.934	2.7798	1.054-2	29.413	199	1.000	-1.000	1.0177	1.3846	365	278	.729	340
360	9.868-3	-1432.1	6.4491	28.934	4.5724	9.823-3	29.016	205	1.000	-1.000	1.0396	1.3805	377	288	.738	360
380	9.279-3	-1400.5	6.5351	28.934	1.0471	9.279-3	28.934	213	1.000	-1.000	1.0471	1.3782	388	301	.739	380
						PRESSURE = 50.00 ATM										
200	9.412-2	-1705.7	5.0779	28.934	1.0144	9.056-2	29.724	131	1.000	-1.000	0.9902	1.3937	279	177	.734	200
220	8.560-2	-1685.4	5.1749	28.934	1.0214	8.233-2	29.724	142	1.000	-1.000	0.9910	1.3932	293	193	.730	220
240	7.849-2	-1664.8	5.2641	28.934	1.0296	7.547-2	29.724	153	1.000	-1.000	0.9922	1.3926	306	209	.726	240
260	7.247-2	-1644.1	5.3469	28.934	1.0424	6.966-2	29.724	163	1.000	-1.000	0.9938	1.3917	318	224	.724	260
280	6.732-2	-1608.5	5.4783	28.934	1.1496	6.468-2	29.722	173	1.000	-1.000	0.9958	1.3906	330	239	.722	280
298	6.321-2	-1587.4	5.5514	28.934	1.1833	6.073-2	29.717	182	1.000	-1.000	0.9981	1.3895	340	252	.721	298
300	6.281-2	-1585.2	5.5588	28.934	1.1886	6.036-2	29.716	183	1.000	-1.000	0.9984	1.3894	341	254	.721	300
320	5.882-2	-1560.6	5.6379	28.934	1.2771	5.655-2	29.700	193	1.000	-1.000	1.0017	1.3879	353	267	.721	320
340	5.519-2	-1533.5	5.7201	28.934	1.4516	5.316-2	29.662	201	1.000	-1.000	1.0063	1.3861	363	280	.723	340
360	5.179-2	-1501.7	5.8110	28.934	1.7608	5.007-2	29.583	210	1.000	-1.000	1.0131	1.3839	374	293	.725	360
380	4.845-2	-1461.8	5.9187	28.934	2.2685	4.720-2	29.433	217	1.000	-1.000	1.0235	1.3812	385	305	.728	380
400	4.502-2	-1409.0	6.0539	28.934	3.0639	4.444-2	29.174	224	1.000	-1.000	1.0395	1.3777	396	317	.734	400
420	4.198-2	-1358.4	6.1778	28.934	1.0551	4.198-2	28.934	230	1.000	-1.000	1.0551	1.3743	407	329	.738	420

TABLE 9A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.050721; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 28.9198;
DRY AIR; GASEOUS COMPOSITION: CO2= .09983; H2O= .09953; N2= .74198; O2= .04976; AR= .00890

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7622-3	8.8109-2	-2292.7	7.8603	7.1983	6.5363	5.8743	5.4116	1.0351	1.3846	282.2	119	159	.7719	200
210	1.6783-3	8.3913-2	-2282.3	7.9108	7.2488	6.5868	5.9248	5.4621	1.0360	1.3841	289.1	124	168	.7680	210
220	1.6020-3	8.0099-2	-2272.0	7.9590	7.2970	6.6350	5.9731	5.5103	1.0371	1.3835	295.8	130	176	.7646	220
230	1.5323-3	7.6616-2	-2261.6	8.0051	7.3432	6.6812	6.0192	5.5565	1.0382	1.3830	302.4	135	184	.7615	230
240	1.4685-3	7.3424-2	-2251.2	8.0494	7.3874	6.7254	6.0634	5.6007	1.0394	1.3823	308.8	141	193	.7588	240
250	1.4097-3	7.0487-2	-2240.8	8.0918	7.4298	6.7678	6.1058	5.6431	1.0408	1.3817	315.1	146	201	.7564	250
260	1.3555-3	6.7776-2	-2230.4	8.1327	7.4707	6.8087	6.1467	5.6840	1.0421	1.3810	321.3	151	209	.7545	260
270	1.3053-3	6.5266-2	-2220.0	8.1720	7.5100	6.8480	6.1860	5.7233	1.0436	1.3802	327.3	156	216	.7529	270
280	1.2587-3	6.2935-2	-2209.5	8.2100	7.5480	6.8860	6.2240	5.7613	1.0452	1.3795	333.2	161	224	.7517	280
290	1.2153-3	6.0765-2	-2199.1	8.2467	7.5847	6.9227	6.2607	5.7980	1.0468	1.3786	339.0	166	232	.7507	290
298	1.1821-3	5.9104-2	-2190.5	8.2757	7.6137	6.9518	6.2898	5.8271	1.0482	1.3780	343.7	170	238	.7502	298
300	1.1748-3	5.8739-2	-2188.6	8.2822	7.6202	6.9582	6.2963	5.8335	1.0485	1.3778	344.7	171	239	.7501	300
310	1.1369-3	5.6844-2	-2178.1	8.3166	7.6546	6.9927	6.3307	5.8679	1.0503	1.3769	350.3	176	246	.7500	310
320	1.1014-3	5.5068-2	-2167.6	8.3500	7.6880	7.0260	6.3640	5.9013	1.0521	1.3760	355.8	181	253	.7501	320
330	1.0680-3	5.3399-2	-2157.1	8.3824	7.7204	7.0584	6.3964	5.9337	1.0540	1.3751	361.2	185	261	.7503	330
340	1.0366-3	5.1829-2	-2146.5	8.4139	7.7519	7.0899	6.4279	5.9652	1.0560	1.3741	366.5	190	267	.7505	340
350	1.0070-3	5.0348-2	-2135.9	8.4445	7.7826	7.1206	6.4586	5.9959	1.0580	1.3731	371.7	195	274	.7506	350
360	9.7899-4	4.8949-2	-2125.3	8.4744	7.8124	7.1504	6.4884	6.0257	1.0601	1.3721	376.8	199	282	.7502	360
370	9.5253-4	4.7626-2	-2114.7	8.5035	7.8415	7.1795	6.5175	6.0548	1.0622	1.3711	381.9	204	289	.7497	370
380	9.2746-4	4.6373-2	-2104.1	8.5318	7.8698	7.2078	6.5458	6.0831	1.0644	1.3701	386.9	208	296	.7492	380
390	9.0368-4	4.5184-2	-2093.4	8.5595	7.8975	7.2355	6.5735	6.1108	1.0667	1.3690	391.8	213	303	.7486	390
400	8.8109-4	4.4054-2	-2082.8	8.5865	7.9245	7.2625	6.6005	6.1378	1.0690	1.3679	396.6	217	310	.7480	400
410	8.5960-4	4.2980-2	-2072.1	8.6129	7.9510	7.2890	6.6270	6.1643	1.0713	1.3668	401.4	221	317	.7477	410
420	8.3913-4	4.1957-2	-2061.3	8.6388	7.9768	7.3148	6.6528	6.1901	1.0737	1.3657	406.1	226	324	.7475	420
430	8.1962-4	4.0981-2	-2050.6	8.6641	8.0021	7.3401	6.6781	6.2154	1.0761	1.3646	410.7	230	331	.7473	430
440	8.0099-4	4.0050-2	-2039.8	8.6888	8.0269	7.3649	6.7029	6.2402	1.0786	1.3634	415.3	234	338	.7472	440
450	7.8319-4	3.9160-2	-2029.0	8.7131	8.0511	7.3891	6.7271	6.2644	1.0811	1.3623	419.8	238	344	.7471	450
460	7.6616-4	3.8308-2	-2018.2	8.7369	8.0749	7.4129	6.7509	6.2882	1.0837	1.3611	424.3	242	351	.7471	460
470	7.4986-4	3.7493-2	-2007.3	8.7602	8.0982	7.4363	6.7743	6.3116	1.0863	1.3599	428.7	246	358	.7471	470
480	7.3424-4	3.6712-2	-1996.5	8.7831	8.1211	7.4592	6.7972	6.3345	1.0889	1.3587	433.0	250	364	.7471	480
490	7.1926-4	3.5963-2	-1985.6	8.8056	8.1436	7.4816	6.8196	6.3569	1.0916	1.3575	437.3	254	371	.7471	490
500	7.0487-4	3.5244-2	-1974.6	8.8277	8.1657	7.5037	6.8417	6.3790	1.0943	1.3563	441.6	258	378	.7472	500
510	6.9105-4	3.4553-2	-1963.7	8.8494	8.1874	7.5254	6.8634	6.4007	1.0970	1.3551	445.8	262	384	.7470	510
520	6.7776-4	3.3888-2	-1952.7	8.8707	8.2087	7.5467	6.8848	6.4220	1.0998	1.3539	449.9	266	391	.7468	520
530	6.6497-4	3.3249-2	-1941.7	8.8917	8.2297	7.5677	6.9057	6.4430	1.1026	1.3527	454.0	270	398	.7466	530
540	6.5266-4	3.2633-2	-1930.6	8.9123	8.2503	7.5884	6.9264	6.4637	1.1054	1.3515	458.1	273	405	.7464	540
550	6.4079-4	3.2040-2	-1919.6	8.9326	8.2707	7.6087	6.9467	6.4840	1.1082	1.3503	462.1	277	412	.7462	550
560	6.2935-4	3.1467-2	-1908.5	8.9526	8.2907	7.6287	6.9667	6.5040	1.1111	1.3491	466.0	281	418	.7459	560
570	6.1831-4	3.0915-2	-1897.4	8.9723	8.3103	7.6483	6.9864	6.5236	1.1140	1.3479	470.0	285	425	.7457	570
580	6.0765-4	3.0382-2	-1886.2	8.9917	8.3297	7.6677	7.0058	6.5430	1.1168	1.3467	473.9	288	432	.7454	580
590	5.9735-4	2.9867-2	-1875.0	9.0108	8.3489	7.6869	7.0249	6.5622	1.1197	1.3454	477.7	292	439	.7451	590

TABLE 9A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.050721; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 28.9198;
DRY AIR; GASEOUS COMPOSITION: CO2= .09983; H2O= .09953; N2= .74198; O2= .04976; AR= .00890

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8739-4	2.9370-2	-1863.8	9.0297	8.3677	7.7057	7.0437	6.5810	1.1227	1.3442	481.5	296	445	.7448	600
610	5.7776-4	2.8888-2	-1852.6	9.0483	8.3863	7.7243	7.0623	6.5996	1.1256	1.3430	485.3	299	452	.7444	610
620	5.6844-4	2.8422-2	-1841.3	9.0666	8.4046	7.7426	7.0806	6.6179	1.1285	1.3418	489.1	303	459	.7440	620
630	5.5942-4	2.7971-2	-1830.0	9.0847	8.4227	7.7607	7.0987	6.6360	1.1315	1.3406	492.8	306	466	.7437	630
640	5.5068-4	2.7534-2	-1818.7	9.1025	8.4405	7.7785	7.1165	6.6538	1.1344	1.3395	496.4	310	473	.7433	640
650	5.4221-4	2.7110-2	-1807.3	9.1201	8.4581	7.7962	7.1342	6.6714	1.1374	1.3383	500.1	313	480	.7429	650
660	5.3399-4	2.6700-2	-1795.9	9.1375	8.4755	7.8135	7.1515	6.6888	1.1404	1.3371	503.7	317	487	.7425	660
670	5.2602-4	2.6301-2	-1784.5	9.1547	8.4927	7.8307	7.1687	6.7060	1.1434	1.3359	507.3	320	494	.7420	670
680	5.1829-4	2.5914-2	-1773.0	9.1717	8.5097	7.8477	7.1857	6.7230	1.1463	1.3348	510.8	324	501	.7416	680
690	5.1078-4	2.5539-2	-1761.6	9.1884	8.5264	7.8644	7.2024	6.7397	1.1493	1.3336	514.3	327	507	.7412	690
700	5.0348-4	2.5174-2	-1750.1	9.2050	8.5430	7.8810	7.2190	6.7563	1.1523	1.3325	517.8	331	514	.7408	700
710	4.9639-4	2.4819-2	-1738.5	9.2213	8.5593	7.8974	7.2354	6.7726	1.1553	1.3313	521.3	334	521	.7405	710
720	4.8949-4	2.4475-2	-1727.0	9.2375	8.5755	7.9135	7.2515	6.7888	1.1582	1.3302	524.7	337	528	.7401	720
730	4.8279-4	2.4139-2	-1715.4	9.2535	8.5915	7.9295	7.2675	6.8048	1.1612	1.3291	528.1	341	535	.7397	730
740	4.7626-4	2.3813-2	-1703.7	9.2693	8.6073	7.9453	7.2834	6.8206	1.1641	1.3280	531.5	344	542	.7393	740
750	4.6991-4	2.3496-2	-1692.1	9.2850	8.6230	7.9610	7.2990	6.8363	1.1671	1.3269	534.9	347	549	.7389	750
760	4.6373-4	2.3187-2	-1680.4	9.3005	8.6385	7.9765	7.3145	6.8518	1.1700	1.3258	538.2	351	556	.7386	760
770	4.5771-4	2.2885-2	-1668.7	9.3158	8.6538	7.9918	7.3298	6.8671	1.1730	1.3247	541.5	354	562	.7382	770
780	4.5184-4	2.2592-2	-1656.9	9.3309	8.6689	8.0069	7.3449	6.8822	1.1759	1.3236	544.8	357	569	.7379	780
790	4.4612-4	2.2306-2	-1645.2	9.3459	8.6839	8.0219	7.3599	6.8972	1.1788	1.3226	548.1	360	576	.7375	790
800	4.4054-4	2.2027-2	-1633.4	9.3608	8.6988	8.0368	7.3748	6.9121	1.1817	1.3215	551.3	364	583	.7372	800
810	4.3511-4	2.1755-2	-1621.5	9.3755	8.7135	8.0515	7.3895	6.9268	1.1845	1.3205	554.5	367	590	.7369	810
820	4.2980-4	2.1490-2	-1609.7	9.3900	8.7280	8.0660	7.4040	6.9413	1.1874	1.3195	557.7	370	597	.7367	820
830	4.2462-4	2.1231-2	-1597.8	9.4044	8.7424	8.0804	7.4185	6.9557	1.1902	1.3185	560.9	373	603	.7364	830
840	4.1957-4	2.0978-2	-1585.9	9.4187	8.7567	8.0947	7.4327	6.9700	1.1931	1.3175	564.1	376	610	.7362	840
850	4.1463-4	2.0732-2	-1573.9	9.4328	8.7708	8.1088	7.4469	6.9841	1.1959	1.3165	567.2	380	617	.7359	850
860	4.0981-4	2.0490-2	-1561.9	9.4468	8.7848	8.1229	7.4609	6.9981	1.1986	1.3155	570.3	383	624	.7357	860
870	4.0510-4	2.0255-2	-1549.9	9.4607	8.7987	8.1367	7.4747	7.0120	1.2014	1.3146	573.4	386	630	.7355	870
880	4.0049-4	2.0025-2	-1537.9	9.4745	8.8125	8.1505	7.4885	7.0258	1.2041	1.3136	576.5	389	637	.7353	880
890	3.9599-4	1.9800-2	-1525.9	9.4881	8.8261	8.1641	7.5021	7.0394	1.2069	1.3127	579.6	392	644	.7351	890
900	3.9160-4	1.9580-2	-1513.8	9.5016	8.8396	8.1776	7.5156	7.0529	1.2095	1.3118	582.6	395	650	.7349	900
910	3.8729-4	1.9365-2	-1501.7	9.5150	8.8530	8.1910	7.5290	7.0663	1.2122	1.3109	585.6	398	657	.7347	910
920	3.8308-4	1.9154-2	-1489.5	9.5282	8.8662	8.2042	7.5422	7.0795	1.2148	1.3100	588.6	401	663	.7345	920
930	3.7896-4	1.8948-2	-1477.4	9.5414	8.8794	8.2174	7.5554	7.0927	1.2174	1.3092	591.6	404	670	.7343	930
940	3.7493-4	1.8747-2	-1465.2	9.5544	8.8924	8.2304	7.5684	7.1057	1.2200	1.3083	594.6	407	677	.7341	940
950	3.7098-4	1.8549-2	-1453.0	9.5673	8.9053	8.2433	7.5813	7.1186	1.2226	1.3075	597.6	410	683	.7339	950
960	3.6712-4	1.8356-2	-1440.7	9.5801	8.9181	8.2562	7.5942	7.1315	1.2251	1.3066	600.5	413	690	.7337	960
970	3.6334-4	1.8167-2	-1428.5	9.5928	8.9309	8.2689	7.6069	7.1442	1.2276	1.3058	603.5	416	696	.7336	970
980	3.5963-4	1.7981-2	-1416.2	9.6054	8.9435	8.2815	7.6195	7.1568	1.2300	1.3050	606.4	419	703	.7334	980
990	3.5600-4	1.7800-2	-1403.9	9.6179	8.9560	8.2940	7.6320	7.1693	1.2324	1.3043	609.3	422	709	.7332	990

TABLE 9A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.050721; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 28.9198;
DRY AIR; GASEOUS COMPOSITION: CO2= .09983; H2O= .09953; N2= .74198; O2= .04976; AR= .00890

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5244-4	1.7622-2	-1391.5	9.6303	8.9684	8.3064	7.6444	7.1817	1.2348	1.3035	612.2	425	716	.7331	1000
1050	3.3565-4	1.6783-2	-1329.5	9.6909	9.0289	8.3669	7.7049	7.2422	1.2460	1.2999	626.4	439	747	.7324	1050
1100	3.2040-4	1.6020-2	-1266.9	9.7491	9.0871	8.4251	7.7631	7.3004	1.2567	1.2966	640.4	453	778	.7318	1100
1150	3.0647-4	1.5323-2	-1203.8	9.8052	9.1432	8.4812	7.8192	7.3565	1.2669	1.2935	654.0	467	809	.7314	1150
1200	2.9370-4	1.4685-2	-1140.3	9.8593	9.1973	8.5353	7.8733	7.4106	1.2766	1.2907	667.3	481	840	.7309	1200
1250	2.8195-4	1.4097-2	-1076.2	9.9116	9.2496	8.5876	7.9256	7.4629	1.2858	1.2880	680.3	494	870	.7306	1250
1300	2.7110-4	1.3555-2	-1011.7	9.9622	9.3002	8.6382	7.9762	7.5135	1.2946	1.2855	693.1	507	899	.7302	1300
1350	2.6106-4	1.3053-2	-946.7	10.0112	9.3492	8.6872	8.0252	7.5625	1.3030	1.2831	705.7	520	929	.7298	1350
1400	2.5174-4	1.2587-2	-881.4	10.0588	9.3968	8.7348	8.0728	7.6101	1.3109	1.2809	718.0	533	958	.7295	1400
1450	2.4306-4	1.2153-2	-815.7	10.1049	9.4429	8.7809	8.1189	7.6562	1.3185	1.2789	730.2	546	987	.7291	1450
1500	2.3496-4	1.1748-2	-749.5	10.1497	9.4877	8.8257	8.1637	7.7010	1.3257	1.2769	742.1	558	1015	.7287	1500
1550	2.2738-4	1.1369-2	-683.1	10.1933	9.5313	8.8693	8.2073	7.7446	1.3325	1.2751	753.8	570	1044	.7281	1550
1600	2.2027-4	1.1014-2	-616.3	10.2357	9.5737	8.9117	8.2497	7.7870	1.3390	1.2734	765.4	582	1072	.7275	1600
1650	2.1360-4	1.0680-2	-549.2	10.2770	9.6150	8.9530	8.2910	7.8283	1.3451	1.2718	776.7	595	1100	.7269	1650
1700	2.0731-4	1.0366-2	-481.8	10.3172	9.6552	8.9933	8.3313	7.8685	1.3509	1.2704	788.0	606	1128	.7263	1700
1750	2.0139-4	1.0070-2	-414.1	10.3565	9.6945	9.0325	8.3705	7.9078	1.3564	1.2690	799.0	618	1155	.7257	1750
1800	1.9580-4	9.7899-3	-346.2	10.3948	9.7328	9.0708	8.4088	7.9461	1.3617	1.2676	809.9	630	1183	.7251	1800
1850	1.9051-4	9.5253-3	-277.9	10.4321	9.7701	9.1082	8.4462	7.9835	1.3666	1.2664	820.7	641	1210	.7244	1850
1900	1.8549-4	9.2746-3	-209.5	10.4686	9.8067	9.1447	8.4827	8.0200	1.3713	1.2653	831.4	653	1236	.7238	1900
1950	1.8074-4	9.0368-3	-140.8	10.5043	9.8423	9.1803	8.5184	8.0556	1.3758	1.2642	841.9	664	1263	.7232	1950
2000	1.7622-4	8.8109-3	-71.9	10.5392	9.8772	9.2152	8.5532	8.0905	1.3800	1.2632	852.2	675	1289	.7225	2000
2050	1.7192-4	8.5960-3	-2.8	10.5733	9.9113	9.2494	8.5874	8.1246	1.3840	1.2622	862.5	686	1315	.7220	2050
2100	1.6783-4	8.3913-3	66.5	10.6067	9.9447	9.2827	8.6208	8.1580	1.3877	1.2613	872.6	697	1341	.7215	2100
2150	1.6392-4	8.1962-3	135.9	10.6394	9.9774	9.3154	8.6535	8.1907	1.3913	1.2605	882.7	708	1366	.7210	2150
2200	1.6020-4	8.0099-3	205.6	10.6715	10.0095	9.3475	8.6855	8.2228	1.3947	1.2597	892.6	719	1391	.7204	2200
2250	1.5664-4	7.8319-3	275.4	10.7028	10.0408	9.3788	8.7169	8.2541	1.3979	1.2589	902.4	729	1416	.7199	2250
2300	1.5323-4	7.6616-3	345.4	10.7336	10.0716	9.4096	8.7476	8.2849	1.4010	1.2582	912.1	740	1441	.7193	2300
2350	1.4997-4	7.4986-3	415.5	10.7638	10.1018	9.4398	8.7778	8.3151	1.4039	1.2575	921.7	750	1465	.7187	2350
2400	1.4685-4	7.3424-3	485.8	10.7933	10.1313	9.4694	8.8074	8.3446	1.4066	1.2569	931.3	761	1490	.7182	2400
2450	1.4385-4	7.1926-3	556.2	10.8224	10.1604	9.4984	8.8364	8.3737	1.4092	1.2563	940.7	771	1514	.7176	2450
2500	1.4097-4	7.0487-3	626.7	10.8509	10.1889	9.5269	8.8649	8.4022	1.4117	1.2557	950.0	781	1538	.7169	2500
2550	1.3821-4	6.9105-3	697.3	10.8788	10.2168	9.5549	8.8929	8.4302	1.4141	1.2552	959.3	791	1562	.7162	2550
2600	1.3555-4	6.7776-3	768.1	10.9063	10.2443	9.5823	8.9203	8.4576	1.4163	1.2547	968.4	801	1586	.7154	2600
2650	1.3299-4	6.6497-3	839.0	10.9333	10.2713	9.6093	8.9473	8.4846	1.4185	1.2542	977.5	811	1610	.7147	2650
2700	1.3053-4	6.5266-3	909.9	10.9599	10.2979	9.6359	8.9739	8.5112	1.4206	1.2537	986.5	821	1634	.7139	2700
2750	1.2816-4	6.4079-3	981.0	10.9859	10.3239	9.6620	9.0000	8.5373	1.4226	1.2533	995.4	831	1657	.7132	2750
2800	1.2587-4	6.2935-3	1052.2	11.0116	10.3496	9.6876	9.0256	8.5629	1.4245	1.2529	1004.3	841	1680	.7125	2800
2850	1.2366-4	6.1831-3	1123.5	11.0368	10.3748	9.7128	9.0508	8.5881	1.4263	1.2525	1013.0	850	1704	.7118	2850
2900	1.2153-4	6.0765-3	1194.8	11.0616	10.3996	9.7377	9.0757	8.6130	1.4281	1.2521	1021.7	860	1727	.7112	2900
2950	1.1947-4	5.9735-3	1266.3	11.0861	10.4241	9.7621	9.1001	8.6374	1.4298	1.2517	1030.3	869	1749	.7105	2950
3000	1.1748-4	5.8739-3	1337.8	11.1101	10.4481	9.7861	9.1241	8.6614	1.4314	1.2513	1038.9	879	1772	.7099	3000

TABLE 9.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.050721; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.9159-6	-1513.8	9.5016	28.920	395	1.0000	-1.0000	1.2098	1.3117	582.6	650	.735	1.2095	1.3118	582.6	650	.735
950	3.7098-6	-1452.9	9.5674	28.920	410	1.0000	-1.0000	1.2229	1.3073	597.6	683	.734	1.2226	1.3075	597.6	683	.734
1000	3.5244-6	-1391.5	9.6304	28.920	425	1.0000	-1.0000	1.2354	1.3033	612.1	716	.733	1.2348	1.3035	612.2	716	.733
1050	3.3565-6	-1329.4	9.6910	28.920	439	1.0000	-1.0000	1.2469	1.2997	626.4	748	.732	1.2460	1.2999	626.4	747	.732
1100	3.2040-6	-1266.8	9.7492	28.920	453	1.0000	-1.0000	1.2581	1.2962	640.3	779	.732	1.2567	1.2966	640.4	778	.732
1150	3.0647-6	-1203.6	9.8054	28.920	467	1.0000	-1.0000	1.2689	1.2929	653.8	811	.731	1.2669	1.2935	654.0	809	.731
1200	2.9370-6	-1139.9	9.8596	28.920	481	1.0000	-1.0000	1.2796	1.2898	667.1	842	.731	1.2766	1.2907	667.3	840	.731
1250	2.8195-6	-1075.7	9.9121	28.920	494	1.0001	-1.0000	1.2900	1.2868	680.0	873	.730	1.2858	1.2880	680.3	870	.731
1300	2.7110-6	-1010.9	9.9629	28.920	507	1.0001	-1.0000	1.3005	1.2839	692.7	904	.730	1.2946	1.2855	693.1	899	.730
1350	2.6106-6	-945.6	10.0122	28.919	520	1.0002	-1.0000	1.3113	1.2810	705.1	935	.729	1.3030	1.2831	705.7	929	.730
1400	2.5173-6	-879.8	10.0600	28.919	533	1.0003	-1.0000	1.3226	1.2780	717.2	967	.729	1.3109	1.2809	718.0	958	.729
1450	2.4305-6	-813.3	10.1067	28.919	546	1.0006	-1.0000	1.3349	1.2749	729.0	1001	.728	1.3185	1.2789	730.2	987	.729
1500	2.3494-6	-746.2	10.1522	28.918	558	1.0010	-1.0000	1.3490	1.2715	740.5	1037	.726	1.3257	1.2769	742.1	1015	.729
1550	2.2735-6	-678.4	10.1967	28.917	570	1.0017	-1.0000	1.3659	1.2677	751.7	1076	.724	1.3325	1.2752	753.9	1044	.728
1600	2.2023-6	-609.6	10.2403	28.915	582	1.0028	-1.0001	1.3871	1.2632	762.4	1121	.721	1.3390	1.2735	765.4	1072	.727
1650	2.1354-6	-539.6	10.2834	28.911	594	1.0045	-1.0001	1.4150	1.2578	772.6	1175	.716	1.3451	1.2719	776.9	1100	.727
1700	2.0722-6	-467.9	10.3262	28.906	606	1.0073	-1.0002	1.4527	1.2511	782.2	1243	.709	1.3509	1.2705	788.2	1128	.726
1750	2.0125-6	-394.1	10.3690	28.899	618	1.0115	-1.0003	1.5043	1.2428	791.0	1331	.699	1.3564	1.2692	799.4	1155	.725
1800	1.9558-6	-317.2	10.4123	28.887	630	1.0178	-1.0005	1.5754	1.2327	799.2	1448	.685	1.3615	1.2681	810.5	1183	.725
1850	1.9017-6	-236.1	10.4568	28.870	641	1.0270	-1.0008	1.6729	1.2208	806.5	1607	.667	1.3664	1.2671	821.6	1210	.724
1900	1.8501-6	-149.3	10.5030	28.844	652	1.0402	-1.0012	1.8047	1.2073	813.1	1825	.645	1.3710	1.2662	832.8	1237	.723
1950	1.8003-6	-54.9	10.5521	28.807	663	1.0586	-1.0017	1.9793	1.1928	819.4	2120	.619	1.3752	1.2656	844.0	1264	.722
2000	1.7522-6	49.5	10.6049	28.756	674	1.0832	-1.0025	2.2043	1.1784	825.5	2515	.591	1.3791	1.2653	855.4	1290	.720
2050	1.7053-6	166.5	10.6627	28.686	685	1.1152	-1.0036	2.4854	1.1647	831.9	3030	.562	1.3828	1.2652	867.0	1317	.719
2100	1.6593-6	299.0	10.7265	28.594	695	1.1551	-1.0050	2.8250	1.1525	838.9	3686	.532	1.3861	1.2655	879.1	1343	.717
2150	1.6140-6	449.9	10.7975	28.474	705	1.2034	-1.0068	3.2217	1.1422	846.8	4502	.504	1.3891	1.2662	891.6	1370	.714
2200	1.5689-6	622.0	10.8767	28.323	715	1.2600	-1.0089	3.6713	1.1338	855.7	5489	.478	1.3918	1.2673	904.7	1398	.711
2250	1.5240-6	817.9	10.9646	28.138	724	1.3245	-1.0115	4.1684	1.1272	865.7	6654	.453	1.3943	1.2689	918.5	1427	.707
2300	1.4792-6	1039.6	11.0621	27.916	733	1.3966	-1.0145	4.7074	1.1222	876.8	7995	.432	1.3967	1.2710	933.1	1458	.702
2350	1.4342-6	1289.2	11.1694	27.656	742	1.4757	-1.0179	5.2837	1.1186	889.0	9495	.413	1.3989	1.2737	948.6	1491	.696
2400	1.3891-6	1568.5	11.2870	27.356	750	1.5611	-1.0218	5.8915	1.1160	902.2	11116	.398	1.4012	1.2770	965.1	1527	.688
2450	1.3439-6	1878.7	11.4149	27.017	759	1.6513	-1.0260	6.5216	1.1144	916.6	12789	.387	1.4036	1.2808	982.7	1567	.680
2500	1.2986-6	2220.7	11.5531	26.639	767	1.7435	-1.0306	7.1566	1.1136	932.2	14416	.381	1.4061	1.2853	1001.5	1611	.669
2550	1.2534-6	2594.0	11.7009	26.226	775	1.8333	-1.0352	7.7668	1.1135	948.8	15866	.379	1.4088	1.2904	1021.4	1660	.658
2600	1.2086-6	2996.3	11.8571	25.785	783	1.9139	-1.0397	8.3079	1.1142	966.5	16996	.383	1.4117	1.2960	1042.4	1713	.645
2650	1.1646-6	3422.7	12.0196	25.323	791	1.9772	-1.0436	8.7236	1.1155	985.2	17669	.391	1.4149	1.3022	1064.4	1770	.632
2700	1.1219-6	3865.6	12.1851	24.855	799	2.0147	-1.0464	8.9552	1.1176	1004.7	17790	.402	1.4182	1.3087	1087.2	1829	.620
2750	1.0810-6	4314.4	12.3498	24.394	808	2.0202	-1.0478	8.9567	1.1205	1024.8	17335	.417	1.4217	1.3153	1110.3	1890	.608
2800	1.0426-6	4757.1	12.5094	23.955	816	1.9915	-1.0475	8.7119	1.1243	1045.3	16365	.435	1.4251	1.3220	1133.5	1949	.597
2850	1.0070-6	5181.8	12.6597	23.550	825	1.9317	-1.0456	8.2415	1.1290	1065.8	15009	.453	1.4284	1.3283	1156.1	2007	.587
2900	9.7440-7	5578.4	12.7977	23.187	834	1.8483	-1.0424	7.5992	1.1348	1086.3	13436	.472	1.4315	1.3342	1177.9	2061	.579
2950	9.4487-7	5940.0	12.9213	22.872	843	1.7506	-1.0383	6.8551	1.1418	1106.5	11805	.490	1.4343	1.3395	1198.5	2111	.573
3000	9.1826-7	6263.4	13.0300	22.605	853	1.6480	-1.0338	6.0791	1.1501	1126.6	10242	.506	1.4369	1.3440	1217.8	2158	.568

TABLE 9.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.050721; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9159-5	-1513.8	8.8396	28.920	395	1.0000	-1.0000	1.2098	1.3117	582.6	650	.735	1.2095	1.3118	582.6	650	.735
950	3.7098-5	-1452.9	8.9054	28.920	410	1.0000	-1.0000	1.2229	1.3073	597.6	683	.734	1.2226	1.3075	597.6	683	.734
1000	3.5244-5	-1391.5	8.9684	28.920	425	1.0000	-1.0000	1.2354	1.3033	612.1	716	.733	1.2348	1.3035	612.2	716	.733
1050	3.3565-5	-1329.4	9.0290	28.920	439	1.0000	-1.0000	1.2469	1.2997	626.4	748	.732	1.2460	1.2999	626.4	747	.732
1100	3.2040-5	-1266.8	9.0872	28.920	453	1.0000	-1.0000	1.2580	1.2962	640.3	779	.732	1.2567	1.2966	640.4	778	.732
1150	3.0647-5	-1203.6	9.1434	28.920	467	1.0000	-1.0000	1.2688	1.2930	653.8	810	.731	1.2669	1.2935	654.0	809	.731
1200	2.9370-5	-1139.9	9.1976	28.920	481	1.0000	-1.0000	1.2793	1.2899	667.1	841	.731	1.2766	1.2907	667.3	840	.731
1250	2.8195-5	-1075.7	9.2500	28.920	494	1.0000	-1.0000	1.2896	1.2869	680.1	872	.731	1.2858	1.2880	680.3	870	.731
1300	2.7110-5	-1011.0	9.3008	28.920	507	1.0001	-1.0000	1.2997	1.2841	692.8	903	.730	1.2946	1.2855	693.1	899	.730
1350	2.6106-5	-945.7	9.3501	28.920	520	1.0001	-1.0000	1.3098	1.2813	705.2	934	.730	1.3030	1.2831	705.7	929	.730
1400	2.5174-5	-880.0	9.3979	28.919	533	1.0002	-1.0000	1.3200	1.2786	717.4	965	.729	1.3109	1.2809	718.0	958	.729
1450	2.4305-5	-813.7	9.4444	28.919	546	1.0003	-1.0000	1.3305	1.2758	729.3	996	.728	1.3185	1.2789	730.2	987	.729
1500	2.3495-5	-746.9	9.4897	28.919	558	1.0005	-1.0000	1.3416	1.2731	741.0	1029	.728	1.3257	1.2769	742.1	1015	.729
1550	2.2737-5	-679.5	9.5339	28.918	570	1.0007	-1.0000	1.3536	1.2702	752.4	1063	.726	1.3325	1.2751	753.8	1044	.728
1600	2.2025-5	-611.5	9.5770	28.917	582	1.0012	-1.0000	1.3672	1.2671	763.5	1099	.725	1.3390	1.2735	765.4	1072	.728
1650	2.1357-5	-542.8	9.6193	28.916	594	1.0018	-1.0000	1.3830	1.2636	774.3	1137	.723	1.3451	1.2719	776.8	1100	.727
1700	2.0727-5	-473.2	9.6609	28.914	606	1.0028	-1.0001	1.4021	1.2598	784.7	1180	.720	1.3509	1.2704	788.1	1128	.726
1750	2.0133-5	-402.5	9.7019	28.911	618	1.0043	-1.0001	1.4258	1.2553	794.8	1230	.716	1.3564	1.2691	799.2	1155	.726
1800	1.9571-5	-330.5	9.7425	28.907	630	1.0066	-1.0002	1.4560	1.2500	804.4	1289	.712	1.3616	1.2678	810.2	1183	.725
1850	1.9038-5	-256.8	9.7829	28.900	641	1.0098	-1.0003	1.4951	1.2437	813.6	1360	.705	1.3665	1.2667	821.1	1210	.724
1900	1.8531-5	-180.8	9.8234	28.891	652	1.0143	-1.0004	1.5459	1.2363	822.2	1449	.696	1.3712	1.2656	831.9	1237	.724
1950	1.8048-5	-101.9	9.8643	28.878	664	1.0207	-1.0006	1.6120	1.2277	830.2	1562	.685	1.3755	1.2647	842.6	1263	.723
2000	1.7585-5	-19.3	9.9062	28.860	675	1.0294	-1.0009	1.6972	1.2180	837.7	1707	.671	1.3796	1.2639	853.4	1289	.722
2050	1.7142-5	68.2	9.9494	28.835	686	1.0411	-1.0013	1.8058	1.2075	844.8	1893	.654	1.3835	1.2633	864.1	1315	.721
2100	1.6714-5	161.8	9.9945	28.802	696	1.0564	-1.0018	1.9417	1.1964	851.6	2129	.635	1.3870	1.2628	875.0	1341	.720
2150	1.6300-5	262.9	10.0420	28.757	707	1.0759	-1.0025	2.1080	1.1852	858.4	2426	.614	1.3903	1.2626	885.9	1367	.719
2200	1.5898-5	373.1	10.0927	28.699	717	1.1000	-1.0034	2.3066	1.1746	865.2	2794	.592	1.3934	1.2625	897.0	1392	.718
2250	1.5505-5	494.1	10.1471	28.626	727	1.1289	-1.0044	2.5374	1.1648	872.5	3242	.569	1.3961	1.2627	908.4	1418	.716
2300	1.5119-5	627.4	10.2056	28.534	737	1.1628	-1.0058	2.7983	1.1561	880.2	3776	.546	1.3986	1.2632	920.1	1443	.714
2350	1.4740-5	774.4	10.2689	28.423	747	1.2012	-1.0073	3.0860	1.1487	888.6	4401	.524	1.4009	1.2639	932.1	1469	.712
2400	1.4365-5	936.3	10.3371	28.291	756	1.2440	-1.0091	3.3960	1.1426	897.7	5121	.502	1.4030	1.2650	944.6	1496	.709
2450	1.3995-5	1114.3	10.4104	28.135	766	1.2908	-1.0111	3.7241	1.1377	907.6	5937	.480	1.4049	1.2664	957.5	1523	.706
2500	1.3628-5	1309.0	10.4891	27.956	775	1.3410	-1.0134	4.0667	1.1339	918.2	6846	.460	1.4066	1.2681	971.0	1551	.702
2550	1.3264-5	1521.1	10.5731	27.754	783	1.3945	-1.0159	4.4208	1.1310	929.5	7843	.442	1.4083	1.2702	985.1	1582	.698
2600	1.2902-5	1751.2	10.6624	27.527	792	1.4509	-1.0187	4.7844	1.1289	941.6	8914	.425	1.4099	1.2726	999.7	1614	.692
2650	1.2544-5	1999.7	10.7571	27.276	801	1.5099	-1.0218	5.1550	1.1275	954.3	10038	.411	1.4115	1.2754	1015.0	1648	.686
2700	1.2188-5	2266.8	10.8569	27.003	809	1.5706	-1.0250	5.5291	1.1266	967.8	11181	.400	1.4132	1.2786	1031.0	1685	.679
2750	1.1835-5	2552.5	10.9618	26.706	818	1.6322	-1.0284	5.9005	1.1263	982.0	12301	.392	1.4150	1.2821	1047.7	1724	.671
2800	1.1486-5	2856.6	11.0714	26.389	826	1.6927	-1.0320	6.2593	1.1265	996.9	13344	.387	1.4169	1.2860	1065.1	1767	.662
2850	1.1141-5	3178.0	11.1851	26.054	834	1.7499	-1.0355	6.5915	1.1271	1012.5	14250	.386	1.4189	1.2902	1083.2	1813	.653
2900	1.0802-5	3515.0	11.3023	25.705	843	1.8007	-1.0388	6.8787	1.1282	1028.7	14960	.387	1.4210	1.2947	1102.0	1862	.643
2950	1.0471-5	3864.8	11.4219	25.346	851	1.8416	-1.0418	7.1005	1.1298	1045.6	15420	.392	1.4233	1.2995	1121.4	1913	.633
3000	1.0149-5	4223.6	11.5425	24.984	859	1.8694	-1.0441	7.2364	1.1320	1063.1	15592	.399	1.4257	1.3045	1141.2	1966	.623

TABLE 9.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.050721; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9160-4	-1513.8	8.1776	28.920	395	1.0000	-1.0000	1.2098	1.3117	582.6	650	.735	1.2095	1.3118	582.6	650	.735
950	3.7099-4	-1452.9	8.2434	28.920	410	1.0000	-1.0000	1.2229	1.3073	597.6	683	.734	1.2226	1.3075	597.6	683	.734
1000	3.5244-4	-1391.5	8.3064	28.920	425	1.0000	-1.0000	1.2354	1.3033	612.1	716	.733	1.2348	1.3035	612.2	716	.733
1050	3.3565-4	-1329.4	8.3670	28.920	439	1.0000	-1.0000	1.2469	1.2997	626.4	748	.732	1.2460	1.2999	626.4	747	.732
1100	3.2040-4	-1266.8	8.4252	28.920	453	1.0000	-1.0000	1.2580	1.2962	640.3	779	.732	1.2567	1.2966	640.4	778	.732
1150	3.0647-4	-1203.6	8.4814	28.920	467	1.0000	-1.0000	1.2687	1.2930	653.8	810	.731	1.2669	1.2935	654.0	809	.731
1200	2.9370-4	-1139.9	8.5356	28.920	481	1.0000	-1.0000	1.2792	1.2899	667.1	841	.731	1.2766	1.2907	667.3	840	.731
1250	2.8195-4	-1075.7	8.5880	28.920	494	1.0000	-1.0000	1.2893	1.2870	680.1	872	.731	1.2858	1.2880	680.3	870	.731
1300	2.7110-4	-1011.0	8.6388	28.920	507	1.0000	-1.0000	1.2993	1.2842	692.8	903	.730	1.2946	1.2855	693.1	899	.730
1350	2.6106-4	-945.8	8.6880	28.920	520	1.0000	-1.0000	1.3090	1.2815	705.2	933	.730	1.3030	1.2831	705.7	929	.730
1400	2.5174-4	-880.1	8.7358	28.920	533	1.0001	-1.0000	1.3188	1.2788	717.5	964	.729	1.3109	1.2809	718.0	958	.729
1450	2.4306-4	-813.9	8.7822	28.919	546	1.0001	-1.0000	1.3285	1.2763	729.4	994	.729	1.3185	1.2789	730.2	987	.729
1500	2.3495-4	-747.2	8.8275	28.919	558	1.0002	-1.0000	1.3383	1.2737	741.2	1025	.728	1.3257	1.2769	742.1	1015	.729
1550	2.2737-4	-680.1	8.8715	28.919	570	1.0003	-1.0000	1.3485	1.2712	752.7	1057	.727	1.3325	1.2751	753.8	1044	.728
1600	2.2026-4	-612.4	8.9145	28.919	582	1.0005	-1.0000	1.3591	1.2686	763.9	1090	.727	1.3390	1.2734	765.4	1072	.728
1650	2.1358-4	-544.1	8.9565	28.918	595	1.0008	-1.0000	1.3705	1.2660	775.0	1123	.725	1.3451	1.2719	776.8	1100	.727
1700	2.0730-4	-475.3	8.9976	28.917	606	1.0012	-1.0000	1.3830	1.2632	785.8	1158	.724	1.3509	1.2704	788.0	1128	.726
1750	2.0137-4	-405.8	9.0379	28.916	618	1.0018	-1.0000	1.3970	1.2603	796.3	1196	.722	1.3564	1.2690	799.1	1155	.726
1800	1.9576-4	-335.6	9.0774	28.914	630	1.0026	-1.0001	1.4133	1.2570	806.6	1236	.720	1.3616	1.2677	810.0	1183	.725
1850	1.9045-4	-264.4	9.1164	28.912	641	1.0038	-1.0001	1.4325	1.2534	816.6	1280	.718	1.3666	1.2665	820.9	1210	.724
1900	1.8542-4	-192.3	9.1549	28.908	653	1.0054	-1.0001	1.4556	1.2494	826.3	1330	.714	1.3713	1.2654	831.6	1236	.724
1950	1.8063-4	-118.8	9.1931	28.903	664	1.0077	-1.0002	1.4838	1.2448	835.6	1388	.710	1.3757	1.2644	842.2	1263	.723
2000	1.7608-4	-43.8	9.2311	28.897	675	1.0108	-1.0003	1.5185	1.2396	844.6	1455	.704	1.3798	1.2635	852.7	1289	.722
2050	1.7173-4	33.2	9.2691	28.887	686	1.0149	-1.0005	1.5615	1.2337	853.2	1535	.698	1.3838	1.2626	863.1	1315	.722
2100	1.6757-4	112.5	9.3073	28.875	697	1.0204	-1.0006	1.6145	1.2271	861.4	1631	.690	1.3875	1.2619	873.5	1341	.721
2150	1.6358-4	194.8	9.3460	28.859	708	1.0274	-1.0009	1.6796	1.2198	869.2	1748	.680	1.3909	1.2612	883.9	1366	.720
2200	1.5975-4	280.7	9.3855	28.838	718	1.0365	-1.0012	1.7588	1.2120	876.8	1890	.668	1.3942	1.2607	894.2	1391	.720
2250	1.5605-4	371.0	9.4261	28.811	729	1.0478	-1.0016	1.8538	1.2038	884.1	2061	.655	1.3972	1.2603	904.6	1416	.719
2300	1.5247-4	466.4	9.4680	28.776	739	1.0617	-1.0021	1.9660	1.1955	891.3	2267	.641	1.4000	1.2601	915.1	1441	.718
2350	1.4901-4	567.9	9.5117	28.733	749	1.0783	-1.0028	2.0959	1.1873	898.5	2511	.625	1.4026	1.2599	925.6	1466	.717
2400	1.4563-4	676.3	9.5573	28.680	759	1.0979	-1.0036	2.2434	1.1795	905.9	2798	.609	1.4049	1.2600	936.3	1490	.716
2450	1.4234-4	792.5	9.6052	28.616	769	1.1203	-1.0045	2.4072	1.1723	913.5	3129	.592	1.4071	1.2602	947.1	1515	.714
2500	1.3912-4	917.2	9.6556	28.539	779	1.1454	-1.0055	2.5854	1.1659	921.5	3507	.574	1.4091	1.2606	958.2	1540	.713
2550	1.3596-4	1051.2	9.7087	28.450	788	1.1730	-1.0068	2.7754	1.1603	929.9	3933	.556	1.4109	1.2613	969.5	1565	.711
2600	1.3286-4	1194.9	9.7645	28.346	798	1.2027	-1.0081	2.9741	1.1555	938.7	4407	.538	1.4125	1.2621	981.1	1590	.708
2650	1.2982-4	1348.7	9.8231	28.229	807	1.2344	-1.0096	3.1789	1.1515	948.0	4928	.520	1.4139	1.2631	992.9	1616	.706
2700	1.2682-4	1512.9	9.8844	28.097	816	1.2676	-1.0112	3.3872	1.1483	957.9	5496	.503	1.4153	1.2644	1005.1	1642	.703
2750	1.2386-4	1687.5	9.9485	27.950	825	1.3021	-1.0130	3.5972	1.1458	968.1	6109	.486	1.4166	1.2658	1017.6	1669	.700
2800	1.2095-4	1872.6	10.0152	27.790	834	1.3378	-1.0149	3.8077	1.1439	978.9	6764	.469	1.4177	1.2675	1030.4	1697	.697
2850	1.1808-4	2068.3	10.0845	27.615	842	1.3744	-1.0169	4.0178	1.1424	990.1	7457	.454	1.4189	1.2693	1043.6	1726	.693
2900	1.1526-4	2274.4	10.1562	27.427	851	1.4120	-1.0190	4.2270	1.1415	1001.8	8179	.440	1.4200	1.2714	1057.2	1756	.688
2950	1.1247-4	2490.9	10.2302	27.226	860	1.4503	-1.0213	4.4348	1.1410	1013.9	8922	.427	1.4212	1.2737	1071.2	1788	.683
3000	1.0973-4	2717.8	10.3064	27.012	868	1.4891	-1.0237	4.6400	1.1408	1026.4	9670	.417	1.4224	1.2762	1085.6	1821	.678

TABLE 9.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.050721; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.9159-3	-1513.8	7.5156	28.920	395	1.0000	-1.0000	1.2098	1.3117	582.6	650	.735	1.2095	1.3118	582.6	650	.735
950	3.7099-3	-1452.9	7.5814	28.920	410	1.0000	-1.0000	1.2229	1.3073	597.6	683	.734	1.2226	1.3075	597.6	683	.734
1000	3.5244-3	-1391.5	7.6444	28.920	425	1.0000	-1.0000	1.2354	1.3033	612.1	716	.733	1.2348	1.3035	612.2	716	.733
1050	3.3565-3	-1329.4	7.7050	28.920	439	1.0000	-1.0000	1.2469	1.2997	626.4	748	.732	1.2460	1.2999	626.4	747	.732
1100	3.2040-3	-1266.8	7.7632	28.920	453	1.0000	-1.0000	1.2580	1.2962	640.3	779	.732	1.2567	1.2966	640.4	778	.732
1150	3.0647-3	-1203.6	7.8194	28.920	467	1.0000	-1.0000	1.2687	1.2930	653.8	810	.731	1.2669	1.2935	654.0	809	.731
1200	2.9370-3	-1139.9	7.8736	28.920	481	1.0000	-1.0000	1.2791	1.2899	667.1	841	.731	1.2766	1.2907	667.3	840	.731
1250	2.8195-3	-1075.7	7.9260	28.920	494	1.0000	-1.0000	1.2892	1.2870	680.1	872	.731	1.2858	1.2880	680.3	870	.731
1300	2.7110-3	-1011.0	7.9768	28.920	507	1.0000	-1.0000	1.2990	1.2842	692.8	902	.730	1.2946	1.2855	693.1	899	.730
1350	2.6106-3	-945.8	8.0260	28.920	520	1.0000	-1.0000	1.3087	1.2816	705.3	933	.730	1.3030	1.2831	705.7	929	.730
1400	2.5174-3	-880.1	8.0738	28.920	533	1.0000	-1.0000	1.3181	1.2790	717.5	963	.729	1.3109	1.2809	718.0	958	.729
1450	2.4306-3	-814.0	8.1202	28.920	546	1.0001	-1.0000	1.3275	1.2765	729.5	993	.729	1.3185	1.2789	730.2	987	.729
1500	2.3496-3	-747.4	8.1653	28.920	558	1.0001	-1.0000	1.3368	1.2741	741.2	1024	.729	1.3257	1.2769	742.1	1015	.729
1550	2.2738-3	-680.3	8.2093	28.919	570	1.0002	-1.0000	1.3461	1.2717	752.8	1055	.728	1.3325	1.2751	753.8	1044	.728
1600	2.2027-3	-612.8	8.2522	28.919	582	1.0003	-1.0000	1.3555	1.2694	764.1	1086	.727	1.3390	1.2734	765.4	1072	.728
1650	2.1359-3	-544.8	8.2941	28.919	595	1.0004	-1.0000	1.3652	1.2670	775.3	1117	.726	1.3451	1.2719	776.8	1100	.727
1700	2.0731-3	-476.3	8.3350	28.919	606	1.0006	-1.0000	1.3751	1.2647	786.2	1149	.725	1.3509	1.2704	788.0	1128	.726
1750	2.0138-3	-407.2	8.3750	28.918	618	1.0008	-1.0000	1.3856	1.2623	797.0	1182	.724	1.3564	1.2690	799.1	1155	.726
1800	1.9578-3	-337.7	8.4142	28.917	630	1.0011	-1.0000	1.3968	1.2599	807.5	1216	.723	1.3617	1.2677	810.0	1183	.725
1850	1.9048-3	-267.6	8.4526	28.916	641	1.0016	-1.0000	1.4089	1.2574	817.8	1252	.722	1.3666	1.2665	820.8	1210	.724
1900	1.8546-3	-196.8	8.4904	28.915	653	1.0022	-1.0001	1.4223	1.2547	828.0	1289	.720	1.3713	1.2653	831.4	1236	.724
1950	1.8069-3	-125.3	8.5275	28.913	664	1.0031	-1.0001	1.4374	1.2519	837.9	1329	.718	1.3757	1.2643	842.0	1263	.723
2000	1.7616-3	-53.0	8.5641	28.910	675	1.0042	-1.0001	1.4546	1.2488	847.5	1371	.716	1.3799	1.2633	852.4	1289	.722
2050	1.7184-3	20.2	8.6003	28.906	686	1.0057	-1.0002	1.4746	1.2455	857.0	1418	.713	1.3839	1.2624	862.8	1315	.722
2100	1.6772-3	94.5	8.6361	28.902	697	1.0077	-1.0002	1.4979	1.2419	866.2	1470	.710	1.3876	1.2615	873.0	1341	.721
2150	1.6379-3	170.1	8.6716	28.896	708	1.0102	-1.0003	1.5254	1.2379	875.1	1528	.706	1.3911	1.2608	883.2	1366	.721
2200	1.6002-3	247.1	8.7071	28.888	718	1.0135	-1.0004	1.5579	1.2335	883.8	1595	.702	1.3945	1.2601	893.2	1391	.720
2250	1.5641-3	326.0	8.7425	28.878	729	1.0176	-1.0006	1.5962	1.2288	892.2	1671	.696	1.3976	1.2595	903.3	1416	.720
2300	1.5294-3	406.9	8.7780	28.865	740	1.0227	-1.0008	1.6413	1.2236	900.4	1759	.690	1.4005	1.2589	913.3	1441	.719
2350	1.4961-3	490.2	8.8139	28.849	750	1.0290	-1.0010	1.6942	1.2182	908.3	1861	.683	1.4033	1.2585	923.2	1465	.718
2400	1.4639-3	576.4	8.8502	28.829	760	1.0366	-1.0013	1.7556	1.2124	916.1	1979	.674	1.4059	1.2581	933.2	1490	.717
2450	1.4328-3	665.9	8.8871	28.805	770	1.0457	-1.0017	1.8262	1.2065	923.7	2116	.665	1.4083	1.2578	943.1	1514	.717
2500	1.4027-3	759.2	8.9248	28.775	780	1.0565	-1.0021	1.9062	1.2006	931.3	2272	.655	1.4105	1.2576	953.1	1538	.716
2550	1.3735-3	856.7	8.9634	28.740	790	1.0689	-1.0026	1.9958	1.1947	938.8	2450	.644	1.4126	1.2575	963.2	1562	.714
2600	1.3451-3	958.9	9.0031	28.698	800	1.0830	-1.0032	2.0944	1.1891	946.4	2651	.632	1.4145	1.2576	973.3	1586	.713
2650	1.3175-3	1066.3	9.0440	28.648	810	1.0987	-1.0039	2.2012	1.1837	954.1	2875	.620	1.4163	1.2577	983.5	1611	.712
2700	1.2905-3	1179.2	9.0862	28.591	819	1.1159	-1.0047	2.3151	1.1788	962.1	3123	.607	1.4179	1.2580	993.9	1634	.711
2750	1.2641-3	1297.9	9.1298	28.525	829	1.1346	-1.0056	2.4345	1.1744	970.2	3394	.594	1.4194	1.2584	1004.3	1658	.709
2800	1.2383-3	1422.7	9.1747	28.451	838	1.1544	-1.0066	2.5578	1.1705	978.7	3688	.581	1.4208	1.2590	1015.0	1682	.708
2850	1.2130-3	1553.7	9.2211	28.368	847	1.1751	-1.0076	2.6832	1.1672	987.4	4004	.568	1.4220	1.2596	1025.7	1706	.706
2900	1.1883-3	1691.0	9.2689	28.277	856	1.1966	-1.0087	2.8093	1.1643	996.4	4342	.554	1.4231	1.2604	1036.7	1731	.704
2950	1.1640-3	1834.6	9.3180	28.177	865	1.2186	-1.0099	2.9346	1.1620	1005.7	4701	.540	1.4242	1.2613	1047.8	1755	.702
3000	1.1402-3	1984.5	9.3683	28.068	874	1.2410	-1.0112	3.0582	1.1601	1015.4	5080	.526	1.4252	1.2624	1059.2	1780	.700

TABLE 9.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.050721; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	1.9580-2	-1513.8	7.0529	28.920	395	1.0000	-1.0000	1.2098	1.3117	582.6	650	.735	1.2095	1.3118	582.6	650	.735
950	1.8549-2	-1452.9	7.1187	28.920	410	1.0000	-1.0000	1.2229	1.3073	597.6	683	.734	1.2226	1.3075	597.6	683	.734
1000	1.7622-2	-1391.5	7.1817	28.920	425	1.0000	-1.0000	1.2354	1.3033	612.1	716	.733	1.2348	1.3035	612.2	716	.733
1050	1.6783-2	-1329.4	7.2423	28.920	439	1.0000	-1.0000	1.2469	1.2997	626.4	748	.732	1.2460	1.2999	626.4	747	.732
1100	1.6020-2	-1266.8	7.3005	28.920	453	1.0000	-1.0000	1.2580	1.2962	640.3	779	.732	1.2567	1.2966	640.4	778	.732
1150	1.5323-2	-1203.6	7.3567	28.920	467	1.0000	-1.0000	1.2687	1.2930	653.8	810	.731	1.2669	1.2935	654.0	809	.731
1200	1.4685-2	-1139.9	7.4109	28.920	481	1.0000	-1.0000	1.2791	1.2899	667.1	841	.731	1.2766	1.2907	667.3	840	.731
1250	1.4097-2	-1075.7	7.4633	28.920	494	1.0000	-1.0000	1.2892	1.2870	680.1	872	.731	1.2858	1.2880	680.3	870	.731
1300	1.3555-2	-1011.0	7.5141	28.920	507	1.0000	-1.0000	1.2990	1.2842	692.8	902	.730	1.2946	1.2855	693.1	899	.730
1350	1.3053-2	-945.8	7.5633	28.920	520	1.0000	-1.0000	1.3085	1.2816	705.3	933	.730	1.3030	1.2831	705.7	929	.730
1400	1.2587-2	-880.2	7.6110	28.920	533	1.0000	-1.0000	1.3179	1.2790	717.5	963	.729	1.3109	1.2809	718.0	958	.729
1450	1.2153-2	-814.0	7.6575	28.920	546	1.0000	-1.0000	1.3271	1.2766	729.5	993	.729	1.3185	1.2789	730.2	987	.729
1500	1.1748-2	-747.5	7.7026	28.920	558	1.0001	-1.0000	1.3362	1.2742	741.3	1023	.729	1.3257	1.2769	742.1	1015	.729
1550	1.1369-2	-680.4	7.7466	28.920	570	1.0001	-1.0000	1.3452	1.2719	752.8	1054	.728	1.3325	1.2751	753.8	1044	.728
1600	1.1014-2	-612.9	7.7894	28.920	582	1.0001	-1.0000	1.3542	1.2696	764.2	1085	.727	1.3390	1.2734	765.4	1072	.728
1650	1.0680-2	-545.0	7.8312	28.919	595	1.0002	-1.0000	1.3633	1.2674	775.4	1115	.727	1.3451	1.2718	776.7	1100	.727
1700	1.0366-2	-476.6	7.8721	28.919	606	1.0003	-1.0000	1.3724	1.2652	786.4	1147	.726	1.3509	1.2704	788.0	1128	.726
1750	1.0069-2	-407.7	7.9120	28.919	618	1.0005	-1.0000	1.3817	1.2630	797.2	1178	.725	1.3564	1.2690	799.0	1155	.726
1800	9.7894-3	-338.4	7.9510	28.918	630	1.0007	-1.0000	1.3914	1.2609	807.8	1210	.724	1.3617	1.2677	810.0	1183	.725
1850	9.5246-3	-268.6	7.9893	28.918	641	1.0009	-1.0000	1.4014	1.2587	818.2	1243	.723	1.3666	1.2664	820.8	1210	.724
1900	9.2737-3	-198.3	8.0268	28.917	653	1.0013	-1.0000	1.4120	1.2565	828.5	1276	.722	1.3713	1.2653	831.4	1236	.724
1950	9.0356-3	-127.4	8.0636	28.916	664	1.0017	-1.0001	1.4233	1.2542	838.6	1311	.721	1.3757	1.2642	841.9	1263	.723
2000	8.8093-3	-55.9	8.0998	28.914	675	1.0023	-1.0001	1.4355	1.2518	848.5	1347	.719	1.3799	1.2632	852.3	1289	.723
2050	8.5938-3	16.2	8.1354	28.912	686	1.0031	-1.0001	1.4490	1.2493	858.2	1385	.718	1.3839	1.2623	862.6	1315	.722
2100	8.3885-3	89.0	8.1705	28.910	697	1.0041	-1.0001	1.4640	1.2467	867.7	1425	.716	1.3876	1.2614	872.8	1341	.721
2150	8.1925-3	162.6	8.2052	28.907	708	1.0053	-1.0002	1.4809	1.2440	877.1	1469	.714	1.3912	1.2606	882.9	1366	.721
2200	8.0052-3	237.1	8.2394	28.903	719	1.0069	-1.0002	1.5001	1.2410	886.2	1516	.711	1.3945	1.2599	892.9	1391	.720
2250	7.8259-3	312.7	8.2734	28.898	729	1.0090	-1.0003	1.5220	1.2379	895.2	1567	.708	1.3977	1.2592	902.9	1416	.720
2300	7.6541-3	389.4	8.3071	28.891	740	1.0115	-1.0004	1.5470	1.2345	903.9	1623	.705	1.4007	1.2586	912.7	1441	.719
2350	7.4891-3	467.4	8.3407	28.883	750	1.0146	-1.0005	1.5758	1.2308	912.5	1686	.701	1.4035	1.2580	922.5	1465	.718
2400	7.3306-3	547.0	8.3742	28.873	760	1.0184	-1.0007	1.6089	1.2269	920.8	1757	.696	1.4062	1.2575	932.2	1490	.718
2450	7.1779-3	628.4	8.4077	28.861	771	1.0229	-1.0008	1.6468	1.2228	929.0	1836	.691	1.4087	1.2571	941.9	1514	.717
2500	7.0307-3	711.8	8.4414	28.846	781	1.0284	-1.0011	1.6899	1.2185	937.0	1925	.685	1.4110	1.2567	951.6	1538	.716
2550	6.8886-3	797.5	8.4754	28.828	791	1.0348	-1.0013	1.7387	1.2140	944.9	2026	.679	1.4132	1.2564	961.3	1562	.715
2600	6.7511-3	885.8	8.5096	28.807	801	1.0423	-1.0016	1.7934	1.2095	952.7	2138	.672	1.4153	1.2562	970.9	1586	.714
2650	6.6178-3	976.9	8.5444	28.781	811	1.0509	-1.0020	1.8542	1.2049	960.4	2264	.664	1.4172	1.2560	980.6	1610	.713
2700	6.4885-3	1071.3	8.5796	28.751	820	1.0606	-1.0024	1.9209	1.2003	968.1	2404	.656	1.4190	1.2560	990.3	1634	.712
2750	6.3629-3	1169.1	8.6155	28.716	830	1.0715	-1.0029	1.9933	1.1959	975.8	2558	.647	1.4207	1.2560	1000.0	1657	.711
2800	6.2405-3	1270.7	8.6521	28.676	839	1.0835	-1.0035	2.0707	1.1917	983.6	2726	.638	1.4222	1.2561	1009.8	1681	.710
2850	6.1213-3	1376.3	8.6895	28.631	849	1.0965	-1.0041	2.1525	1.1878	991.5	2909	.628	1.4237	1.2562	1019.7	1704	.709
2900	6.0049-3	1486.0	8.7277	28.579	858	1.1105	-1.0048	2.2376	1.1841	999.5	3106	.618	1.4250	1.2565	1029.6	1727	.708
2950	5.8913-3	1600.1	8.7667	28.522	868	1.1252	-1.0056	2.3251	1.1809	1007.7	3317	.608	1.4262	1.2569	1039.7	1751	.707
3000	5.7802-3	1718.5	8.8065	28.458	877	1.1406	-1.0064	2.4138	1.1780	1016.1	3540	.598	1.4274	1.2574	1049.8	1774	.705

TABLE 9C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.050721; EQUIV.RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.957-5	-2468.1	7.1401	28.920	1.0565	1.835-5	30.123	130	1.000	-1.000	0.9813	1.3913	277	173	.734	200
220	1.774-5	-2443.8	7.2559	28.920	1.5589	1.667-5	30.093	141	1.000	-1.000	0.9847	1.3900	291	189	.731	220
240	1.587-5	-2383.4	7.5161	28.920	5.8544	1.513-5	29.800	149	1.000	-1.000	0.9998	1.3871	305	202	.735	240
						PRESSURE = 0.10 ATM										
200	1.957-4	-2468.4	6.5428	28.920	1.0214	1.836-4	30.125	130	1.000	-1.000	0.9813	1.3913	277	173	.734	200
220	1.779-4	-2447.5	6.6421	28.920	1.0812	1.669-4	30.122	141	1.000	-1.000	0.9835	1.3902	291	190	.730	220
240	1.626-4	-2423.0	6.7487	28.920	1.4984	1.528-4	30.092	151	1.000	-1.000	0.9871	1.3887	303	206	.727	240
260	1.476-4	-2375.1	6.9390	28.920	3.9478	1.401-4	29.892	160	1.000	-1.000	0.9985	1.3862	317	219	.730	260
280	1.262-4	-2213.1	7.5353	28.920	12.5052	1.260-4	28.945	161	1.000	-1.000	1.0440	1.3796	333	224	.751	280
						PRESSURE = 1.00 ATM										
200	1.957-3	-2468.4	5.9466	28.920	1.0179	1.836-3	30.125	130	1.000	-1.000	0.9812	1.3913	277	173	.734	200
220	1.779-3	-2447.9	6.0443	28.920	1.0337	1.669-3	30.125	141	1.000	-1.000	0.9833	1.3902	291	190	.730	220
240	1.630-3	-2426.8	6.1359	28.920	1.0855	1.530-3	30.122	152	1.000	-1.000	0.9859	1.3889	303	206	.727	240
260	1.502-3	-2403.3	6.2300	28.920	1.3315	1.411-3	30.102	162	1.000	-1.000	0.9894	1.3873	316	221	.724	260
280	1.384-3	-2349.9	6.4266	28.920	2.1293	1.306-3	30.007	171	1.000	-1.000	0.9964	1.3852	328	235	.725	280
298	1.272-3	-2298.0	6.6057	28.920	3.8554	1.216-3	29.748	178	1.000	-1.000	1.0106	1.3823	339	246	.731	298
300	1.259-3	-2290.6	6.6304	28.920	4.1381	1.207-3	29.705	178	1.000	-1.000	1.0129	1.3819	341	247	.732	300
320	1.101-3	-2167.6	7.0260	28.920	1.0521	1.101-3	28.920	181	1.000	-1.000	1.0521	1.3760	356	253	.750	320
						PRESSURE = 10.00 ATM										
200	1.954-2	-2468.4	5.3505	28.920	1.0175	1.836-2	30.125	130	1.000	-1.000	0.9812	1.3913	277	173	.734	200
220	1.777-2	-2447.9	5.4480	28.920	1.0290	1.669-2	30.125	141	1.000	-1.000	0.9833	1.3902	291	190	.730	220
240	1.629-2	-2427.2	5.5381	28.920	1.0445	1.530-2	30.125	152	1.000	-1.000	0.9857	1.3889	303	206	.726	240
260	1.504-2	-2406.0	5.6229	28.920	1.0798	1.412-2	30.123	162	1.000	-1.000	0.9885	1.3874	316	222	.724	260
280	1.395-2	-2362.3	5.7841	28.920	1.2828	1.311-2	30.113	172	1.000	-1.000	0.9918	1.3858	327	237	.722	280
298	1.308-2	-2337.7	5.8689	28.920	1.4434	1.230-2	30.087	181	1.000	-1.000	0.9959	1.3841	338	250	.722	298
300	1.299-2	-2335.0	5.8779	28.920	1.4683	1.222-2	30.083	182	1.000	-1.000	0.9963	1.3839	339	251	.722	300
320	1.210-2	-2301.9	5.9846	28.920	1.8983	1.142-2	30.000	191	1.000	-1.000	1.0034	1.3816	350	264	.725	320
340	1.120-2	-2256.1	6.1233	28.920	2.7860	1.068-2	29.803	198	1.000	-1.000	1.0157	1.3787	362	276	.730	340
360	1.021-2	-2184.9	6.3262	28.920	4.5190	9.950-3	29.393	203	1.000	-1.000	1.0381	1.3745	374	286	.740	360
380	9.275-3	-2104.1	6.5458	28.920	1.0644	9.275-3	28.920	208	1.000	-1.000	1.0644	1.3701	387	296	.749	380
						PRESSURE = 50.00 ATM										
200	9.720-2	-2468.4	4.9338	28.920	1.0175	9.178-2	30.125	130	1.000	-1.000	0.9812	1.3913	277	173	.734	200
220	8.842-2	-2447.9	5.0313	28.920	1.0285	8.344-2	30.125	141	1.000	-1.000	0.9833	1.3902	291	190	.730	220
240	8.109-2	-2427.2	5.1213	28.920	1.0408	7.648-2	30.125	152	1.000	-1.000	0.9857	1.3889	303	206	.726	240
260	7.488-2	-2406.3	5.2052	28.920	1.0575	7.060-2	30.124	162	1.000	-1.000	0.9884	1.3874	316	222	.724	260
280	6.958-2	-2363.3	5.3633	28.920	1.2089	6.555-2	30.123	172	1.000	-1.000	0.9914	1.3858	327	237	.722	280
298	6.533-2	-2341.1	5.4401	28.920	1.2419	6.155-2	30.117	181	1.000	-1.000	0.9946	1.3842	338	250	.722	298
300	6.492-2	-2338.8	5.4478	28.920	1.2470	6.117-2	30.117	182	1.000	-1.000	0.9949	1.3841	339	251	.722	300
320	6.080-2	-2313.1	5.5307	28.920	1.3333	5.732-2	30.100	192	1.000	-1.000	0.9991	1.3821	350	265	.722	320
340	5.705-2	-2285.0	5.6161	28.920	1.5028	5.387-2	30.061	200	1.000	-1.000	1.0044	1.3800	360	278	.724	340
360	5.354-2	-2252.2	5.7097	28.920	1.8027	5.074-2	29.979	209	1.000	-1.000	1.0119	1.3776	371	291	.726	360
380	5.009-2	-2211.6	5.8193	28.920	2.2944	4.782-2	29.824	216	1.000	-1.000	1.0229	1.3747	382	303	.730	380
400	4.654-2	-2158.5	5.9552	28.920	3.0642	4.502-2	29.556	223	1.000	-1.000	1.0393	1.3711	393	314	.736	400
420	4.273-2	-2086.2	6.1313	28.920	4.2515	4.226-2	29.125	227	1.000	-1.000	1.0639	1.3667	405	325	.744	420

TABLE 10A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.067628; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.9056;
DRY AIR; GASEOUS COMPOSITION: CO2= .13083; H2O= .13054; N2= .72988; O2= .00000; AR= .00875

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7613-3	8.8066-2	-2976.4	7.8377	7.1754	6.5131	5.8508	5.3879	1.0436	1.3805	281.8	114	152	.7843	200
210	1.6774-3	8.3872-2	-2965.9	7.8887	7.2264	6.5641	5.9017	5.4388	1.0451	1.3797	288.7	119	160	.7797	210
220	1.6012-3	8.0060-2	-2955.5	7.9373	7.2750	6.6127	5.9504	5.4875	1.0467	1.3789	295.4	125	169	.7757	220
230	1.5316-3	7.6579-2	-2945.0	7.9839	7.3216	6.6593	5.9970	5.5340	1.0484	1.3781	301.9	130	177	.7722	230
240	1.4678-3	7.3388-2	-2934.5	8.0286	7.3663	6.7039	6.0416	5.5787	1.0502	1.3772	308.3	136	185	.7692	240
250	1.4091-3	7.0453-2	-2924.0	8.0715	7.4092	6.7469	6.0845	5.6216	1.0520	1.3763	314.6	141	193	.7667	250
260	1.3549-3	6.7743-2	-2913.5	8.1128	7.4505	6.7881	6.1258	5.6629	1.0539	1.3754	320.7	146	201	.7646	260
270	1.3047-3	6.5234-2	-2902.9	8.1526	7.4903	6.8280	6.1656	5.7027	1.0559	1.3744	326.7	151	209	.7629	270
280	1.2581-3	6.2904-2	-2892.3	8.1910	7.5287	6.8664	6.2041	5.7411	1.0579	1.3734	332.6	156	217	.7616	280
290	1.2147-3	6.0735-2	-2881.7	8.2282	7.5659	6.9036	6.2412	5.7783	1.0600	1.3724	338.4	161	225	.7606	290
298	1.1815-3	5.9075-2	-2873.1	8.2576	7.5953	6.9330	6.2706	5.8077	1.0617	1.3716	343.0	165	231	.7601	298
300	1.1742-3	5.8711-2	-2871.1	8.2642	7.6018	6.9395	6.2772	5.8143	1.0621	1.3714	344.0	166	232	.7600	300
310	1.1363-3	5.6817-2	-2860.5	8.2990	7.6367	6.9744	6.3121	5.8491	1.0643	1.3703	349.6	171	239	.7599	310
320	1.1008-3	5.5041-2	-2849.8	8.3328	7.6705	7.0082	6.3459	5.8830	1.0666	1.3693	355.0	176	247	.7600	320
330	1.0675-3	5.3373-2	-2839.2	8.3657	7.7034	7.0411	6.3788	5.9158	1.0689	1.3682	360.4	181	254	.7602	330
340	1.0361-3	5.1803-2	-2828.5	8.3976	7.7353	7.0730	6.4107	5.9478	1.0712	1.3671	365.6	185	261	.7604	340
350	1.0065-3	5.0323-2	-2817.7	8.4287	7.7664	7.1041	6.4418	5.9788	1.0736	1.3660	370.8	190	268	.7606	350
360	9.7851-4	4.8925-2	-2807.0	8.4590	7.7967	7.1344	6.4721	6.0091	1.0761	1.3648	375.9	194	275	.7600	360
370	9.5206-4	4.7603-2	-2796.2	8.4885	7.8262	7.1639	6.5016	6.0386	1.0786	1.3637	381.0	199	283	.7594	370
380	9.2701-4	4.6350-2	-2785.4	8.5173	7.8550	7.1927	6.5304	6.0674	1.0811	1.3625	385.9	203	290	.7587	380
390	9.0324-4	4.5162-2	-2774.6	8.5454	7.8831	7.2208	6.5585	6.0956	1.0837	1.3613	390.8	208	297	.7579	390
400	8.8066-4	4.4033-2	-2763.8	8.5729	7.9106	7.2483	6.5860	6.1230	1.0863	1.3601	395.6	212	305	.7572	400
410	8.5918-4	4.2959-2	-2752.9	8.5998	7.9374	7.2751	6.6128	6.1499	1.0890	1.3589	400.3	217	312	.7569	410
420	8.3872-4	4.1936-2	-2742.0	8.6260	7.9637	7.3014	6.6391	6.1762	1.0917	1.3577	405.0	221	319	.7566	420
430	8.1922-4	4.0961-2	-2731.0	8.6518	7.9894	7.3271	6.6648	6.2019	1.0944	1.3565	409.6	225	326	.7564	430
440	8.0060-4	4.0030-2	-2720.1	8.6770	8.0146	7.3523	6.6900	6.2271	1.0972	1.3553	414.2	229	333	.7563	440
450	7.8281-4	3.9140-2	-2709.1	8.7016	8.0393	7.3770	6.7147	6.2518	1.1000	1.3541	418.7	233	340	.7562	450
460	7.6579-4	3.8289-2	-2698.1	8.7258	8.0635	7.4012	6.7389	6.2760	1.1029	1.3528	423.1	238	346	.7561	460
470	7.4950-4	3.7475-2	-2687.0	8.7496	8.0873	7.4250	6.7627	6.2997	1.1057	1.3516	427.5	242	353	.7561	470
480	7.3388-4	3.6694-2	-2676.0	8.7729	8.1106	7.4483	6.7860	6.3230	1.1086	1.3504	431.8	246	360	.7562	480
490	7.1890-4	3.5945-2	-2664.9	8.7958	8.1335	7.4712	6.8089	6.3459	1.1115	1.3491	436.1	250	367	.7563	490
500	7.0453-4	3.5226-2	-2653.7	8.8183	8.1560	7.4937	6.8313	6.3684	1.1145	1.3479	440.3	254	374	.7563	500
510	6.9071-4	3.4536-2	-2642.6	8.8404	8.1781	7.5158	6.8534	6.3905	1.1175	1.3466	444.5	257	380	.7561	510
520	6.7743-4	3.3871-2	-2631.4	8.8621	8.1998	7.5375	6.8752	6.4122	1.1205	1.3454	448.6	261	387	.7559	520
530	6.6465-4	3.3232-2	-2620.2	8.8835	8.2212	7.5588	6.8965	6.4336	1.1235	1.3441	452.7	265	394	.7556	530
540	6.5234-4	3.2617-2	-2608.9	8.9045	8.2422	7.5799	6.9176	6.4546	1.1265	1.3429	456.7	269	401	.7553	540
550	6.4048-4	3.2024-2	-2597.6	8.9252	8.2629	7.6006	6.9383	6.4753	1.1296	1.3417	460.7	273	408	.7550	550
560	6.2904-4	3.1452-2	-2586.3	8.9456	8.2833	7.6210	6.9586	6.4957	1.1326	1.3404	464.7	277	415	.7546	560
570	6.1801-4	3.0900-2	-2575.0	8.9657	8.3033	7.6410	6.9787	6.5158	1.1357	1.3392	468.6	280	422	.7543	570
580	6.0735-4	3.0368-2	-2563.6	8.9854	8.3231	7.6608	6.9985	6.5356	1.1388	1.3379	472.5	284	429	.7539	580
590	5.9706-4	2.9853-2	-2552.2	9.0049	8.3426	7.6803	7.0180	6.5550	1.1419	1.3367	476.3	288	436	.7535	590

TABLE 10A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.067628; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.9056;
DRY AIR; GASEOUS COMPOSITION: CO2= .13083; H2O= .13054; N2= .72988; O2= .00000; AR= .00875

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8711-4	2.9355-2	-2540.8	9.0242	8.3618	7.6995	7.0372	6.5743	1.1450	1.3355	480.1	292	443	.7531	600
610	5.7748-4	2.8874-2	-2529.3	9.0431	8.3808	7.7185	7.0562	6.5932	1.1482	1.3343	483.8	295	450	.7526	610
620	5.6817-4	2.8408-2	-2517.8	9.0618	8.3995	7.7372	7.0749	6.6119	1.1513	1.3331	487.6	299	457	.7522	620
630	5.5915-4	2.7957-2	-2506.3	9.0802	8.4179	7.7556	7.0933	6.6304	1.1544	1.3318	491.3	302	465	.7517	630
640	5.5041-4	2.7521-2	-2494.7	9.0985	8.4361	7.7738	7.1115	6.6486	1.1576	1.3306	494.9	306	472	.7512	640
650	5.4194-4	2.7097-2	-2483.1	9.1164	8.4541	7.7918	7.1295	6.6665	1.1607	1.3294	498.6	310	479	.7507	650
660	5.3373-4	2.6687-2	-2471.5	9.1342	8.4719	7.8095	7.1472	6.6843	1.1639	1.3283	502.2	313	486	.7502	660
670	5.2577-4	2.6288-2	-2459.9	9.1517	8.4894	7.8271	7.1647	6.7018	1.1670	1.3271	505.7	317	493	.7497	670
680	5.1803-4	2.5902-2	-2448.2	9.1690	8.5067	7.8444	7.1821	6.7191	1.1702	1.3259	509.3	320	500	.7492	680
690	5.1053-4	2.5526-2	-2436.4	9.1861	8.5238	7.8615	7.1992	6.7362	1.1734	1.3248	512.8	324	507	.7487	690
700	5.0323-4	2.5162-2	-2424.7	9.2030	8.5407	7.8784	7.2161	6.7531	1.1765	1.3236	516.2	327	514	.7483	700
710	4.9615-4	2.4807-2	-2412.9	9.2197	8.5574	7.8951	7.2328	6.7698	1.1796	1.3225	519.7	331	521	.7478	710
720	4.8925-4	2.4463-2	-2401.1	9.2362	8.5739	7.9116	7.2493	6.7864	1.1828	1.3213	523.1	334	529	.7473	720
730	4.8255-4	2.4128-2	-2389.3	9.2526	8.5903	7.9280	7.2656	6.8027	1.1859	1.3202	526.5	337	536	.7468	730
740	4.7603-4	2.3802-2	-2377.4	9.2687	8.6064	7.9441	7.2818	6.8189	1.1891	1.3191	529.9	341	543	.7464	740
750	4.6968-4	2.3484-2	-2365.5	9.2847	8.6224	7.9601	7.2978	6.8348	1.1922	1.3180	533.2	344	550	.7459	750
760	4.6350-4	2.3175-2	-2353.5	9.3005	8.6382	7.9759	7.3136	6.8507	1.1953	1.3169	536.5	347	557	.7455	760
770	4.5748-4	2.2874-2	-2341.6	9.3162	8.6539	7.9916	7.3292	6.8663	1.1984	1.3158	539.8	351	564	.7451	770
780	4.5162-4	2.2581-2	-2329.6	9.3317	8.6693	8.0070	7.3447	6.8818	1.2015	1.3148	543.1	354	571	.7446	780
790	4.4590-4	2.2295-2	-2317.5	9.3470	8.6847	8.0224	7.3600	6.8971	1.2045	1.3137	546.4	357	578	.7442	790
800	4.4033-4	2.2016-2	-2305.5	9.3622	8.6998	8.0375	7.3752	6.9123	1.2076	1.3127	549.6	361	585	.7438	800
810	4.3489-4	2.1745-2	-2293.4	9.3772	8.7149	8.0526	7.3902	6.9273	1.2106	1.3116	552.8	364	592	.7435	810
820	4.2959-4	2.1479-2	-2281.3	9.3921	8.7297	8.0674	7.4051	6.9422	1.2137	1.3106	556.0	367	599	.7432	820
830	4.2441-4	2.1221-2	-2269.1	9.4068	8.7445	8.0822	7.4198	6.9569	1.2167	1.3096	559.2	370	606	.7429	830
840	4.1936-4	2.0968-2	-2256.9	9.4214	8.7591	8.0967	7.4344	6.9715	1.2197	1.3086	562.3	373	613	.7426	840
850	4.1443-4	2.0721-2	-2244.7	9.4358	8.7735	8.1112	7.4489	6.9859	1.2226	1.3076	565.4	377	620	.7423	850
860	4.0961-4	2.0480-2	-2232.5	9.4501	8.7878	8.1255	7.4632	7.0003	1.2256	1.3067	568.5	380	627	.7420	860
870	4.0490-4	2.0245-2	-2220.2	9.4643	8.8020	8.1397	7.4774	7.0144	1.2285	1.3057	571.6	383	634	.7418	870
880	4.0030-4	2.0015-2	-2207.9	9.4784	8.8161	8.1538	7.4914	7.0285	1.2314	1.3048	574.7	386	641	.7415	880
890	3.9580-4	1.9790-2	-2195.6	9.4923	8.8300	8.1677	7.5054	7.0424	1.2343	1.3038	577.7	389	648	.7412	890
900	3.9140-4	1.9570-2	-2183.2	9.5061	8.8438	8.1815	7.5192	7.0562	1.2372	1.3029	580.8	392	655	.7410	900
910	3.8710-4	1.9355-2	-2170.8	9.5198	8.8575	8.1952	7.5329	7.0699	1.2400	1.3020	583.8	395	662	.7408	910
920	3.8289-4	1.9145-2	-2158.4	9.5334	8.8711	8.2087	7.5464	7.0835	1.2428	1.3011	586.8	398	669	.7405	920
930	3.7878-4	1.8939-2	-2146.0	9.5468	8.8845	8.2222	7.5599	7.0969	1.2456	1.3003	589.8	401	675	.7403	930
940	3.7475-4	1.8737-2	-2133.5	9.5602	8.8978	8.2355	7.5732	7.1103	1.2483	1.2994	592.7	405	682	.7401	940
950	3.7080-4	1.8540-2	-2121.0	9.5734	8.9111	8.2488	7.5864	7.1235	1.2510	1.2986	595.7	408	689	.7398	950
960	3.6694-4	1.8347-2	-2108.5	9.5865	8.9242	8.2619	7.5996	7.1366	1.2537	1.2977	598.6	411	696	.7396	960
970	3.6316-4	1.8158-2	-2096.0	9.5995	8.9372	8.2749	7.6126	7.1496	1.2563	1.2969	601.5	414	703	.7394	970
980	3.5945-4	1.7973-2	-2083.4	9.6124	8.9501	8.2878	7.6255	7.1625	1.2590	1.2961	604.5	417	709	.7392	980
990	3.5582-4	1.7791-2	-2070.8	9.6252	8.9629	8.3006	7.6383	7.1753	1.2616	1.2953	607.3	419	716	.7390	990

TABLE 10A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.067628; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.9056;
DRY AIR; GASEOUS COMPOSITION: CO2= .13083; H2O= .13054; N2= .72988; O2= .00000; AR= .00875

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
1000	3.5226-4	1.7613-2	-2058.1	9.6379	8.9756	8.3133	7.6509	7.1880	1.2641	1.2946	610.2	422	723	.7388	1000
1050	3.3549-4	1.6774-2	-1994.6	9.6999	9.0375	8.3752	7.7129	7.2500	1.2762	1.2910	624.4	437	756	.7379	1050
1100	3.2024-4	1.6012-2	-1930.5	9.7595	9.0972	8.4349	7.7726	7.3096	1.2877	1.2876	638.3	451	788	.7371	1100
1150	3.0632-4	1.5316-2	-1865.9	9.8170	9.1547	8.4923	7.8300	7.3671	1.2986	1.2845	651.8	465	821	.7363	1150
1200	2.9355-4	1.4678-2	-1800.7	9.8725	9.2102	8.5478	7.8855	7.4226	1.3091	1.2816	665.1	479	852	.7357	1200
1250	2.8181-4	1.4091-2	-1735.0	9.9261	9.2638	8.6015	7.9392	7.4762	1.3190	1.2789	678.1	493	884	.7350	1250
1300	2.7097-4	1.3549-2	-1668.8	9.9780	9.3157	8.6534	7.9911	7.5281	1.3284	1.2764	690.8	506	915	.7344	1300
1350	2.6094-4	1.3047-2	-1602.1	10.0283	9.3660	8.7037	8.0414	7.5784	1.3374	1.2740	703.4	519	946	.7339	1350
1400	2.5162-4	1.2581-2	-1535.1	10.0771	9.4148	8.7525	8.0902	7.6272	1.3460	1.2718	715.6	532	977	.7333	1400
1450	2.4294-4	1.2147-2	-1467.6	10.1245	9.4622	8.7999	8.1376	7.6746	1.3541	1.2697	727.7	545	1007	.7327	1450
1500	2.3484-4	1.1742-2	-1399.7	10.1705	9.5082	8.8459	8.1836	7.7207	1.3618	1.2678	739.6	558	1037	.7321	1500
1550	2.2727-4	1.1363-2	-1331.4	10.2153	9.5530	8.8907	8.2284	7.7654	1.3692	1.2660	751.3	570	1067	.7314	1550
1600	2.2016-4	1.1008-2	-1262.7	10.2589	9.5966	8.9343	8.2720	7.8090	1.3761	1.2643	762.8	583	1097	.7307	1600
1650	2.1349-4	1.0675-2	-1193.8	10.3013	9.6390	8.9767	8.3144	7.8515	1.3827	1.2627	774.1	595	1127	.7300	1650
1700	2.0721-4	1.0361-2	-1124.5	10.3427	9.6804	9.0181	8.3558	7.8928	1.3889	1.2612	785.3	607	1156	.7292	1700
1750	2.0129-4	1.0065-2	-1054.9	10.3831	9.7207	9.0584	8.3961	7.9332	1.3949	1.2598	796.3	619	1185	.7285	1750
1800	1.9570-4	9.7851-3	-985.0	10.4224	9.7601	9.0978	8.4355	7.9726	1.4005	1.2585	807.2	631	1214	.7277	1800
1850	1.9041-4	9.5206-3	-914.8	10.4609	9.7986	9.1363	8.4739	8.0110	1.4058	1.2572	817.9	642	1242	.7270	1850
1900	1.8540-4	9.2701-3	-844.4	10.4984	9.8361	9.1738	8.5115	8.0486	1.4108	1.2561	828.5	654	1270	.7262	1900
1950	1.8065-4	9.0324-3	-773.8	10.5351	9.8728	9.2105	8.5482	8.0853	1.4156	1.2550	839.0	665	1298	.7254	1950
2000	1.7613-4	8.8066-3	-702.9	10.5710	9.9087	9.2464	8.5841	8.1212	1.4201	1.2540	849.4	677	1326	.7246	2000
2050	1.7184-4	8.5918-3	-631.8	10.6062	9.9438	9.2815	8.6192	8.1563	1.4243	1.2530	859.6	688	1354	.7239	2050
2100	1.6774-4	8.3872-3	-560.4	10.6405	9.9782	9.3159	8.6536	8.1906	1.4284	1.2522	869.7	699	1381	.7232	2100
2150	1.6384-4	8.1922-3	-488.9	10.6742	10.0119	9.3496	8.6872	8.2243	1.4322	1.2513	879.7	710	1408	.7225	2150
2200	1.6012-4	8.0060-3	-417.2	10.7072	10.0448	9.3825	8.7202	8.2573	1.4358	1.2505	889.6	721	1434	.7217	2200
2250	1.5656-4	7.8281-3	-345.4	10.7395	10.0771	9.4148	8.7525	8.2896	1.4392	1.2498	899.4	732	1461	.7209	2250
2300	1.5316-4	7.6579-3	-273.3	10.7711	10.1088	9.4465	8.7842	8.3212	1.4425	1.2491	909.0	742	1487	.7201	2300
2350	1.4990-4	7.4950-3	-201.1	10.8022	10.1399	9.4776	8.8152	8.3523	1.4455	1.2484	918.6	753	1513	.7193	2350
2400	1.4678-4	7.3388-3	-128.8	10.8326	10.1703	9.5080	8.8457	8.3828	1.4485	1.2478	928.1	764	1540	.7184	2400
2450	1.4378-4	7.1890-3	-56.3	10.8625	10.2002	9.5379	8.8756	8.4127	1.4512	1.2472	937.5	774	1565	.7176	2450
2500	1.4091-4	7.0453-3	16.4	10.8919	10.2296	9.5673	8.9049	8.4420	1.4539	1.2466	946.8	784	1591	.7167	2500
2550	1.3814-4	6.9071-3	89.1	10.9207	10.2584	9.5961	8.9338	8.4708	1.4564	1.2461	956.0	795	1617	.7157	2550
2600	1.3549-4	6.7743-3	162.0	10.9490	10.2867	9.6244	8.9621	8.4991	1.4587	1.2456	965.2	805	1643	.7146	2600
2650	1.3293-4	6.6465-3	235.0	10.9768	10.3145	9.6522	8.9899	8.5269	1.4610	1.2451	974.2	815	1668	.7137	2650
2700	1.3047-4	6.5234-3	308.1	11.0041	10.3418	9.6795	9.0172	8.5543	1.4632	1.2447	983.2	825	1693	.7127	2700
2750	1.2810-4	6.4048-3	381.3	11.0310	10.3687	9.7064	9.0441	8.5811	1.4653	1.2443	992.1	835	1718	.7118	2750
2800	1.2581-4	6.2904-3	454.6	11.0574	10.3951	9.7328	9.0705	8.6075	1.4673	1.2438	1000.9	845	1743	.7108	2800
2850	1.2360-4	6.1801-3	528.0	11.0834	10.4211	9.7588	9.0965	8.6335	1.4692	1.2434	1009.6	854	1768	.7100	2850
2900	1.2147-4	6.0735-3	601.5	11.1090	10.4467	9.7844	9.1220	8.6591	1.4710	1.2431	1018.3	864	1793	.7091	2900
2950	1.1941-4	5.9706-3	675.1	11.1341	10.4718	9.8095	9.1472	8.6843	1.4728	1.2427	1026.9	874	1817	.7083	2950
3000	1.1742-4	5.8711-3	748.8	11.1589	10.4966	9.8343	9.1720	8.7090	1.4745	1.2424	1035.4	883	1841	.7075	3000

TABLE 10.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.067628; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9140-6	-2183.2	9.5061	28.906	392	1.0000	-1.0000	1.2372	1.3029	580.8	655	.741	1.2372	1.3029	580.8	655	.741
950	3.7080-6	-2121.0	9.5734	28.906	408	1.0000	-1.0000	1.2510	1.2986	595.7	689	.740	1.2510	1.2986	595.7	689	.740
1000	3.5226-6	-2058.1	9.6379	28.906	422	1.0000	-1.0000	1.2642	1.2946	610.2	723	.739	1.2641	1.2946	610.2	723	.739
1050	3.3549-6	-1994.6	9.6999	28.906	437	1.0000	-1.0000	1.2764	1.2909	624.4	756	.738	1.2762	1.2910	624.4	756	.738
1100	3.2024-6	-1930.5	9.7595	28.906	451	1.0000	-1.0000	1.2882	1.2875	638.3	789	.737	1.2877	1.2876	638.3	788	.737
1150	3.0632-6	-1865.8	9.8170	28.906	465	1.0001	-1.0000	1.2997	1.2843	651.8	822	.736	1.2986	1.2845	651.8	821	.736
1200	2.9355-6	-1800.5	9.8726	28.905	479	1.0001	-1.0000	1.3113	1.2811	665.0	854	.735	1.3091	1.2816	665.1	852	.736
1250	2.8181-6	-1734.7	9.9264	28.905	493	1.0003	-1.0000	1.3233	1.2779	677.9	888	.734	1.3190	1.2789	678.1	884	.735
1300	2.7096-6	-1668.2	9.9785	28.905	506	1.0005	-1.0000	1.3362	1.2747	690.4	922	.733	1.3284	1.2764	690.9	915	.734
1350	2.6092-6	-1601.0	10.0292	28.904	519	1.0009	-1.0000	1.3509	1.2712	702.6	958	.732	1.3374	1.2740	703.4	946	.734
1400	2.5159-6	-1533.1	10.0786	28.903	532	1.0016	-1.0000	1.3685	1.2672	714.4	998	.730	1.3460	1.2718	715.7	977	.733
1450	2.4290-6	-1464.1	10.1270	28.900	545	1.0027	-1.0001	1.3903	1.2626	725.7	1041	.728	1.3541	1.2698	727.8	1007	.733
1500	2.3477-6	-1393.9	10.1746	28.897	558	1.0043	-1.0001	1.4182	1.2571	736.6	1091	.725	1.3618	1.2679	739.7	1037	.732
1550	2.2716-6	-1322.1	10.2217	28.892	570	1.0068	-1.0002	1.4543	1.2506	746.9	1151	.721	1.3691	1.2661	751.5	1067	.731
1600	2.2000-6	-1248.3	10.2686	28.884	582	1.0103	-1.0002	1.5013	1.2429	756.6	1223	.715	1.3760	1.2645	763.2	1097	.730
1650	2.1325-6	-1171.8	10.3157	28.873	595	1.0152	-1.0004	1.5623	1.2339	765.7	1311	.708	1.3825	1.2631	774.7	1127	.729
1700	2.0687-6	-1091.8	10.3634	28.857	607	1.0220	-1.0006	1.6408	1.2237	774.2	1423	.699	1.3886	1.2618	786.2	1156	.729
1750	2.0080-6	-1007.3	10.4124	28.835	618	1.0310	-1.0008	1.7406	1.2125	782.2	1563	.688	1.3943	1.2607	797.6	1185	.727
1800	1.9502-6	-917.3	10.4631	28.805	630	1.0430	-1.0012	1.8659	1.2007	789.8	1742	.675	1.3997	1.2598	809.0	1214	.726
1850	1.8949-6	-820.3	10.5163	28.766	641	1.0585	-1.0016	2.0208	1.1885	797.2	1969	.658	1.4047	1.2591	820.5	1243	.725
1900	1.8417-6	-714.7	10.5726	28.714	653	1.0780	-1.0022	2.2094	1.1766	804.6	2257	.639	1.4093	1.2586	832.1	1271	.724
1950	1.7903-6	-598.7	10.6328	28.647	664	1.1024	-1.0030	2.4357	1.1652	812.1	2620	.617	1.4136	1.2584	843.9	1299	.722
2000	1.7404-6	-470.4	10.6977	28.562	674	1.1322	-1.0040	2.7027	1.1548	820.0	3077	.592	1.4175	1.2584	856.0	1328	.720
2050	1.6917-6	-327.7	10.7682	28.457	685	1.1681	-1.0053	3.0132	1.1455	828.3	3646	.566	1.4211	1.2588	868.3	1356	.717
2100	1.6439-6	-168.3	10.8450	28.328	695	1.2105	-1.0068	3.3688	1.1375	837.3	4350	.538	1.4243	1.2596	881.1	1385	.715
2150	1.5968-6	10.0	10.9289	28.172	705	1.2600	-1.0087	3.7706	1.1307	847.0	5210	.510	1.4272	1.2607	894.4	1414	.711
2200	1.5503-6	209.5	11.0206	27.986	714	1.3169	-1.0109	4.2193	1.1251	857.5	6251	.482	1.4299	1.2623	908.3	1445	.707
2250	1.5040-6	432.7	11.1209	27.768	723	1.3816	-1.0135	4.7153	1.1207	868.9	7489	.455	1.4324	1.2643	922.9	1477	.701
2300	1.4579-6	681.8	11.2304	27.515	732	1.4542	-1.0166	5.2588	1.1172	881.2	8933	.431	1.4347	1.2668	938.3	1512	.695
2350	1.4118-6	959.3	11.3497	27.224	741	1.5348	-1.0201	5.8493	1.1146	894.4	10577	.410	1.4371	1.2699	954.7	1549	.687
2400	1.3656-6	1267.5	11.4795	26.895	749	1.6230	-1.0242	6.4833	1.1129	908.7	12386	.392	1.4395	1.2735	972.1	1590	.678
2450	1.3194-6	1608.2	11.6200	26.526	757	1.7171	-1.0287	7.1518	1.1118	924.0	14296	.379	1.4420	1.2777	990.6	1636	.667
2500	1.2732-6	1982.9	11.7713	26.119	765	1.8143	-1.0335	7.8354	1.1113	940.4	16201	.370	1.4447	1.2826	1010.3	1687	.655
2550	1.2271-6	2391.5	11.9331	25.677	773	1.9095	-1.0385	8.5000	1.1116	958.0	17957	.366	1.4477	1.2881	1031.3	1743	.642
2600	1.1814-6	2831.8	12.1041	25.206	781	1.9952	-1.0433	9.0946	1.1124	976.8	19390	.366	1.4509	1.2942	1053.6	1805	.627
2650	1.1366-6	3298.7	12.2820	24.716	788	2.0623	-1.0475	9.5535	1.1139	996.5	20323	.371	1.4544	1.3009	1076.9	1871	.613
2700	1.0932-6	3783.7	12.4633	24.220	796	2.1011	-1.0505	9.8066	1.1161	1017.1	20615	.379	1.4581	1.3079	1101.0	1940	.598
2750	1.0517-6	4274.9	12.6435	23.733	804	2.1041	-1.0519	9.7965	1.1191	1038.4	20202	.390	1.4619	1.3152	1125.6	2011	.585
2800	1.0129-6	4758.5	12.8178	23.272	812	2.0686	-1.0514	9.4995	1.1230	1059.9	19127	.403	1.4657	1.3223	1150.1	2081	.572
2850	9.7703-7	5220.4	12.9814	22.849	821	1.9977	-1.0491	8.9378	1.1279	1081.5	17536	.418	1.4693	1.3292	1174.1	2148	.562
2900	9.4444-7	5649.0	13.1304	22.474	830	1.9002	-1.0452	8.1767	1.1339	1103.0	15637	.434	1.4728	1.3355	1197.0	2211	.553
2950	9.1512-7	6036.3	13.2629	22.152	839	1.7878	-1.0405	7.3046	1.1413	1124.1	13645	.449	1.4759	1.3410	1218.5	2270	.545
3000	8.8890-7	6379.1	13.3781	21.882	848	1.6718	-1.0352	6.4096	1.1500	1145.0	11736	.463	1.4787	1.3458	1238.6	2324	.540

TABLE 10.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.067628; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE		J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
900	3.9140-5	-2183.2	8.8438	28.906	392	1.0000 -1.0000	1.2372	1.3029	580.8	655	.741	1.2372	1.3029	580.8	655 .741
950	3.7080-5	-2121.0	8.9111	28.906	408	1.0000 -1.0000	1.2510	1.2986	595.7	689	.740	1.2510	1.2986	595.7	689 .740
1000	3.5226-5	-2058.1	8.9756	28.906	422	1.0000 -1.0000	1.2641	1.2946	610.2	723	.739	1.2641	1.2946	610.2	723 .739
1050	3.3549-5	-1994.6	9.0375	28.906	437	1.0000 -1.0000	1.2763	1.2910	624.4	756	.738	1.2762	1.2910	624.4	756 .738
1100	3.2024-5	-1930.5	9.0972	28.906	451	1.0000 -1.0000	1.2879	1.2876	638.3	789	.737	1.2877	1.2876	638.3	788 .737
1150	3.0632-5	-1865.9	9.1547	28.906	465	1.0000 -1.0000	1.2991	1.2844	651.8	821	.736	1.2986	1.2845	651.8	821 .736
1200	2.9355-5	-1800.6	9.2102	28.906	479	1.0001 -1.0000	1.3101	1.2814	665.0	853	.735	1.3091	1.2816	665.1	852 .736
1250	2.8181-5	-1734.8	9.2639	28.905	493	1.0001 -1.0000	1.3210	1.2784	678.0	886	.735	1.3190	1.2789	678.1	884 .735
1300	2.7097-5	-1668.5	9.3159	28.905	506	1.0002 -1.0000	1.3321	1.2756	690.6	918	.734	1.3284	1.2764	690.9	915 .734
1350	2.6093-5	-1601.6	9.3664	28.905	519	1.0004 -1.0000	1.3438	1.2726	703.0	952	.733	1.3374	1.2740	703.4	946 .734
1400	2.5160-5	-1534.1	9.4155	28.904	532	1.0008 -1.0000	1.3567	1.2696	715.0	986	.732	1.3460	1.2718	715.7	977 .733
1450	2.4292-5	-1465.9	9.4634	28.903	545	1.0013 -1.0000	1.3713	1.2663	726.8	1023	.730	1.3541	1.2697	727.8	1007 .733
1500	2.3481-5	-1396.9	9.5102	28.902	558	1.0020 -1.0000	1.3885	1.2626	738.1	1062	.729	1.3618	1.2678	739.7	1037 .732
1550	2.2722-5	-1327.0	9.5560	28.899	570	1.0032 -1.0001	1.4094	1.2584	749.1	1106	.726	1.3691	1.2660	751.4	1067 .731
1600	2.2009-5	-1255.9	9.6012	28.896	582	1.0048 -1.0001	1.4352	1.2536	759.7	1155	.724	1.3760	1.2644	763.0	1097 .731
1650	2.1338-5	-1183.4	9.6458	28.890	595	1.0071 -1.0002	1.4673	1.2480	769.8	1211	.720	1.3826	1.2629	774.4	1127 .730
1700	2.0705-5	-1109.1	9.6902	28.883	607	1.0102 -1.0003	1.5074	1.2417	779.5	1277	.716	1.3888	1.2615	785.7	1156 .729
1750	2.0106-5	-1032.5	9.7346	28.873	619	1.0144 -1.0004	1.5574	1.2344	788.7	1355	.711	1.3946	1.2602	796.9	1185 .728
1800	1.9539-5	-953.1	9.7793	28.859	630	1.0199 -1.0005	1.6190	1.2264	797.5	1448	.705	1.4001	1.2591	808.1	1214 .727
1850	1.8998-5	-870.3	9.8246	28.840	642	1.0271 -1.0007	1.6945	1.2176	805.9	1561	.697	1.4053	1.2581	819.1	1242 .726
1900	1.8483-5	-783.4	9.8710	28.816	653	1.0362 -1.0010	1.7858	1.2084	813.9	1697	.688	1.4101	1.2573	830.2	1270 .725
1950	1.7990-5	-691.5	9.9187	28.785	664	1.0475 -1.0014	1.8950	1.1988	821.7	1861	.677	1.4146	1.2566	841.3	1299 .724
2000	1.7516-5	-593.6	9.9683	28.746	676	1.0613 -1.0018	2.0239	1.1893	829.4	2060	.664	1.4187	1.2561	852.4	1326 .723
2050	1.7059-5	-488.7	10.0201	28.697	686	1.0781 -1.0024	2.1739	1.1800	837.2	2300	.649	1.4226	1.2558	863.6	1354 .721
2100	1.6618-5	-375.8	10.0745	28.636	697	1.0981 -1.0031	2.3464	1.1711	845.0	2587	.632	1.4261	1.2556	875.0	1381 .720
2150	1.6190-5	-253.7	10.1319	28.562	707	1.1215 -1.0039	2.5418	1.1629	853.1	2930	.614	1.4294	1.2557	886.5	1408 .718
2200	1.5773-5	-121.2	10.1928	28.474	718	1.1485 -1.0049	2.7604	1.1555	861.6	3338	.594	1.4323	1.2561	898.3	1436 .716
2250	1.5366-5	22.7	10.2575	28.370	728	1.1793 -1.0061	3.0018	1.1490	870.4	3819	.572	1.4350	1.2567	910.3	1463 .714
2300	1.4967-5	179.3	10.3263	28.247	738	1.2139 -1.0075	3.2651	1.1433	879.8	4383	.549	1.4374	1.2575	922.7	1491 .711
2350	1.4575-5	349.6	10.3996	28.106	747	1.2524 -1.0091	3.5492	1.1385	889.6	5040	.526	1.4396	1.2586	935.4	1519 .708
2400	1.4190-5	534.5	10.4774	27.945	756	1.2948 -1.0109	3.8528	1.1344	900.0	5798	.503	1.4416	1.2601	948.6	1548 .704
2450	1.3810-5	735.2	10.5602	27.763	766	1.3410 -1.0130	4.1750	1.1312	911.0	6664	.480	1.4434	1.2618	962.2	1578 .700
2500	1.3434-5	952.3	10.6479	27.559	774	1.3910 -1.0154	4.5147	1.1286	922.6	7641	.458	1.4452	1.2638	976.3	1610 .695
2550	1.3062-5	1186.9	10.7408	27.332	783	1.4449 -1.0180	4.8714	1.1267	934.9	8728	.437	1.4469	1.2662	991.1	1644 .689
2600	1.2694-5	1439.7	10.8390	27.082	792	1.5024 -1.0208	5.2439	1.1252	947.7	9913	.419	1.4485	1.2690	1006.4	1680 .682
2650	1.2328-5	1711.5	10.9425	26.808	800	1.5632 -1.0240	5.6304	1.1243	961.3	11176	.403	1.4502	1.2720	1022.5	1719 .675
2700	1.1966-5	2002.9	11.0514	26.512	808	1.6266 -1.0275	6.0266	1.1239	975.5	12484	.390	1.4520	1.2755	1039.2	1761 .666
2750	1.1608-5	2314.2	11.1657	26.193	816	1.6912 -1.0311	6.4251	1.1238	990.5	13791	.380	1.4540	1.2793	1056.7	1807 .657
2800	1.1253-5	2645.3	11.2850	25.854	824	1.7552 -1.0349	6.8142	1.1243	1006.	15036	.374	1.4560	1.2835	1075.0	1856 .647
2850	1.0903-5	2995.2	11.4088	25.497	832	1.8159 -1.0386	7.1771	1.1251	1022	16149	.370	1.4582	1.2880	1094.1	1908 .636
2900	1.0559-5	3362.2	11.5365	25.126	840	1.8697 -1.0422	7.4926	1.1264	1039.7	17056	.369	1.4606	1.2929	1113.9	1964 .625
2950	1.0223-5	3743.3	11.6667	24.746	848	1.9128 -1.0454	7.7365	1.1281	1057.4	17688	.371	1.4631	1.2981	1134.3	2023 .613
3000	9.8966-6	4134.3	11.7982	24.362	856	1.9415 -1.0479	7.8846	1.1303	1075.8	17989	.375	1.4658	1.3035	1155.2	2085 .602

TABLE 10.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.067628; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9140-4	-2183.2	8.1815	28.906	392	1.0000	-1.0000	1.2372	1.3029	580.8	655	.741	1.2372	1.3029	580.8	655	.741
950	3.7080-4	-2121.0	8.2487	28.906	408	1.0000	-1.0000	1.2510	1.2986	595.7	689	.740	1.2510	1.2986	595.7	689	.740
1000	3.5226-4	-2058.1	8.3133	28.906	422	1.0000	-1.0000	1.2641	1.2946	610.2	723	.739	1.2641	1.2946	610.2	723	.739
1050	3.3549-4	-1994.6	8.3752	28.906	437	1.0000	-1.0000	1.2762	1.2910	624.4	756	.738	1.2762	1.2910	624.4	756	.738
1100	3.2024-4	-1930.5	8.4349	28.906	451	1.0000	-1.0000	1.2878	1.2876	638.3	789	.737	1.2877	1.2876	638.3	788	.737
1150	3.0632-4	-1865.9	8.4924	28.906	465	1.0000	-1.0000	1.2989	1.2845	651.8	821	.736	1.2986	1.2845	651.8	821	.736
1200	2.9355-4	-1800.7	8.5479	28.906	479	1.0000	-1.0000	1.3096	1.2815	665.1	853	.736	1.3091	1.2816	665.1	852	.736
1250	2.8181-4	-1734.9	8.6015	28.906	493	1.0001	-1.0000	1.3200	1.2787	678.0	885	.735	1.3190	1.2789	678.1	884	.735
1300	2.7097-4	-1668.7	8.6535	28.905	506	1.0001	-1.0000	1.3302	1.2760	690.7	917	.734	1.3284	1.2764	690.9	915	.734
1350	2.6093-4	-1601.9	8.7039	28.905	519	1.0002	-1.0000	1.3405	1.2733	703.2	949	.733	1.3374	1.2740	703.4	946	.734
1400	2.5161-4	-1534.6	8.7528	28.905	532	1.0004	-1.0000	1.3511	1.2707	715.3	981	.733	1.3460	1.2718	715.7	977	.733
1450	2.4293-4	-1466.8	8.8004	28.904	545	1.0006	-1.0000	1.3623	1.2681	727.3	1015	.732	1.3541	1.2697	727.7	1007	.733
1500	2.3483-4	-1398.4	8.8468	28.904	558	1.0010	-1.0000	1.3746	1.2653	738.9	1049	.731	1.3618	1.2678	739.6	1037	.732
1550	2.2724-4	-1329.3	8.8921	28.903	570	1.0015	-1.0000	1.3884	1.2623	750.2	1086	.729	1.3691	1.2660	751.3	1067	.731
1600	2.2013-4	-1259.5	8.9364	28.901	582	1.0023	-1.0001	1.4043	1.2590	761.3	1124	.728	1.3761	1.2643	762.9	1097	.731
1650	2.1344-4	-1188.8	8.9799	28.898	595	1.0033	-1.0001	1.4230	1.2554	772.0	1166	.726	1.3826	1.2628	774.3	1127	.730
1700	2.0714-4	-1117.1	9.0227	28.895	607	1.0048	-1.0001	1.4454	1.2514	782.4	1212	.723	1.3889	1.2613	785.5	1156	.729
1750	2.0119-4	-1044.2	9.0650	28.890	619	1.0068	-1.0002	1.4723	1.2468	792.4	1264	.721	1.3947	1.2600	796.6	1185	.728
1800	1.9555-4	-969.8	9.1069	28.884	630	1.0094	-1.0002	1.5045	1.2417	802.1	1322	.717	1.4003	1.2588	807.6	1214	.727
1850	1.9021-4	-893.6	9.1487	28.875	642	1.0127	-1.0003	1.5432	1.2361	811.5	1388	.714	1.4055	1.2577	818.5	1242	.727
1900	1.8513-4	-815.4	9.1904	28.864	654	1.0170	-1.0005	1.5894	1.2300	820.5	1465	.709	1.4104	1.2566	829.3	1270	.726
1950	1.8029-4	-734.6	9.2324	28.849	665	1.0223	-1.0006	1.6440	1.2233	829.2	1553	.704	1.4151	1.2558	840.1	1298	.725
2000	1.7567-4	-650.8	9.2748	28.830	676	1.0288	-1.0008	1.7081	1.2163	837.6	1655	.698	1.4194	1.2550	850.8	1326	.724
2050	1.7125-4	-563.6	9.3179	28.807	687	1.0368	-1.0011	1.7827	1.2091	845.8	1773	.691	1.4235	1.2543	861.5	1353	.723
2100	1.6701-4	-472.3	9.3618	28.779	698	1.0463	-1.0014	1.8685	1.2017	853.9	1910	.683	1.4272	1.2538	872.2	1380	.722
2150	1.6292-4	-376.5	9.4069	28.743	709	1.0575	-1.0018	1.9661	1.1943	861.8	2069	.674	1.4307	1.2534	882.9	1407	.721
2200	1.5899-4	-275.5	9.4534	28.701	719	1.0706	-1.0023	2.0760	1.1871	869.8	2253	.663	1.4340	1.2532	893.7	1434	.719
2250	1.5518-4	-168.7	9.5014	28.651	730	1.0857	-1.0029	2.1983	1.1803	877.9	2464	.651	1.4370	1.2531	904.5	1461	.718
2300	1.5150-4	-55.5	9.5511	28.592	740	1.1028	-1.0035	2.3329	1.1738	886.0	2705	.638	1.4397	1.2531	915.5	1487	.717
2350	1.4792-4	64.8	9.6028	28.523	750	1.1220	-1.0043	2.4794	1.1678	894.4	2981	.624	1.4422	1.2533	926.6	1513	.715
2400	1.4443-4	192.6	9.6567	28.444	760	1.1433	-1.0052	2.6371	1.1624	903.1	3294	.609	1.4445	1.2537	937.8	1540	.713
2450	1.4103-4	328.6	9.7128	28.353	770	1.1667	-1.0061	2.8048	1.1576	912.0	3647	.592	1.4465	1.2543	949.3	1566	.711
2500	1.3771-4	473.3	9.7712	28.251	780	1.1920	-1.0073	2.9816	1.1534	921.2	4045	.575	1.4484	1.2550	960.9	1593	.709
2550	1.3446-4	626.9	9.8320	28.136	789	1.2193	-1.0085	3.1662	1.1498	930.8	4490	.556	1.4501	1.2559	972.8	1620	.706
2600	1.3128-4	790.0	9.8954	28.008	798	1.2484	-1.0099	3.3573	1.1467	940.8	4986	.537	1.4516	1.2571	985.0	1648	.703
2650	1.2816-4	962.8	9.9612	27.868	807	1.2792	-1.0114	3.5538	1.1442	951.1	5535	.518	1.4531	1.2584	997.4	1676	.700
2700	1.2509-4	1145.5	10.0295	27.715	816	1.3115	-1.0130	3.7548	1.1421	961.8	6139	.499	1.4544	1.2599	1010.2	1705	.696
2750	1.2208-4	1338.3	10.1002	27.548	825	1.3455	-1.0148	3.9597	1.1405	972.9	6798	.481	1.4556	1.2616	1023.3	1735	.692
2800	1.1912-4	1541.5	10.1734	27.369	834	1.3810	-1.0167	4.1680	1.1393	984.5	7511	.463	1.4568	1.2635	1036.7	1766	.688
2850	1.1621-4	1755.2	10.2491	27.176	842	1.4179	-1.0188	4.3795	1.1385	996.4	8274	.446	1.4580	1.2656	1050.5	1798	.683
2900	1.1334-4	1979.5	10.3271	26.970	851	1.4562	-1.0210	4.5938	1.1380	1008.7	9080	.430	1.4592	1.2679	1064.7	1832	.677
2950	1.1051-4	2214.6	10.4075	26.752	859	1.4957	-1.0234	4.8101	1.1379	1021.4	9920	.417	1.4604	1.2704	1079.2	1868	.672
3000	1.0773-4	2460.5	10.4901	26.521	867	1.5361	-1.0259	5.0271	1.1380	1034.5	10777	.405	1.4617	1.2730	1094.2	1906	.665

TABLE 10.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.067628; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.9140-3	-2183.2	7.5192	28.906	392	1.0000	-1.0000	1.2372	1.3029	580.8	655 .741	1.2372	1.3029	580.8	655 .741
950	3.7080-3	-2121.0	7.5864	28.906	408	1.0000	-1.0000	1.2510	1.2986	595.7	689 .740	1.2510	1.2986	595.7	689 .740
1000	3.5226-3	-2058.1	7.6509	28.906	422	1.0000	-1.0000	1.2641	1.2946	610.2	723 .739	1.2641	1.2946	610.2	723 .739
1050	3.3549-3	-1994.6	7.7129	28.906	437	1.0000	-1.0000	1.2762	1.2910	624.4	756 .738	1.2762	1.2910	624.4	756 .738
1100	3.2024-3	-1930.5	7.7725	28.906	451	1.0000	-1.0000	1.2877	1.2876	638.3	788 .737	1.2877	1.2876	638.3	788 .737
1150	3.0632-3	-1865.9	7.8300	28.906	465	1.0000	-1.0000	1.2987	1.2845	651.8	821 .736	1.2986	1.2845	651.8	821 .736
1200	2.9355-3	-1800.7	7.8855	28.906	479	1.0000	-1.0000	1.3093	1.2816	665.1	853 .736	1.3091	1.2816	665.1	852 .736
1250	2.8181-3	-1735.0	7.9392	28.906	493	1.0000	-1.0000	1.3195	1.2788	678.1	884 .735	1.3190	1.2789	678.1	884 .735
1300	2.7097-3	-1668.7	7.9911	28.906	506	1.0001	-1.0000	1.3293	1.2762	690.8	916 .734	1.3284	1.2764	690.9	915 .734
1350	2.6093-3	-1602.0	8.0415	28.905	519	1.0001	-1.0000	1.3389	1.2737	703.3	947 .734	1.3374	1.2740	703.4	946 .734
1400	2.5161-3	-1534.8	8.0903	28.905	532	1.0002	-1.0000	1.3485	1.2713	715.5	979 .733	1.3460	1.2718	715.6	977 .733
1450	2.4294-3	-1467.2	8.1378	28.905	545	1.0003	-1.0000	1.3581	1.2689	727.5	1011 .732	1.3541	1.2697	727.7	1007 .733
1500	2.3483-3	-1399.0	8.1840	28.905	558	1.0005	-1.0000	1.3680	1.2665	739.2	1043 .731	1.3618	1.2678	739.6	1037 .732
1550	2.2726-3	-1330.4	8.2291	28.904	570	1.0007	-1.0000	1.3784	1.2642	750.8	1076 .730	1.3691	1.2660	751.3	1067 .731
1600	2.2015-3	-1261.2	8.2730	28.903	582	1.0011	-1.0000	1.3897	1.2617	762.0	1110 .729	1.3761	1.2643	762.8	1097 .731
1650	2.1347-3	-1191.4	8.3160	28.902	595	1.0016	-1.0000	1.4022	1.2591	773.1	1146 .728	1.3827	1.2627	774.2	1127 .730
1700	2.0718-3	-1120.9	8.3580	28.901	607	1.0023	-1.0001	1.4162	1.2563	783.9	1183 .727	1.3889	1.2612	785.4	1156 .729
1750	2.0124-3	-1049.7	8.3993	28.898	619	1.0032	-1.0001	1.4322	1.2533	794.4	1222 .725	1.3948	1.2599	796.5	1185 .728
1800	1.9563-3	-977.7	8.4399	28.895	631	1.0044	-1.0001	1.4507	1.2500	804.6	1265 .723	1.4004	1.2586	807.4	1214 .728
1850	1.9032-3	-904.6	8.4799	28.891	642	1.0060	-1.0002	1.4721	1.2464	814.6	1311 .721	1.4057	1.2574	818.2	1242 .727
1900	1.8527-3	-830.4	8.5195	28.886	654	1.0080	-1.0002	1.4970	1.2425	824.3	1362 .719	1.4106	1.2564	828.9	1270 .726
1950	1.8048-3	-754.8	8.5588	28.879	665	1.0106	-1.0003	1.5258	1.2382	833.8	1418 .716	1.4153	1.2554	839.5	1298 .725
2000	1.7591-3	-677.7	8.5978	28.870	676	1.0137	-1.0004	1.5592	1.2336	843.0	1480 .713	1.4197	1.2545	850.0	1326 .724
2050	1.7156-3	-598.8	8.6368	28.859	688	1.0175	-1.0005	1.5976	1.2288	851.9	1549 .709	1.4239	1.2537	860.5	1353 .723
2100	1.6739-3	-517.9	8.6758	28.845	699	1.0220	-1.0007	1.6415	1.2236	860.6	1626 .705	1.4278	1.2529	870.9	1380 .723
2150	1.6341-3	-434.6	8.7150	28.829	709	1.0274	-1.0009	1.6914	1.2182	869.1	1712 .701	1.4315	1.2523	881.2	1407 .722
2200	1.5958-3	-348.6	8.7545	28.808	720	1.0338	-1.0011	1.7475	1.2127	877.5	1808 .696	1.4349	1.2518	891.5	1434 .721
2250	1.5590-3	-259.7	8.7944	28.784	731	1.0411	-1.0013	1.8102	1.2072	885.8	1917 .690	1.4381	1.2513	901.8	1460 .720
2300	1.5236-3	-167.5	8.8350	28.756	741	1.0495	-1.0017	1.8796	1.2016	893.9	2037 .684	1.4411	1.2510	912.1	1487 .719
2350	1.4895-3	-71.7	8.8762	28.722	752	1.0591	-1.0020	1.9557	1.1962	902.1	2172 .677	1.4438	1.2508	922.4	1513 .717
2400	1.4565-3	28.2	8.9182	28.683	762	1.0699	-1.0025	2.0385	1.1909	910.2	2321 .669	1.4464	1.2506	932.8	1539 .716
2450	1.4245-3	132.3	8.9612	28.638	772	1.0818	-1.0029	2.1278	1.1859	918.4	2487 .661	1.4487	1.2506	943.2	1565 .715
2500	1.3935-3	241.0	9.0051	28.587	782	1.0949	-1.0035	2.2231	1.1811	926.7	2669 .651	1.4509	1.2507	953.6	1590 .713
2550	1.3635-3	354.7	9.0501	28.530	792	1.1092	-1.0041	2.3239	1.1767	935.1	2870 .641	1.4529	1.2509	964.2	1616 .712
2600	1.3342-3	473.5	9.0963	28.465	802	1.1247	-1.0048	2.4296	1.1727	943.7	3090 .630	1.4547	1.2512	974.8	1642 .710
2650	1.3057-3	597.7	9.1436	28.393	811	1.1412	-1.0056	2.5394	1.1691	952.5	3330 .619	1.4564	1.2517	985.5	1668 .708
2700	1.2780-3	727.5	9.1921	28.314	821	1.1587	-1.0064	2.6525	1.1658	961.4	3591 .606	1.4579	1.2522	996.4	1694 .706
2750	1.2509-3	863.0	9.2418	28.227	830	1.1771	-1.0073	2.7680	1.1630	970.6	3874 .593	1.4593	1.2529	1007.4	1719 .704
2800	1.2244-3	1004.3	9.2927	28.132	839	1.1963	-1.0082	2.8851	1.1606	980.0	4180 .579	1.4605	1.2537	1018.6	1745 .702
2850	1.1985-3	1151.5	9.3448	28.029	848	1.2162	-1.0093	3.0030	1.1585	989.6	4509 .565	1.4617	1.2546	1029.9	1771 .700
2900	1.1733-3	1304.6	9.3981	27.919	857	1.2367	-1.0104	3.1210	1.1568	999.5	4862 .550	1.4628	1.2556	1041.3	1798 .698
2950	1.1485-3	1463.6	9.4525	27.802	866	1.2578	-1.0116	3.2385	1.1554	1009.6	5240 .535	1.4638	1.2568	1053.0	1825 .695
3000	1.1243-3	1628.5	9.5079	27.676	875	1.2793	-1.0128	3.3551	1.1544	1020.0	5643 .520	1.4647	1.2580	1064.8	1852 .692

TABLE 10.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.067628; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9570-2	-2183.2	7.0562	28.906	392	1.0000	-1.0000	1.2372	1.3029	580.8	655	.741	1.2372	1.3029	580.8	655	.741
950	1.8540-2	-2121.0	[illegible]	28.906	408	1.0000	-1.0000	1.2510	1.2986	595.7	689	.740	1.2510	1.2986	595.7	689	.740
1000	1.7613-2	-2058.1	7.1880	28.906	422	1.0000	-1.0000	1.2641	1.2946	610.2	723	.739	1.2641	1.2946	610.2	723	.739
1050	1.6774-2	-1994.6	7.2500	28.906	437	1.0000	-1.0000	1.2762	1.2910	624.4	756	.738	1.2762	1.2910	624.4	756	.738
1100	1.6012-2	-1930.5	7.3096	28.906	451	1.0000	-1.0000	1.2877	1.2876	638.3	788	.737	1.2877	1.2876	638.3	788	.737
1150	1.5316-2	-1865.9	7.3671	28.906	465	1.0000	-1.0000	1.2987	1.2845	651.8	821	.736	1.2986	1.2845	651.8	821	.736
1200	1.4678-2	-1800.7	7.4226	28.906	479	1.0000	-1.0000	1.3092	1.2816	665.1	853	.736	1.3091	1.2816	665.1	852	.736
1250	1.4091-2	-1735.0	7.4762	28.906	493	1.0000	-1.0000	1.3193	1.2788	678.1	884	.735	1.3190	1.2789	678.1	884	.735
1300	1.3549-2	-1668.8	7.5282	28.906	506	1.0000	-1.0000	1.3290	1.2762	690.8	916	.734	1.3284	1.2764	690.8	915	.734
1350	1.3047-2	-1602.1	7.5785	28.906	519	1.0001	-1.0000	1.3383	1.2738	703.3	947	.734	1.3374	1.2740	703.4	946	.734
1400	1.2581-2	-1534.9	7.6273	28.905	532	1.0001	-1.0000	1.3475	1.2715	715.6	978	.733	1.3460	1.2718	715.6	977	.733
1450	1.2147-2	-1467.3	7.6748	28.905	545	1.0002	-1.0000	1.3565	1.2692	727.6	1009	.732	1.3541	1.2697	727.7	1007	.733
1500	1.1742-2	-1399.3	7.7209	28.905	558	1.0003	-1.0000	1.3656	1.2670	739.4	1041	.732	1.3618	1.2678	739.6	1037	.732
1550	1.1363-2	-1330.8	7.7659	28.905	570	1.0004	-1.0000	1.3748	1.2649	751.0	1073	.731	1.3691	1.2660	751.3	1067	.731
1600	1.1008-2	-1261.8	7.8096	28.904	582	1.0006	-1.0000	1.3844	1.2627	762.3	1105	.730	1.3761	1.2643	762.8	1097	.731
1650	1.0674-2	-1192.3	7.8524	28.904	595	1.0009	-1.0000	1.3945	1.2605	773.5	1138	.729	1.3827	1.2627	774.2	1127	.730
1700	1.0360-2	-1122.3	7.8942	28.903	607	1.0014	-1.0000	1.4055	1.2582	784.4	1172	.728	1.3889	1.2612	785.4	1156	.729
1750	1.0063-2	-1051.8	7.9351	28.901	619	1.0019	-1.0000	1.4175	1.2558	795.1	1208	.726	1.3948	1.2598	796.4	1185	.728
1800	9.7830-3	-980.5	7.9752	28.899	631	1.0026	-1.0001	1.4309	1.2532	805.6	1245	.725	1.4004	1.2586	807.3	1214	.728
1850	9.5178-3	-908.6	8.0146	28.897	642	1.0036	-1.0001	1.4460	1.2505	815.9	1284	.723	1.4057	1.2574	818.1	1242	.727
1900	9.2663-3	-835.9	8.0534	28.894	654	1.0048	-1.0001	1.4630	1.2476	825.9	1325	.722	1.4107	1.2563	828.8	1270	.726
1950	9.0274-3	-762.3	8.0917	28.890	665	1.0063	-1.0002	1.4824	1.2444	835.7	1370	.720	1.4154	1.2552	839.3	1298	.725
2000	8.8001-3	-687.6	8.1295	28.884	677	1.0082	-1.0002	1.5044	1.2411	845.3	1418	.718	1.4199	1.2543	849.8	1326	.724
2050	8.5835-3	-611.8	8.1669	28.878	688	1.0104	-1.0003	1.5294	1.2375	854.6	1470	.716	1.4241	1.2534	860.1	1353	.724
2100	8.3768-3	-534.6	8.2041	28.870	699	1.0132	-1.0004	1.5577	1.2336	863.8	1527	.713	1.4280	1.2526	870.4	1381	.723
2150	8.1791-3	-456.0	8.2411	28.860	710	1.0164	-1.0005	1.5896	1.2296	872.7	1588	.710	1.4318	1.2519	880.6	1407	.722
2200	7.9899-3	-375.6	8.2781	28.847	721	1.0202	-1.0006	1.6253	1.2254	881.5	1656	.707	1.4352	1.2513	890.7	1434	.721
2250	7.8084-3	-293.4	8.3150	28.833	731	1.0247	-1.0008	1.6652	1.2210	890.1	1730	.704	1.4385	1.2507	900.8	1461	.720
2300	7.6341-3	-209.0	8.3521	28.816	742	1.0298	-1.0010	1.7092	1.2166	898.5	1812	.700	1.4416	1.2502	910.9	1487	.719
2350	7.4664-3	-122.4	8.3894	28.796	752	1.0356	-1.0012	1.7576	1.2121	906.9	1901	.695	1.4445	1.2498	920.9	1513	.718
2400	7.3049-3	-33.2	8.4269	28.772	763	1.0422	-1.0015	1.8104	1.2076	915.2	1999	.691	1.4472	1.2495	930.9	1539	.717
2450	7.1490-3	58.7	8.4648	28.745	773	1.0496	-1.0018	1.8676	1.2032	923.4	2105	.686	1.4497	1.2493	940.9	1565	.716
2500	6.9985-3	153.6	8.5032	28.714	783	1.0578	-1.0021	1.9291	1.1988	931.6	2221	.680	1.4520	1.2491	950.9	1590	.715
2550	6.8528-3	251.7	8.5420	28.678	793	1.0668	-1.0025	1.9946	1.1947	939.8	2348	.674	1.4542	1.2490	960.9	1616	.714
2600	6.7117-3	353.2	8.5814	28.638	803	1.0766	-1.0029	2.0640	1.1907	948.0	2484	.667	1.4562	1.2490	971.0	1642	.712
2650	6.5748-3	458.2	8.6214	28.594	813	1.0872	-1.0034	2.1369	1.1869	956.3	2632	.660	1.4580	1.2491	981.1	1667	.711
2700	6.4418-3	566.9	8.6621	28.544	822	1.0986	-1.0039	2.2128	1.1834	964.7	2791	.652	1.4597	1.2493	991.2	1692	.709
2750	6.3126-3	679.5	8.7034	28.490	832	1.1107	-1.0045	2.2913	1.1802	973.2	2961	.644	1.4613	1.2495	1001.4	1717	.708
2800	6.1868-3	796.1	8.7454	28.429	841	1.1235	-1.0051	2.3719	1.1772	981.8	3142	.635	1.4628	1.2499	1011.7	1742	.706
2850	6.0643-3	916.7	8.7881	28.364	851	1.1368	-1.0057	2.4539	1.1746	990.6	3336	.626	1.4641	1.2503	1022.0	1767	.705
2900	5.9448-3	1041.5	8.8315	28.293	860	1.1507	-1.0065	2.5367	1.1723	999.5	3542	.616	1.4653	1.2508	1032.5	1792	.703
2950	5.8283-3	1170.4	8.8756	28.217	869	1.1651	-1.0072	2.6199	1.1702	1008.6	3761	.606	1.4665	1.2515	1043.0	1817	.701
3000	5.7146-3	1303.5	8.9203	28.135	878	1.1798	-1.0080	2.7027	1.1685	1017.8	3991	.595	1.4675	1.2521	1053.6	1842	.700

TABLE 10C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.067628; EQUIV.RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.025-5	-3206.7	6.9031	28.906	1.0581	1.861-5	30.539	129	1.000	-1.000	0.9723	1.3889	275	170	.734	200
220	1.837-5	-3182.3	7.0187	28.906	1.5478	1.690-5	30.508	139	1.000	-1.000	0.9769	1.3869	288	186	.731	220
240	1.643-5	-3123.1	7.2739	28.906	5.7018	1.534-5	30.205	147	1.000	-1.000	0.9931	1.3835	302	199	.736	240
						PRESSURE = 0.10 ATM										
200	2.026-4	-3206.9	6.3261	28.906	1.0242	1.861-4	30.540	129	1.000	-1.000	0.9722	1.3889	275	170	.734	200
220	1.841-4	-3186.0	6.4258	28.906	1.0864	1.692-4	30.537	140	1.000	-1.000	0.9757	1.3870	288	187	.730	220
240	1.684-4	-3161.4	6.5325	28.906	1.4937	1.549-4	30.507	150	1.000	-1.000	0.9805	1.3849	301	202	.728	240
260	1.528-4	-3114.1	6.7203	28.906	3.8642	1.420-4	30.300	159	1.000	-1.000	0.9929	1.3819	314	216	.730	260
280	1.306-4	-2949.1	7.3276	28.906	12.1790	1.276-4	29.320	160	1.000	-1.000	1.0392	1.3753	330	221	.752	280
						PRESSURE = 1.00 ATM										
200	2.025-3	-3206.9	5.7501	28.906	1.0209	1.861-3	30.541	129	1.000	-1.000	0.9722	1.3889	275	170	.734	200
220	1.841-3	-3186.3	5.8482	28.906	1.0405	1.692-3	30.540	140	1.000	-1.000	0.9756	1.3871	288	187	.730	220
240	1.687-3	-3165.1	5.9406	28.906	1.0949	1.551-3	30.537	151	1.000	-1.000	0.9793	1.3851	301	203	.727	240
260	1.555-3	-3141.4	6.0354	28.906	1.3368	1.430-3	30.517	161	1.000	-1.000	0.9839	1.3829	313	218	.725	260
280	1.433-3	-3081.3	6.2565	28.906	2.1555	1.324-3	30.419	170	1.000	-1.000	0.9919	1.3804	325	233	.726	280
298	1.316-3	-3029.3	6.4357	28.906	3.8234	1.232-3	30.151	177	1.000	-1.000	1.0069	1.3772	336	243	.731	298
300	1.304-3	-3022.0	6.4602	28.906	4.0965	1.223-3	30.106	177	1.000	-1.000	1.0092	1.3768	338	244	.733	300
320	1.135-3	-2895.1	6.8679	28.906	9.5454	1.114-3	29.246	179	1.000	-1.000	1.0511	1.3708	353	250	.753	320
						PRESSURE = 10.00 ATM										
200	2.022-2	-3206.9	5.1742	28.906	1.0205	1.861-2	30.541	129	1.000	-1.000	0.9722	1.3889	275	170	.734	200
220	1.839-2	-3186.4	5.2722	28.906	1.0359	1.692-2	30.541	140	1.000	-1.000	0.9756	1.3871	288	187	.730	220
240	1.686-2	-3165.5	5.3631	28.906	1.0552	1.551-2	30.540	151	1.000	-1.000	0.9792	1.3851	301	203	.727	240
260	1.556-2	-3144.0	5.4488	28.906	1.0936	1.431-2	30.538	161	1.000	-1.000	0.9830	1.3831	313	219	.724	260
280	1.444-2	-3093.2	5.6358	28.906	1.3377	1.329-2	30.528	171	1.000	-1.000	0.9874	1.3809	325	234	.723	280
298	1.353-2	-3067.7	5.7240	28.906	1.4932	1.247-2	30.502	180	1.000	-1.000	0.9922	1.3788	335	247	.723	298
300	1.344-2	-3064.9	5.7333	28.906	1.5174	1.239-2	30.497	181	1.000	-1.000	0.9928	1.3785	336	248	.723	300
320	1.252-2	-3031.0	5.8428	28.906	1.9335	1.158-2	30.411	190	1.000	-1.000	1.0007	1.3759	347	261	.726	320
340	1.159-2	-2984.7	5.9828	28.906	2.7921	1.083-2	30.208	197	1.000	-1.000	1.0137	1.3727	358	273	.731	340
360	1.057-2	-2913.9	6.1846	28.906	4.4673	1.008-2	29.783	202	1.000	-1.000	1.0366	1.3685	371	283	.741	360
380	9.335-3	-2795.3	6.5045	28.906	7.7926	9.295-3	28.983	204	1.000	-1.000	1.0775	1.3628	385	291	.757	380
						PRESSURE = 50.00 ATM										
200	1.004-1	-3206.9	4.7717	28.906	1.0205	9.305-2	30.541	129	1.000	-1.000	0.9722	1.3889	275	170	.734	200
220	9.133-2	-3186.4	4.8697	28.906	1.0355	8.459-2	30.541	140	1.000	-1.000	0.9756	1.3871	288	187	.730	220
240	8.378-2	-3165.5	4.9605	28.906	1.0517	7.754-2	30.541	151	1.000	-1.000	0.9792	1.3851	301	203	.727	240
260	7.738-2	-3144.3	5.0454	28.906	1.0721	7.157-2	30.540	161	1.000	-1.000	0.9830	1.3831	313	219	.724	260
280	7.191-2	-3094.3	5.2293	28.906	1.2664	6.646-2	30.538	171	1.000	-1.000	0.9870	1.3809	324	234	.723	280
298	6.753-2	-3071.0	5.3097	28.906	1.2986	6.240-2	30.533	180	1.000	-1.000	0.9910	1.3789	335	247	.722	298
300	6.711-2	-3068.6	5.3178	28.906	1.3036	6.201-2	30.532	181	1.000	-1.000	0.9914	1.3787	336	249	.722	300
320	6.285-2	-3041.8	5.4043	28.906	1.3877	5.811-2	30.515	191	1.000	-1.000	0.9964	1.3764	346	262	.723	320
340	5.898-2	-3012.6	5.4928	28.906	1.5524	5.461-2	30.474	199	1.000	-1.000	1.0026	1.3739	357	276	.725	340
360	5.535-2	-2978.9	5.5891	28.906	1.8432	5.144-2	30.389	208	1.000	-1.000	1.0107	1.3712	367	288	.728	360
380	5.179-2	-2937.6	5.7005	28.906	2.3194	4.847-2	30.229	215	1.000	-1.000	1.0223	1.3681	378	301	.732	380
400	4.813-2	-2884.3	5.8370	28.906	3.0644	4.563-2	29.952	221	1.000	-1.000	1.0392	1.3645	389	312	.737	400
420	4.418-2	-2812.4	6.0123	28.906	4.2129	4.281-2	29.507	226	1.000	-1.000	1.0640	1.3602	401	323	.746	420

TABLE 11.1D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
200	1.7605-5	-2969.2	7.8665	28.892	115	1.0000	-1.0000	1.0444	1.3803	281.9	154	.777	1.0444	1.3803	281.9	154	.777
210	1.6767-5	-2958.8	7.9175	28.892	120	1.0000	-1.0000	1.0463	1.3794	288.7	163	.773	1.0463	1.3794	288.7	163	.773
220	1.6004-5	-2948.3	7.9662	28.892	126	1.0000	-1.0000	1.0483	1.3784	295.4	171	.769	1.0483	1.3784	295.4	171	.769
230	1.5309-5	-2937.8	8.0129	28.892	131	1.0000	-1.0000	1.0504	1.3774	301.9	180	.766	1.0504	1.3774	301.9	180	.766
240	1.4671-5	-2927.3	8.0576	28.892	136	1.0000	-1.0000	1.0526	1.3763	308.3	188	.763	1.0525	1.3763	308.3	188	.763
250	1.4084-5	-2916.7	8.1006	28.892	141	1.0000	-1.0000	1.0549	1.3752	314.5	196	.760	1.0548	1.3752	314.5	196	.761
260	1.3542-5	-2906.2	8.1420	28.892	147	1.0000	-1.0000	1.0573	1.3740	320.6	204	.758	1.0571	1.3741	320.6	204	.759
270	1.3041-5	-2895.6	8.1820	28.892	152	1.0000	-1.0000	1.0598	1.3728	326.6	212	.757	1.0594	1.3729	326.6	212	.757
280	1.2575-5	-2885.0	8.2206	28.892	157	1.0001	-1.0000	1.0626	1.3715	332.4	220	.755	1.0619	1.3718	332.5	220	.756
290	1.2141-5	-2874.3	8.2579	28.892	162	1.0001	-1.0000	1.0656	1.3701	338.1	229	.753	1.0644	1.3706	338.2	228	.755
298	1.1809-5	-2865.7	8.2875	28.892	166	1.0002	-1.0000	1.0683	1.3689	342.7	235	.752	1.0665	1.3696	342.8	234	.755
300	1.1736-5	-2863.7	8.2941	28.892	166	1.0002	-1.0000	1.0690	1.3686	343.7	237	.751	1.0669	1.3693	343.8	235	.755
310	1.1358-5	-2853.0	8.3292	28.891	171	1.0003	-1.0000	1.0728	1.3669	349.2	245	.749	1.0696	1.3681	349.4	243	.755
320	1.1003-5	-2842.2	8.3633	28.891	176	1.0006	-1.0000	1.0773	1.3650	354.6	254	.747	1.0723	1.3668	354.8	250	.755
330	1.0669-5	-2831.4	8.3966	28.890	181	1.0009	-1.0000	1.0827	1.3628	359.8	264	.743	1.0751	1.3656	360.1	257	.755
340	1.0355-5	-2820.6	8.4290	28.889	185	1.0013	-1.0000	1.0892	1.3603	364.8	274	.737	1.0779	1.3643	365.4	265	.755
350	1.0059-5	-2809.6	8.4607	28.888	190	1.0020	-1.0001	1.0972	1.3574	369.8	286	.730	1.0808	1.3630	370.5	272	.755
360	9.7785-6	-2798.6	8.4917	28.886	195	1.0029	-1.0001	1.1070	1.3539	374.6	299	.720	1.0838	1.3616	375.6	279	.755
370	9.5133-6	-2787.5	8.5222	28.883	199	1.0041	-1.0001	1.1191	1.3499	379.2	315	.708	1.0868	1.3603	380.6	287	.754
380	9.2617-6	-2776.2	8.5522	28.880	204	1.0057	-1.0002	1.1340	1.3451	383.6	333	.693	1.0899	1.3590	385.6	295	.753
390	9.0227-6	-2764.8	8.5819	28.875	208	1.0078	-1.0003	1.1523	1.3396	387.9	355	.675	1.0931	1.3576	390.5	302	.752
400	8.7951-6	-2753.2	8.6114	28.868	212	1.0106	-1.0004	1.1746	1.3334	391.9	380	.656	1.0964	1.3563	395.3	310	.751
410	8.5780-6	-2741.3	8.6407	28.859	217	1.0141	-1.0006	1.2015	1.3263	395.8	410	.635	1.0998	1.3550	400.1	318	.750
420	8.3705-6	-2729.1	8.6700	28.848	221	1.0184	-1.0008	1.2338	1.3185	399.5	445	.613	1.1033	1.3536	404.8	326	.749
430	8.1718-6	-2716.6	8.6995	28.834	225	1.0238	-1.0010	1.2720	1.3100	403.0	485	.591	1.1069	1.3523	409.5	333	.748
440	7.9811-6	-2703.6	8.7292	28.816	229	1.0302	-1.0013	1.3168	1.3009	406.4	530	.570	1.1106	1.3510	414.1	341	.746
450	7.7978-6	-2690.2	8.7594	28.794	233	1.0379	-1.0016	1.3685	1.2914	409.6	581	.550	1.1145	1.3497	418.8	349	.745
460	7.6212-6	-2676.3	8.7901	28.767	238	1.0469	-1.0021	1.4275	1.2818	412.8	638	.532	1.1185	1.3484	423.4	358	.743
470	7.4507-6	-2661.7	8.8215	28.735	242	1.0572	-1.0026	1.4938	1.2722	415.9	699	.516	1.1227	1.3472	428.0	366	.740
480	7.2858-6	-2646.4	8.8537	28.697	246	1.0689	-1.0031	1.5672	1.2628	419.1	763	.504	1.1271	1.3460	432.7	375	.738
490	7.1261-6	-2630.3	8.8868	28.652	250	1.0817	-1.0038	1.6469	1.2537	422.2	829	.496	1.1317	1.3448	437.3	385	.735
500	6.9711-6	-2613.4	8.9209	28.601	254	1.0956	-1.0045	1.7321	1.2453	425.4	895	.491	1.1364	1.3437	441.9	394	.731
510	6.8205-6	-2595.6	8.9561	28.543	258	1.1103	-1.0053	1.8211	1.2375	428.8	959	.489	1.1413	1.3427	446.6	404	.728
520	6.6740-6	-2577.0	8.9924	28.478	262	1.1253	-1.0061	1.9119	1.2305	432.2	1018	.491	1.1464	1.3417	451.3	415	.723
530	6.5316-6	-2557.4	9.0296	28.406	265	1.1401	-1.0069	2.0020	1.2242	435.8	1070	.497	1.1516	1.3408	456.1	425	.719
540	6.3930-6	-2536.9	9.0679	28.328	269	1.1542	-1.0077	2.0883	1.2189	439.5	1112	.506	1.1569	1.3399	460.8	437	.714
550	6.2583-6	-2515.7	9.1069	28.244	273	1.1666	-1.0084	2.1667	1.2144	443.4	1143	.518	1.1624	1.3391	465.6	448	.709
560	6.1275-6	-2493.7	9.1466	28.157	277	1.1765	-1.0089	2.2322	1.2109	447.5	1159	.534	1.1678	1.3384	470.4	460	.704
570	6.0009-6	-2471.1	9.1865	28.068	281	1.1827	-1.0093	2.2783	1.2086	451.7	1159	.552	1.1733	1.3378	475.3	471	.699
580	5.8786-6	-2448.2	9.2264	27.978	285	1.1836	-1.0094	2.2965	1.2076	456.2	1140	.573	1.1786	1.3371	480.1	483	.695
590	5.7611-6	-2425.3	9.2655	27.892	288	1.1777	-1.0091	2.2771	1.2084	461.0	1099	.597	1.1838	1.3366	484.8	494	.690

TABLE 11.1D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.6488-6	-2402.8	9.3033	27.811	292	1.1636	-1.0084	2.2109	1.2116	466.2	1038	.622	1.1887	1.3360	489.5	505	.687
610	5.5421-6	-2381.2	9.3390	27.741	295	1.1411	-1.0073	2.0955	1.2179	471.9	959	.645	1.1933	1.3354	494.1	516	.683
620	5.4415-6	-2361.0	9.3718	27.684	299	1.1123	-1.0058	1.9422	1.2277	478.1	872	.665	1.1976	1.3347	498.5	525	.681
630	5.3468-6	-2342.4	9.4016	27.641	302	1.0819	-1.0043	1.7775	1.2404	484.8	792	.678	1.2014	1.3340	502.8	534	.680
640	5.2576-6	-2325.4	9.4284	27.611	306	1.0551	-1.0029	1.6316	1.2540	491.6	729	.685	1.2048	1.3332	506.9	543	.679
650	5.1732-6	-2309.7	9.4528	27.592	309	1.0348	-1.0018	1.5221	1.2661	498.0	686	.686	1.2081	1.3323	510.8	550	.679
660	5.0927-6	-2294.8	9.4754	27.581	312	1.0211	-1.0011	1.4498	1.2750	503.7	661	.685	1.2111	1.3314	514.7	558	.679
670	5.0154-6	-2280.6	9.4969	27.574	316	1.0125	-1.0007	1.4062	1.2807	508.7	649	.684	1.2140	1.3305	518.4	565	.679
680	4.9410-6	-2266.6	9.5175	27.570	319	1.0073	-1.0004	1.3819	1.2838	513.1	645	.683	1.2168	1.3295	522.2	571	.679
690	4.8689-6	-2252.9	9.5376	27.568	322	1.0043	-1.0002	1.3692	1.2853	517.2	647	.683	1.2196	1.3285	525.8	578	.680
700	4.7992-6	-2239.2	9.5572	27.566	326	1.0025	-1.0001	1.3632	1.2858	521.0	651	.682	1.2224	1.3276	529.4	585	.681
710	4.7314-6	-2225.6	9.5765	27.565	329	1.0015	-1.0001	1.3609	1.2857	524.7	656	.682	1.2252	1.3266	533.0	592	.681
720	4.6656-6	-2212.0	9.5956	27.565	332	1.0009	-1.0000	1.3608	1.2854	528.3	662	.682	1.2279	1.3256	536.6	598	.682
730	4.6017-6	-2198.4	9.6143	27.565	335	1.0005	-1.0000	1.3617	1.2849	531.9	669	.683	1.2306	1.3247	540.1	605	.683
740	4.5395-6	-2184.8	9.6329	27.565	339	1.0003	-1.0000	1.3630	1.2844	535.4	676	.683	1.2334	1.3237	543.6	611	.683
750	4.4789-6	-2171.1	9.6512	27.564	342	1.0002	-1.0000	1.3646	1.2839	538.9	683	.683	1.2361	1.3228	547.0	618	.684
760	4.4200-6	-2157.5	9.6693	27.564	345	1.0001	-1.0000	1.3663	1.2834	542.4	690	.683	1.2388	1.3219	550.5	624	.685
770	4.3626-6	-2143.8	9.6871	27.564	348	1.0001	-1.0000	1.3679	1.2830	545.9	697	.683	1.2414	1.3210	553.9	631	.685
780	4.3066-6	-2130.1	9.7048	27.564	351	1.0001	-1.0000	1.3693	1.2825	549.3	704	.684	1.2441	1.3200	557.3	637	.686
790	4.2521-6	-2116.4	9.7223	27.564	354	1.0000	-1.0000	1.3707	1.2822	552.8	710	.684	1.2468	1.3191	560.7	644	.686
800	4.1990-6	-2102.7	9.7395	27.564	358	1.0000	-1.0000	1.3719	1.2818	556.2	717	.684	1.2495	1.3182	564.0	650	.687
810	4.1471-6	-2089.0	9.7566	27.564	361	1.0000	-1.0000	1.3731	1.2815	559.6	723	.684	1.2521	1.3174	567.3	657	.688
820	4.0966-6	-2075.3	9.7734	27.564	364	1.0000	-1.0000	1.3741	1.2813	562.9	730	.685	1.2547	1.3165	570.6	663	.688
830	4.0472-6	-2061.5	9.7901	27.564	367	1.0000	-1.0000	1.3750	1.2810	566.3	736	.685	1.2574	1.3156	573.9	669	.689
840	3.9990-6	-2047.8	9.8065	27.564	370	1.0000	-1.0000	1.3758	1.2808	569.7	742	.685	1.2600	1.3148	577.2	676	.690
850	3.9520-6	-2034.0	9.8228	27.564	373	1.0000	-1.0000	1.3765	1.2806	573.0	748	.686	1.2626	1.3139	580.4	682	.690
860	3.9060-6	-2020.2	9.8389	27.564	376	1.0000	-1.0000	1.3772	1.2805	576.3	754	.686	1.2651	1.3131	583.6	688	.691
870	3.8611-6	-2006.4	9.8549	27.564	379	1.0000	-1.0000	1.3778	1.2803	579.6	760	.686	1.2677	1.3122	586.8	695	.691
880	3.8172-6	-1992.7	9.8706	27.564	382	1.0000	-1.0000	1.3783	1.2801	582.9	766	.687	1.2703	1.3114	590.0	701	.692
890	3.7744-6	-1978.9	9.8862	27.564	385	1.0000	-1.0000	1.3788	1.2800	586.2	772	.687	1.2728	1.3106	593.2	707	.693
900	3.7324-6	-1965.1	9.9016	27.564	388	1.0000	-1.0000	1.3793	1.2799	589.5	778	.687	1.2753	1.3098	596.3	713	.693
910	3.6914-6	-1951.3	9.9168	27.564	391	1.0000	-1.0000	1.3797	1.2798	592.7	784	.688	1.2778	1.3090	599.4	720	.694
920	3.6513-6	-1937.5	9.9319	27.564	394	1.0000	-1.0000	1.3802	1.2797	595.9	790	.688	1.2802	1.3082	602.5	726	.694
930	3.6120-6	-1923.7	9.9468	27.564	397	1.0000	-1.0000	1.3805	1.2796	599.1	795	.689	1.2827	1.3075	605.6	732	.695
940	3.5736-6	-1909.9	9.9616	27.564	400	1.0000	-1.0000	1.3809	1.2795	602.3	801	.689	1.2851	1.3067	608.7	738	.695
950	3.5360-6	-1896.1	9.9762	27.564	402	1.0000	-1.0000	1.3813	1.2794	605.5	807	.689	1.2875	1.3060	611.7	745	.696
960	3.4991-6	-1882.3	9.9907	27.564	405	1.0000	-1.0000	1.3816	1.2793	608.6	812	.690	1.2899	1.3052	614.8	751	.696
970	3.4631-6	-1868.4	10.0050	27.564	408	1.0000	-1.0000	1.3819	1.2792	611.8	818	.690	1.2922	1.3045	617.8	757	.697
980	3.4277-6	-1854.6	10.0192	27.564	411	1.0000	-1.0000	1.3823	1.2791	614.9	823	.690	1.2945	1.3038	620.8	763	.697
990	3.3931-6	-1840.8	10.0332	27.564	414	1.0000	-1.0000	1.3826	1.2790	618.0	829	.691	1.2968	1.3031	623.8	769	.698

TABLE 11.1D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3592-6	-1827.0	10.0471	27.564	417	1.0000	-1.0000	1.3829	1.2790	621.1	834	.691	1.2991	1.3024	626.8	776	.698
1050	3.1992-6	-1757.8	10.1146	27.564	431	1.0000	-1.0000	1.3845	1.2786	636.4	861	.693	1.3099	1.2992	641.5	806	.700
1100	3.0538-6	-1688.5	10.1791	27.564	445	1.0000	-1.0000	1.3865	1.2780	651.2	888	.694	1.3203	1.2961	655.8	837	.702
1150	2.9210-6	-1619.1	10.2408	27.564	458	1.0000	-1.0000	1.3891	1.2774	665.7	915	.696	1.3304	1.2932	669.8	867	.703
1200	2.7993-6	-1549.6	10.3000	27.564	472	1.0000	-1.0000	1.3922	1.2766	679.8	942	.697	1.3400	1.2905	683.5	897	.704
1250	2.6873-6	-1479.9	10.3569	27.564	485	1.0000	-1.0000	1.3957	1.2757	693.5	969	.699	1.3493	1.2879	696.9	927	.705
1300	2.5840-6	-1410.0	10.4117	27.564	498	1.0000	-1.0000	1.3996	1.2747	707.0	996	.699	1.3582	1.2855	710.0	957	.706
1350	2.4883-6	-1339.9	10.4646	27.564	511	1.0000	-1.0000	1.4039	1.2737	720.2	1024	.700	1.3667	1.2832	722.9	987	.707
1400	2.3994-6	-1269.6	10.5157	27.564	523	1.0001	-1.0000	1.4086	1.2726	733.1	1053	.700	1.3749	1.2811	735.5	1017	.708
1450	2.3166-6	-1199.1	10.5652	27.564	536	1.0002	-1.0000	1.4138	1.2713	745.7	1083	.700	1.3827	1.2790	747.9	1046	.708
1500	2.2394-6	-1128.2	10.6132	27.564	549	1.0003	-1.0000	1.4197	1.2700	758.0	1116	.698	1.3901	1.2771	760.2	1076	.709
1550	2.1671-6	-1057.1	10.6599	27.563	561	1.0006	-1.0000	1.4267	1.2685	770.1	1151	.695	1.3972	1.2753	772.2	1106	.709
1600	2.0994-6	-985.5	10.7053	27.563	573	1.0010	-1.0000	1.4353	1.2667	781.9	1192	.690	1.4040	1.2737	784.0	1135	.709
1650	2.0357-6	-913.5	10.7497	27.562	585	1.0016	-1.0000	1.4462	1.2646	793.4	1240	.682	1.4104	1.2721	795.7	1164	.709
1700	1.9757-6	-840.9	10.7930	27.560	597	1.0026	-1.0001	1.4608	1.2619	804.5	1298	.672	1.4166	1.2706	807.2	1193	.709
1750	1.9190-6	-767.3	10.8357	27.557	609	1.0042	-1.0001	1.4810	1.2584	815.1	1371	.658	1.4224	1.2692	818.6	1223	.708
1800	1.8655-6	-692.6	10.8778	27.553	621	1.0067	-1.0002	1.5099	1.2537	825.2	1465	.640	1.4280	1.2679	829.9	1252	.708
1850	1.8146-6	-616.1	10.9197	27.547	632	1.0107	-1.0003	1.5523	1.2473	834.5	1588	.618	1.4333	1.2668	841.0	1281	.707
1900	1.7662-6	-537.0	10.9619	27.537	644	1.0169	-1.0005	1.6163	1.2386	842.9	1753	.594	1.4384	1.2657	852.1	1311	.707
1950	1.7200-6	-453.9	11.0050	27.522	655	1.0268	-1.0009	1.7145	1.2269	850.2	1979	.568	1.4432	1.2647	863.2	1340	.706
2000	1.6755-6	-364.7	11.0502	27.498	666	1.0426	-1.0014	1.8666	1.2117	856.0	2294	.542	1.4478	1.2640	874.3	1370	.704
2050	1.6325-6	-265.9	11.0990	27.461	677	1.0676	-1.0022	2.0994	1.1936	860.7	2739	.519	1.4521	1.2634	885.5	1400	.703
2100	1.5903-6	-152.9	11.1534	27.405	688	1.1055	-1.0035	2.4422	1.1741	864.9	3367	.499	1.4562	1.2632	897.1	1431	.700
2150	1.5486-6	-19.6	11.2161	27.320	699	1.1591	-1.0054	2.9122	1.1560	869.7	4235	.481	1.4599	1.2633	909.2	1463	.697
2200	1.5067-6	140.3	11.2896	27.200	709	1.2285	-1.0080	3.5011	1.1413	876.1	5378	.462	1.4634	1.2640	922.0	1497	.693
2250	1.4644-6	332.0	11.3758	27.036	719	1.3109	-1.0112	4.1778	1.1304	884.4	6805	.441	1.4667	1.2653	935.7	1532	.688
2300	1.4214-6	559.0	11.4755	26.825	728	1.4030	-1.0149	4.9098	1.1228	894.7	8500	.421	1.4697	1.2672	950.5	1570	.682
2350	1.3777-6	823.6	11.5893	26.566	737	1.5024	-1.0191	5.6770	1.1178	906.7	10435	.401	1.4727	1.2699	966.4	1612	.673
2400	1.3333-6	1127.1	11.7171	26.258	746	1.6076	-1.0238	6.4697	1.1145	920.3	12567	.384	1.4756	1.2732	983.7	1658	.663
2450	1.2884-6	1470.8	11.8588	25.902	754	1.7169	-1.0288	7.2791	1.1125	935.4	14826	.370	1.4786	1.2773	1002.3	1709	.652
2500	1.2431-6	1855.0	12.0140	25.501	762	1.8275	-1.0342	8.0880	1.1116	951.9	17100	.360	1.4817	1.2821	1022.3	1766	.639
2550	1.1976-6	2279.1	12.1819	25.060	769	1.9343	-1.0397	8.8632	1.1115	969.7	19236	.355	1.4851	1.2877	1043.8	1830	.624
2600	1.1524-6	2739.9	12.3609	24.586	777	2.0297	-1.0450	9.5526	1.1122	988.9	21039	.353	1.4887	1.2939	1066.6	1899	.609
2650	1.1079-6	3231.7	12.5482	24.090	785	2.1044	-1.0495	10.0871	1.1136	1009.2	22301	.355	1.4926	1.3008	1090.7	1973	.594
2700	1.0646-6	3744.8	12.7400	23.587	792	2.1481	-1.0528	10.3908	1.1157	1030.5	22844	.360	1.4967	1.3081	1115.8	2051	.578
2750	1.0234-6	4265.9	12.9312	23.093	800	2.1529	-1.0543	10.4002	1.1187	1052.5	22569	.369	1.5009	1.3156	1141.3	2130	.564
2800	9.8470-7	4779.4	13.1163	22.624	808	2.1154	-1.0538	10.0868	1.1226	1074.8	21497	.379	1.5050	1.3231	1166.8	2209	.551
2850	9.4910-7	5269.6	13.2898	22.196	817	2.0393	-1.0513	9.4740	1.1276	1097.2	19779	.391	1.5090	1.3302	1191.7	2285	.539
2900	9.1684-7	5723.0	13.4476	21.818	825	1.9339	-1.0471	8.6353	1.1337	1119.3	17654	.404	1.5128	1.3367	1215.4	2356	.530
2950	8.8793-7	6131.0	13.5871	21.494	834	1.8125	-1.0419	7.6735	1.1412	1141.2	15383	.416	1.5162	1.3425	1237.7	2422	.522
3000	8.6219-7	6490.0	13.7078	21.225	843	1.6879	-1.0362	6.6910	1.1502	1162.6	13186	.428	1.5192	1.3474	1258.4	2483	.516

TABLE 11.2D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	1.7605-4	-2969.2	7.2039	28.892	115	1.0000	-1.0000	1.0444	1.3803	281.9	154 .777	1.0444	1.3803	281.9	154 .777
210	1.6767-4	-2958.8	7.2549	28.892	120	1.0000	-1.0000	1.0463	1.3794	288.7	163 .773	1.0463	1.3794	288.7	163 .773
220	1.6004-4	-2948.3	7.3036	28.892	126	1.0000	-1.0000	1.0483	1.3784	295.4	171 .769	1.0483	1.3784	295.4	171 .769
230	1.5309-4	-2937.8	7.3502	28.892	131	1.0000	-1.0000	1.0504	1.3774	301.9	180 .766	1.0504	1.3774	301.9	180 .766
240	1.4671-4	-2927.3	7.3950	28.892	136	1.0000	-1.0000	1.0525	1.3763	308.3	188 .763	1.0525	1.3763	308.3	188 .763
250	1.4084-4	-2916.7	7.4380	28.892	141	1.0000	-1.0000	1.0548	1.3752	314.5	196 .761	1.0548	1.3752	314.5	196 .761
260	1.3542-4	-2906.2	7.4794	28.892	147	1.0000	-1.0000	1.0571	1.3741	320.6	204 .759	1.0571	1.3741	320.6	204 .759
270	1.3041-4	-2895.6	7.5193	28.892	152	1.0000	-1.0000	1.0596	1.3729	326.6	212 .757	1.0594	1.3729	326.6	212 .757
280	1.2575-4	-2885.0	7.5579	28.892	157	1.0000	-1.0000	1.0621	1.3717	332.5	220 .756	1.0619	1.3718	332.5	220 .756
290	1.2141-4	-2874.4	7.5952	28.892	162	1.0000	-1.0000	1.0648	1.3704	338.2	228 .755	1.0644	1.3706	338.2	228 .755
298	1.1809-4	-2865.7	7.6248	28.892	166	1.0001	-1.0000	1.0671	1.3693	342.8	234 .754	1.0665	1.3696	342.8	234 .755
300	1.1737-4	-2863.7	7.6314	28.892	166	1.0001	-1.0000	1.0676	1.3691	343.8	236 .754	1.0669	1.3693	343.8	235 .755
310	1.1358-4	-2853.0	7.6664	28.892	171	1.0001	-1.0000	1.0706	1.3677	349.3	244 .753	1.0696	1.3681	349.4	243 .755
320	1.1003-4	-2842.3	7.7005	28.892	176	1.0002	-1.0000	1.0739	1.3662	354.7	251 .752	1.0723	1.3668	354.8	250 .755
330	1.0669-4	-2831.5	7.7336	28.891	181	1.0003	-1.0000	1.0775	1.3647	360.0	259 .751	1.0750	1.3656	360.1	257 .755
340	1.0355-4	-2820.7	7.7658	28.891	185	1.0004	-1.0000	1.0814	1.3630	365.2	268 .749	1.0778	1.3643	365.4	265 .755
350	1.0059-4	-2809.9	7.7972	28.891	190	1.0006	-1.0000	1.0859	1.3611	370.3	276 .747	1.0807	1.3629	370.5	272 .755
360	9.7798-5	-2799.0	7.8279	28.890	195	1.0009	-1.0000	1.0910	1.3591	375.3	286 .743	1.0836	1.3616	375.6	279 .755
370	9.5152-5	-2788.1	7.8578	28.889	199	1.0013	-1.0000	1.0969	1.3569	380.1	296 .739	1.0866	1.3603	380.6	287 .754
380	9.2644-5	-2777.1	7.8872	28.888	204	1.0018	-1.0001	1.1037	1.3544	384.9	307 .733	1.0897	1.3589	385.5	294 .754
390	9.0264-5	-2766.0	7.9160	28.886	208	1.0025	-1.0001	1.1117	1.3516	389.5	319 .725	1.0928	1.3576	390.4	302 .753
400	8.8001-5	-2754.8	7.9442	28.884	212	1.0034	-1.0001	1.1210	1.3484	394.0	332 .717	1.0959	1.3562	395.2	309 .752
410	8.5846-5	-2743.6	7.9720	28.881	217	1.0045	-1.0002	1.1318	1.3449	398.4	347 .707	1.0991	1.3549	399.9	317 .752
420	8.3792-5	-2732.2	7.9994	28.878	221	1.0060	-1.0002	1.1446	1.3410	402.7	364 .695	1.1024	1.3535	404.6	324 .751
430	8.1830-5	-2720.7	8.0265	28.873	225	1.0077	-1.0003	1.1595	1.3367	406.8	382 .682	1.1057	1.3521	409.2	332 .751
440	7.9954-5	-2709.0	8.0534	28.867	229	1.0099	-1.0004	1.1768	1.3319	410.8	404 .668	1.1091	1.3508	413.7	339 .750
450	7.8158-5	-2697.1	8.0801	28.860	233	1.0126	-1.0005	1.1969	1.3267	414.7	428 .653	1.1126	1.3494	418.3	346 .749
460	7.6435-5	-2685.0	8.1066	28.851	237	1.0158	-1.0007	1.2200	1.3211	418.5	455 .637	1.1162	1.3481	422.7	354 .749
470	7.4780-5	-2672.7	8.1331	28.840	241	1.0196	-1.0009	1.2465	1.3150	422.1	485 .621	1.1198	1.3467	427.2	361 .748
480	7.3188-5	-2660.1	8.1597	28.827	245	1.0241	-1.0011	1.2767	1.3086	425.6	519 .604	1.1235	1.3454	431.6	369 .747
490	7.1656-5	-2647.2	8.1864	28.811	249	1.0293	-1.0014	1.3108	1.3019	429.1	556 .588	1.1273	1.3441	436.0	377 .746
500	7.0177-5	-2633.9	8.2132	28.792	253	1.0353	-1.0017	1.3490	1.2949	432.4	596 .573	1.1312	1.3428	440.3	385 .745
510	6.8748-5	-2620.2	8.2403	28.770	257	1.0421	-1.0020	1.3916	1.2878	435.7	640 .559	1.1352	1.3415	444.7	393 .743
520	6.7366-5	-2606.0	8.2678	28.745	261	1.0497	-1.0024	1.4387	1.2806	438.9	687 .547	1.1393	1.3403	449.0	401 .741
530	6.6027-5	-2591.4	8.2957	28.715	265	1.0582	-1.0029	1.4903	1.2734	442.1	737 .536	1.1435	1.3391	453.3	410 .739
540	6.4728-5	-2576.2	8.3241	28.682	269	1.0676	-1.0034	1.5464	1.2663	445.2	788 .528	1.1478	1.3379	457.6	419 .737
550	6.3467-5	-2560.4	8.3530	28.643	273	1.0777	-1.0039	1.6069	1.2593	448.4	840 .521	1.1522	1.3368	462.0	428 .734
560	6.2240-5	-2544.1	8.3825	28.601	276	1.0886	-1.0045	1.6715	1.2525	451.6	893 .517	1.1567	1.3357	466.3	437 .731
570	6.1046-5	-2527.0	8.4127	28.553	280	1.1001	-1.0052	1.7398	1.2459	454.8	945 .516	1.1612	1.3347	470.7	447 .728
580	5.9883-5	-2509.2	8.4436	28.500	284	1.1121	-1.0058	1.8112	1.2397	458.0	996 .516	1.1659	1.3337	475.0	457 .725
590	5.8750-5	-2490.8	8.4752	28.443	288	1.1243	-1.0065	1.8850	1.2338	461.3	1044 .520	1.1706	1.3328	479.4	467 .721

TABLE 11.2D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
600	5.7644-5	-2471.5	8.5075	28.380	291	1.1365	-1.0072	1.9599	1.2283	464.7	1087	.525	1.1754	1.3320	483.9	477 .718
610	5.6566-5	-2451.6	8.5405	28.314	295	1.1484	-1.0079	2.0343	1.2232	468.1	1126	.533	1.1803	1.3312	488.3	488 .714
620	5.5514-5	-2430.9	8.5741	28.243	299	1.1594	-1.0085	2.1055	1.2186	471.6	1157	.543	1.1851	1.3305	492.8	498 .710
630	5.4489-5	-2409.5	8.6084	28.169	302	1.1688	-1.0091	2.1702	1.2147	475.3	1180	.555	1.1900	1.3299	497.3	509 .706
640	5.3492-5	-2387.5	8.6430	28.092	306	1.1759	-1.0095	2.2234	1.2115	479.0	1192	.570	1.1948	1.3293	501.8	520 .702
650	5.2524-5	-2365.1	8.6777	28.015	309	1.1795	-1.0097	2.2585	1.2094	483.0	1189	.587	1.1995	1.3288	506.3	531 .699
660	5.1587-5	-2342.4	8.7123	27.938	312	1.1783	-1.0096	2.2677	1.2086	487.2	1170	.605	1.2041	1.3283	510.8	541 .695
670	5.0683-5	-2319.8	8.7463	27.865	316	1.1711	-1.0093	2.2430	1.2094	491.7	1133	.625	1.2085	1.3279	515.2	551 .692
680	4.9816-5	-2297.7	8.7791	27.797	319	1.1570	-1.0085	2.1792	1.2125	496.6	1079	.645	1.2127	1.3274	519.6	561 .690
690	4.8989-5	-2276.4	8.8102	27.737	322	1.1365	-1.0074	2.0776	1.2179	501.9	1011	.663	1.2167	1.3269	523.9	571 .687
700	4.8203-5	-2256.2	8.8392	27.688	326	1.1115	-1.0061	1.9489	1.2259	507.6	937	.677	1.2204	1.3264	528.0	580 .686
710	4.7457-5	-2237.4	8.8659	27.649	329	1.0854	-1.0047	1.8122	1.2358	513.7	868	.687	1.2238	1.3258	532.0	588 .685
720	4.6750-5	-2219.9	8.8903	27.621	332	1.0617	-1.0034	1.6869	1.2465	519.8	811	.691	1.2270	1.3251	535.9	596 .684
730	4.6077-5	-2203.6	8.9129	27.601	335	1.0424	-1.0024	1.5856	1.2564	525.6	769	.691	1.2301	1.3243	539.6	603 .684
740	4.5433-5	-2188.1	8.9339	27.588	339	1.0282	-1.0016	1.5114	1.2646	531.1	742	.690	1.2330	1.3235	543.3	610 .684
750	4.4813-5	-2173.3	8.9538	27.579	342	1.0183	-1.0010	1.4607	1.2707	536.0	725	.688	1.2359	1.3226	546.9	617 .684
760	4.4215-5	-2158.9	8.9730	27.574	345	1.0118	-1.0007	1.4277	1.2748	540.5	717	.687	1.2386	1.3218	550.4	624 .685
770	4.3635-5	-2144.7	8.9915	27.570	348	1.0076	-1.0004	1.4070	1.2774	544.6	714	.686	1.2414	1.3209	553.8	631 .685
780	4.3072-5	-2130.7	9.0095	27.568	351	1.0049	-1.0003	1.3943	1.2790	548.5	715	.685	1.2441	1.3200	557.2	637 .686
790	4.2525-5	-2116.8	9.0272	27.567	354	1.0031	-1.0002	1.3866	1.2799	552.2	717	.685	1.2468	1.3191	560.6	644 .686
800	4.1992-5	-2103.0	9.0447	27.566	358	1.0020	-1.0001	1.3822	1.2804	555.8	722	.685	1.2494	1.3182	564.0	650 .687
810	4.1473-5	-2089.2	9.0618	27.565	361	1.0013	-1.0001	1.3797	1.2806	559.3	726	.685	1.2521	1.3173	567.3	657 .688
820	4.0967-5	-2075.4	9.0787	27.565	364	1.0009	-1.0001	1.3784	1.2807	562.8	732	.685	1.2547	1.3165	570.6	663 .688
830	4.0473-5	-2061.6	9.0954	27.565	367	1.0006	-1.0000	1.3778	1.2806	566.2	737	.685	1.2574	1.3156	573.9	669 .689
840	3.9991-5	-2047.8	9.1119	27.565	370	1.0004	-1.0000	1.3777	1.2806	569.6	743	.686	1.2600	1.3147	577.2	676 .690
850	3.9520-5	-2034.0	9.1282	27.565	373	1.0003	-1.0000	1.3778	1.2805	573.0	749	.686	1.2626	1.3139	580.4	682 .690
860	3.9060-5	-2020.2	9.1444	27.564	376	1.0002	-1.0000	1.3781	1.2803	576.3	755	.686	1.2651	1.3131	583.6	688 .691
870	3.8611-5	-2006.5	9.1603	27.564	379	1.0001	-1.0000	1.3784	1.2802	579.6	761	.686	1.2677	1.3122	586.8	695 .691
880	3.8173-5	-1992.7	9.1760	27.564	382	1.0001	-1.0000	1.3788	1.2801	582.9	767	.687	1.2702	1.3114	590.0	701 .692
890	3.7744-5	-1978.9	9.1916	27.564	385	1.0001	-1.0000	1.3791	1.2800	586.2	772	.687	1.2728	1.3106	593.2	707 .693
900	3.7324-5	-1965.1	9.2070	27.564	388	1.0000	-1.0000	1.3795	1.2799	589.4	778	.687	1.2753	1.3098	596.3	713 .693
910	3.6914-5	-1951.3	9.2223	27.564	391	1.0000	-1.0000	1.3799	1.2798	592.7	784	.688	1.2778	1.3090	599.4	720 .694
920	3.6513-5	-1937.5	9.2374	27.564	394	1.0000	-1.0000	1.3803	1.2797	595.9	790	.688	1.2802	1.3082	602.5	726 .694
930	3.6120-5	-1923.7	9.2523	27.564	397	1.0000	-1.0000	1.3806	1.2796	599.1	795	.689	1.2827	1.3075	605.6	732 .695
940	3.5736-5	-1909.9	9.2671	27.564	400	1.0000	-1.0000	1.3810	1.2795	602.3	801	.689	1.2851	1.3067	608.7	738 .695
950	3.5360-5	-1896.1	9.2817	27.564	402	1.0000	-1.0000	1.3813	1.2794	605.5	807	.689	1.2875	1.3060	611.7	745 .696
960	3.4991-5	-1882.3	9.2961	27.564	405	1.0000	-1.0000	1.3816	1.2793	608.6	812	.690	1.2899	1.3052	614.8	751 .696
970	3.4631-5	-1868.4	9.3105	27.564	408	1.0000	-1.0000	1.3820	1.2792	611.8	818	.690	1.2922	1.3045	617.8	757 .697
980	3.4277-5	-1854.6	9.3246	27.564	411	1.0000	-1.0000	1.3823	1.2791	614.9	823	.690	1.2945	1.3038	620.8	763 .697
990	3.3931-5	-1840.8	9.3387	27.564	414	1.0000	-1.0000	1.3826	1.2790	618.0	829	.691	1.2968	1.3031	623.8	769 .698

TABLE 11.2D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3592-5	-1827.0	9.3526	27.564	417	1.0000	-1.0000	1.3829	1.2790	621.1	834	.691	1.2991	1.3024	626.8	776	.698
1050	3.1992-5	-1757.8	9.4201	27.564	431	1.0000	-1.0000	1.3845	1.2786	636.4	861	.693	1.3099	1.2992	641.5	806	.700
1100	3.0538-5	-1688.5	9.4845	27.564	445	1.0000	-1.0000	1.3865	1.2780	651.2	888	.694	1.3203	1.2961	655.8	837	.702
1150	2.9210-5	-1619.1	9.5462	27.564	458	1.0000	-1.0000	1.3891	1.2774	665.7	915	.696	1.3304	1.2932	669.8	867	.703
1200	2.7993-5	-1549.6	9.6054	27.564	472	1.0000	-1.0000	1.3921	1.2766	679.8	942	.697	1.3400	1.2905	683.5	897	.704
1250	2.6873-5	-1479.9	9.6623	27.564	485	1.0000	-1.0000	1.3956	1.2757	693.6	968	.699	1.3493	1.2879	696.9	927	.705
1300	2.5840-5	-1410.0	9.7171	27.564	498	1.0000	-1.0000	1.3994	1.2748	707.0	996	.700	1.3582	1.2855	710.0	957	.706
1350	2.4883-5	-1340.0	9.7700	27.564	511	1.0000	-1.0000	1.4035	1.2738	720.2	1023	.701	1.3667	1.2832	722.9	987	.707
1400	2.3994-5	-1269.7	9.8211	27.564	523	1.0000	-1.0000	1.4078	1.2727	733.1	1051	.701	1.3749	1.2811	735.5	1017	.708
1450	2.3167-5	-1199.2	9.8706	27.564	536	1.0001	-1.0000	1.4125	1.2716	745.8	1079	.702	1.3826	1.2790	747.9	1046	.708
1500	2.2394-5	-1128.4	9.9186	27.564	549	1.0001	-1.0000	1.4173	1.2704	758.2	1108	.702	1.3901	1.2771	760.2	1076	.709
1550	2.1672-5	-1057.4	9.9651	27.564	561	1.0002	-1.0000	1.4226	1.2692	770.3	1138	.701	1.3972	1.2753	772.2	1105	.709
1600	2.0994-5	-986.2	10.0104	27.564	573	1.0003	-1.0000	1.4283	1.2679	782.3	1169	.700	1.4039	1.2736	784.0	1135	.709
1650	2.0358-5	-914.6	10.0544	27.563	585	1.0005	-1.0000	1.4347	1.2665	794.0	1203	.698	1.4104	1.2721	795.7	1164	.709
1700	1.9759-5	-842.7	10.0974	27.563	597	1.0008	-1.0000	1.4422	1.2650	805.4	1240	.694	1.4165	1.2706	807.2	1193	.709
1750	1.9194-5	-770.3	10.1393	27.562	609	1.0013	-1.0000	1.4513	1.2632	816.6	1282	.689	1.4224	1.2692	818.5	1222	.709
1800	1.8660-5	-697.5	10.1803	27.561	621	1.0020	-1.0001	1.4627	1.2611	827.5	1330	.682	1.4279	1.2679	829.7	1251	.708
1850	1.8154-5	-624.0	10.2206	27.559	632	1.0032	-1.0001	1.4776	1.2585	838.1	1387	.674	1.4332	1.2666	840.8	1280	.708
1900	1.7675-5	-549.7	10.2603	27.556	644	1.0049	-1.0002	1.4977	1.2551	848.3	1456	.662	1.4382	1.2655	851.8	1309	.708
1950	1.7219-5	-474.1	10.2995	27.552	655	1.0074	-1.0002	1.5254	1.2508	857.9	1541	.649	1.4430	1.2644	862.6	1338	.707
2000	1.6784-5	-396.9	10.3386	27.545	667	1.0112	-1.0004	1.5643	1.2452	867.0	1648	.633	1.4476	1.2635	873.3	1366	.706
2050	1.6369-5	-317.4	10.3779	27.536	678	1.0168	-1.0006	1.6201	1.2379	875.3	1785	.615	1.4519	1.2626	884.0	1395	.705
2100	1.5972-5	-234.5	10.4178	27.522	689	1.0254	-1.0008	1.7004	1.2284	882.8	1965	.596	1.4560	1.2618	894.7	1424	.705
2150	1.5589-5	-146.8	10.4591	27.502	700	1.0381	-1.0013	1.8163	1.2167	889.3	2203	.577	1.4598	1.2612	905.4	1452	.703
2200	1.5218-5	-52.1	10.5026	27.472	711	1.0567	-1.0019	1.9808	1.2029	894.9	2522	.558	1.4635	1.2607	916.2	1482	.702
2250	1.4857-5	52.3	10.5495	27.430	721	1.0831	-1.0029	2.2074	1.1879	900.1	2947	.540	1.4669	1.2605	927.2	1511	.700
2300	1.4502-5	169.8	10.6012	27.369	732	1.1188	-1.0043	2.5039	1.1732	905.4	3504	.523	1.4701	1.2605	938.5	1541	.698
2350	1.4150-5	303.9	10.6588	27.287	742	1.1640	-1.0060	2.8677	1.1600	911.4	4212	.505	1.4730	1.2608	950.2	1572	.695
2400	1.3800-5	457.5	10.7235	27.178	752	1.2176	-1.0082	3.2850	1.1493	918.6	5077	.486	1.4757	1.2615	962.4	1605	.691
2450	1.3450-5	632.9	10.7958	27.040	761	1.2776	-1.0107	3.7366	1.1411	927.2	6095	.467	1.4782	1.2627	975.3	1638	.687
2500	1.3099-5	831.5	10.8760	26.871	770	1.3422	-1.0135	4.2066	1.1350	937.0	7255	.447	1.4805	1.2642	988.9	1673	.682
2550	1.2747-5	1053.7	10.9640	26.672	779	1.4100	-1.0167	4.6854	1.1307	948.1	8545	.427	1.4827	1.2662	1003.3	1711	.675
2600	1.2394-5	1300.1	11.0597	26.442	788	1.4805	-1.0201	5.1686	1.1278	960.2	9948	.409	1.4848	1.2687	1018.4	1752	.668
2650	1.2041-5	1570.6	11.1627	26.184	797	1.5530	-1.0237	5.6540	1.1258	973.3	11440	.394	1.4869	1.2716	1034.4	1796	.660
2700	1.1689-5	1865.5	11.2730	25.897	805	1.6269	-1.0276	6.1386	1.1247	987.4	12989	.380	1.4891	1.2749	1051.3	1843	.650
2750	1.1337-5	2184.4	11.3900	25.583	813	1.7009	-1.0317	6.6161	1.1242	1002.4	14544	.370	1.4913	1.2786	1069.0	1893	.640
2800	1.0988-5	2526.8	11.5134	25.245	821	1.7731	-1.0358	7.0754	1.1243	1018.2	16043	.362	1.4937	1.2829	1087.7	1948	.629
2850	1.0642-5	2891.3	11.6424	24.887	829	1.8409	-1.0399	7.4997	1.1249	1034.9	17409	.357	1.4962	1.2875	1107.2	2007	.618
2900	1.0301-5	3275.8	11.7761	24.513	837	1.9006	-1.0438	7.8674	1.1260	1052.4	18558	.355	1.4989	1.2925	1127.5	2069	.606
2950	9.9675-6	3676.7	11.9132	24.128	845	1.9485	-1.0472	8.1532	1.1277	1070.7	19407	.355	1.5017	1.2978	1148.6	2135	.594
3000	9.6435-6	4089.3	12.0519	23.740	853	1.9805	-1.0500	8.3315	1.1298	1089.6	19886	.357	1.5046	1.3034	1170.2	2204	.582

TABLE 11.3D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
200	1.7605-3	-2969.2	6.5412	28.892	115	1.0000	-1.0000	1.0444	1.3803	281.9	154	.777	1.0444	1.3803	281.9	154	.777
210	1.6767-3	-2958.8	6.5922	28.892	120	1.0000	-1.0000	1.0463	1.3794	288.7	163	.773	1.0463	1.3794	288.7	163	.773
220	1.6004-3	-2948.3	6.6409	28.892	126	1.0000	-1.0000	1.0483	1.3784	295.4	171	.769	1.0483	1.3784	295.4	171	.769
230	1.5309-3	-2937.8	6.6876	28.892	131	1.0000	-1.0000	1.0504	1.3774	301.9	180	.766	1.0504	1.3774	301.9	180	.766
240	1.4671-3	-2927.3	6.7323	28.892	136	1.0000	-1.0000	1.0525	1.3763	308.3	188	.763	1.0525	1.3763	308.3	188	.763
250	1.4084-3	-2916.7	6.7754	28.892	141	1.0000	-1.0000	1.0548	1.3752	314.5	196	.761	1.0548	1.3752	314.5	196	.761
260	1.3542-3	-2906.2	6.8168	28.892	147	1.0000	-1.0000	1.0571	1.3741	320.6	204	.759	1.0571	1.3741	320.6	204	.759
270	1.3041-3	-2895.6	6.8567	28.892	152	1.0000	-1.0000	1.0595	1.3729	326.6	212	.757	1.0594	1.3729	326.6	212	.757
280	1.2575-3	-2885.0	6.8953	28.892	157	1.0000	-1.0000	1.0620	1.3717	332.5	220	.756	1.0619	1.3718	332.5	220	.756
290	1.2141-3	-2874.4	6.9326	28.892	162	1.0000	-1.0000	1.0645	1.3705	338.2	228	.755	1.0644	1.3706	338.2	228	.755
298	1.1809-3	-2865.7	6.9621	28.892	166	1.0000	-1.0000	1.0667	1.3695	342.8	234	.754	1.0665	1.3696	342.8	234	.755
300	1.1737-3	-2863.7	6.9687	28.892	166	1.0000	-1.0000	1.0672	1.3693	343.8	236	.754	1.0669	1.3693	343.8	235	.755
310	1.1358-3	-2853.0	7.0038	28.892	171	1.0000	-1.0000	1.0699	1.3680	349.3	243	.754	1.0696	1.3681	349.4	243	.755
320	1.1003-3	-2842.3	7.0378	28.892	176	1.0001	-1.0000	1.0728	1.3666	354.8	251	.754	1.0723	1.3668	354.8	250	.755
330	1.0670-3	-2831.6	7.0708	28.892	181	1.0001	-1.0000	1.0758	1.3653	360.1	258	.754	1.0750	1.3656	360.1	257	.755
340	1.0356-3	-2820.8	7.1030	28.892	185	1.0001	-1.0000	1.0790	1.3638	365.3	266	.753	1.0778	1.3643	365.4	265	.755
350	1.0060-3	-2810.0	7.1343	28.892	190	1.0002	-1.0000	1.0824	1.3623	370.4	273	.753	1.0807	1.3629	370.5	272	.755
360	9.7803-4	-2799.1	7.1649	28.891	195	1.0003	-1.0000	1.0860	1.3608	375.5	281	.751	1.0836	1.3616	375.6	279	.755
370	9.5159-4	-2788.3	7.1947	28.891	199	1.0004	-1.0000	1.0899	1.3592	380.4	290	.749	1.0866	1.3603	380.6	287	.754
380	9.2653-4	-2777.3	7.2238	28.891	204	1.0006	-1.0000	1.0941	1.3574	385.3	298	.747	1.0896	1.3589	385.5	294	.754
390	9.0276-4	-2766.4	7.2523	28.890	208	1.0008	-1.0000	1.0987	1.3556	390.1	307	.744	1.0926	1.3576	390.3	302	.753
400	8.8017-4	-2755.4	7.2801	28.890	212	1.0011	-1.0000	1.1038	1.3536	394.8	316	.741	1.0958	1.3562	395.1	309	.753
410	8.5868-4	-2744.3	7.3075	28.889	217	1.0014	-1.0001	1.1094	1.3516	399.4	326	.737	1.0989	1.3548	399.8	316	.752
420	8.3820-4	-2733.2	7.3343	28.888	221	1.0019	-1.0001	1.1156	1.3493	403.9	336	.732	1.1021	1.3535	404.5	324	.752
430	8.1866-4	-2722.0	7.3606	28.886	225	1.0025	-1.0001	1.1226	1.3469	408.3	347	.727	1.1054	1.3521	409.1	331	.752
440	8.0001-4	-2710.7	7.3865	28.884	229	1.0032	-1.0001	1.1304	1.3443	412.6	359	.721	1.1087	1.3507	413.6	338	.751
450	7.8217-4	-2699.4	7.4120	28.882	233	1.0040	-1.0002	1.1391	1.3415	416.9	372	.714	1.1120	1.3493	418.1	345	.751
460	7.6509-4	-2687.9	7.4371	28.879	237	1.0051	-1.0002	1.1489	1.3385	421.0	386	.707	1.1154	1.3479	422.5	353	.751
470	7.4872-4	-2676.4	7.4620	28.875	241	1.0063	-1.0003	1.1600	1.3353	425.1	401	.698	1.1188	1.3465	426.9	360	.751
480	7.3301-4	-2664.7	7.4865	28.871	245	1.0078	-1.0004	1.1723	1.3318	429.1	418	.689	1.1223	1.3452	431.2	367	.750
490	7.1792-4	-2652.9	7.5108	28.866	249	1.0096	-1.0004	1.1862	1.3282	433.0	436	.679	1.1258	1.3438	435.5	374	.750
500	7.0341-4	-2641.0	7.5349	28.860	253	1.0117	-1.0006	1.2016	1.3242	436.8	455	.668	1.1294	1.3424	439.7	382	.750
510	6.8944-4	-2628.9	7.5589	28.852	257	1.0141	-1.0007	1.2189	1.3201	440.5	477	.657	1.1330	1.3411	444.0	389	.749
520	6.7598-4	-2616.6	7.5828	28.844	261	1.0169	-1.0008	1.2382	1.3157	444.1	501	.645	1.1367	1.3397	448.1	397	.748
530	6.6299-4	-2604.1	7.6065	28.834	265	1.0201	-1.0010	1.2595	1.3110	447.6	527	.633	1.1404	1.3384	452.3	404	.747
540	6.5045-4	-2591.4	7.6303	28.822	269	1.0237	-1.0012	1.2832	1.3062	451.1	555	.621	1.1442	1.3371	456.4	412	.746
550	6.3832-4	-2578.5	7.6541	28.808	272	1.0278	-1.0014	1.3093	1.3012	454.5	585	.610	1.1480	1.3358	460.5	420	.745
560	6.2658-4	-2565.2	7.6779	28.793	276	1.0324	-1.0017	1.3381	1.2959	457.8	617	.599	1.1519	1.3346	464.6	428	.744
570	6.1521-4	-2551.7	7.7019	28.775	280	1.0376	-1.0020	1.3697	1.2906	461.0	652	.589	1.1558	1.3333	468.6	436	.742
580	6.0418-4	-2537.8	7.7260	28.755	284	1.0433	-1.0023	1.4042	1.2851	464.2	688	.579	1.1598	1.3321	472.7	444	.741
590	5.9347-4	-2523.6	7.7503	28.732	287	1.0496	-1.0026	1.4420	1.2795	467.4	726	.571	1.1638	1.3309	476.7	453	.739

TABLE 11.3D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.8306-4	-2509.0	7.7749	28.706	291	1.0564	-1.0030	1.4829	1.2738	470.5	766	.563	1.1679	1.3298	480.7	461	.737
610	5.7293-4	-2493.9	7.7998	28.678	295	1.0639	-1.0035	1.5274	1.2681	473.6	807	.557	1.1720	1.3287	484.7	470	.735
620	5.6307-4	-2478.4	7.8250	28.646	298	1.0720	-1.0039	1.5753	1.2623	476.6	850	.553	1.1762	1.3276	488.8	479	.733
630	5.5345-4	-2462.4	7.8506	28.611	302	1.0807	-1.0044	1.6268	1.2566	479.6	894	.549	1.1804	1.3266	492.8	488	.731
640	5.4407-4	-2445.9	7.8767	28.573	305	1.0900	-1.0050	1.6818	1.2509	482.7	938	.548	1.1846	1.3256	496.9	497	.728
650	5.3492-4	-2428.8	7.9032	28.531	309	1.0998	-1.0055	1.7403	1.2453	485.7	982	.547	1.1889	1.3247	500.9	506	.726
660	5.2597-4	-2411.1	7.9302	28.485	312	1.1100	-1.0061	1.8018	1.2399	488.7	1026	.549	1.1932	1.3239	505.0	515	.723
670	5.1722-4	-2392.7	7.9578	28.436	316	1.1206	-1.0068	1.8659	1.2346	491.8	1069	.551	1.1975	1.3231	509.1	525	.720
680	5.0866-4	-2373.7	7.9859	28.383	319	1.1313	-1.0074	1.9316	1.2296	494.9	1110	.556	1.2018	1.3223	513.2	534	.718
690	5.0029-4	-2354.1	8.0146	28.326	323	1.1420	-1.0080	1.9977	1.2249	498.1	1147	.562	1.2061	1.3217	517.4	544	.715
700	4.9210-4	-2333.8	8.0438	28.266	326	1.1521	-1.0086	2.0621	1.2206	501.3	1181	.569	1.2103	1.3210	521.5	554	.712
710	4.8409-4	-2312.9	8.0735	28.204	329	1.1614	-1.0091	2.1224	1.2169	504.7	1209	.578	1.2146	1.3205	525.7	564	.709
720	4.7627-4	-2291.4	8.1036	28.138	333	1.1692	-1.0096	2.1750	1.2138	508.2	1229	.588	1.2188	1.3200	529.9	574	.706
730	4.6863-4	-2269.4	8.1338	28.072	336	1.1747	-1.0099	2.2157	1.2114	511.8	1239	.600	1.2229	1.3196	534.2	583	.704
740	4.6119-4	-2247.1	8.1642	28.004	339	1.1770	-1.0101	2.2396	1.2101	515.6	1237	.614	1.2269	1.3192	538.4	593	.701
750	4.5396-4	-2224.7	8.1943	27.938	342	1.1754	-1.0100	2.2416	1.2098	519.6	1221	.628	1.2308	1.3189	542.6	603	.699
760	4.4697-4	-2202.4	8.2238	27.874	345	1.1690	-1.0097	2.2173	1.2109	523.9	1191	.643	1.2346	1.3186	546.7	612	.697
770	4.4022-4	-2180.4	8.2525	27.815	348	1.1575	-1.0090	2.1648	1.2135	528.5	1147	.658	1.2382	1.3182	550.8	621	.695
780	4.3374-4	-2159.1	8.2800	27.761	352	1.1412	-1.0081	2.0857	1.2178	533.4	1092	.671	1.2417	1.3179	554.9	630	.693
790	4.2753-4	-2138.8	8.3059	27.715	355	1.1213	-1.0070	1.9863	1.2238	538.6	1032	.683	1.2450	1.3175	558.8	638	.692
800	4.2160-4	-2119.5	8.3302	27.676	358	1.0996	-1.0058	1.8769	1.2311	544.0	972	.691	1.2482	1.3170	562.6	646	.691
810	4.1594-4	-2101.2	8.3529	27.646	361	1.0784	-1.0046	1.7692	1.2393	549.5	918	.695	1.2512	1.3164	566.3	654	.691
820	4.1052-4	-2084.0	8.3740	27.622	364	1.0594	-1.0035	1.6728	1.2476	554.9	874	.697	1.2541	1.3158	569.9	661	.690
830	4.0532-4	-2067.7	8.3937	27.605	367	1.0436	-1.0026	1.5933	1.2552	560.2	840	.696	1.2570	1.3151	573.4	668	.690
840	4.0032-4	-2052.1	8.4124	27.593	370	1.0313	-1.0019	1.5315	1.2616	565.1	815	.695	1.2597	1.3144	576.8	675	.691
850	3.9548-4	-2037.0	8.4303	27.584	373	1.0221	-1.0013	1.4859	1.2668	569.7	800	.693	1.2624	1.3137	580.1	681	.691
860	3.9080-4	-2022.3	8.4475	27.578	376	1.0155	-1.0009	1.4533	1.2706	574.0	790	.692	1.2650	1.3129	583.4	688	.691
870	3.8625-4	-2007.9	8.4641	27.574	379	1.0108	-1.0007	1.4305	1.2734	578.0	785	.690	1.2676	1.3121	586.7	694	.692
880	3.8182-4	-1993.7	8.4804	27.571	382	1.0076	-1.0005	1.4148	1.2754	581.8	783	.690	1.2702	1.3113	589.9	701	.692
890	3.7750-4	-1979.6	8.4963	27.569	385	1.0053	-1.0003	1.4042	1.2767	585.4	784	.689	1.2727	1.3105	593.1	707	.693
900	3.7329-4	-1965.6	8.5119	27.568	388	1.0037	-1.0002	1.3969	1.2776	588.9	786	.689	1.2753	1.3098	596.3	713	.693
910	3.6917-4	-1951.7	8.5273	27.567	391	1.0026	-1.0002	1.3921	1.2782	592.3	790	.689	1.2778	1.3090	599.4	720	.694
920	3.6515-4	-1937.8	8.5425	27.566	394	1.0019	-1.0001	1.3888	1.2786	595.6	794	.689	1.2802	1.3082	602.5	726	.694
930	3.6122-4	-1923.9	8.5575	27.566	397	1.0013	-1.0001	1.3867	1.2788	598.9	798	.689	1.2827	1.3074	605.6	732	.695
940	3.5737-4	-1910.0	8.5724	27.565	400	1.0010	-1.0001	1.3853	1.2789	602.2	803	.689	1.2851	1.3067	608.7	738	.695
950	3.5361-4	-1896.2	8.5870	27.565	402	1.0007	-1.0000	1.3844	1.2790	605.4	808	.690	1.2875	1.3059	611.7	745	.696
960	3.4992-4	-1882.3	8.6015	27.565	405	1.0005	-1.0000	1.3839	1.2790	608.6	813	.690	1.2899	1.3052	614.8	751	.696
970	3.4631-4	-1868.5	8.6159	27.565	408	1.0004	-1.0000	1.3836	1.2790	611.7	818	.690	1.2922	1.3045	617.8	757	.697
980	3.4278-4	-1854.7	8.6300	27.565	411	1.0003	-1.0000	1.3835	1.2790	614.9	824	.690	1.2945	1.3038	620.8	763	.697
990	3.3931-4	-1840.8	8.6441	27.565	414	1.0002	-1.0000	1.3835	1.2789	618.0	829	.691	1.2968	1.3031	623.8	769	.698

TABLE 11.3D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
1000	3.3592-4	-1827.0	8.6580	27.565	417	1.0002	-1.0000	1.3836	1.2789	621.1	834 .691	1.2991	1.3024	626.8	776 .698
1050	3.1992-4	-1757.8	8.7255	27.564	431	1.0001	-1.0000	1.3847	1.2785	636.3	861 .693	1.3099	1.2992	641.5	806 .700
1100	3.0538-4	-1688.5	8.7900	27.564	445	1.0000	-1.0000	1.3866	1.2780	651.2	888 .694	1.3203	1.2961	655.8	837 .702
1150	2.9210-4	-1619.1	8.8517	27.564	458	1.0000	-1.0000	1.3891	1.2774	665.7	915 .696	1.3304	1.2932	669.8	867 .703
1200	2.7993-4	-1549.6	8.9109	27.564	472	1.0000	-1.0000	1.3921	1.2766	679.8	941 .697	1.3400	1.2905	683.5	897 .704
1250	2.6873-4	-1479.9	8.9678	27.564	485	1.0000	-1.0000	1.3956	1.2757	693.6	968 .699	1.3493	1.2879	696.9	927 .705
1300	2.5840-4	-1410.0	9.0226	27.564	498	1.0000	-1.0000	1.3993	1.2748	707.0	995 .700	1.3582	1.2855	710.0	957 .706
1350	2.4883-4	-1340.0	9.0754	27.564	511	1.0000	-1.0000	1.4034	1.2738	720.2	1022 .701	1.3667	1.2832	722.9	987 .707
1400	2.3994-4	-1269.7	9.1266	27.564	523	1.0000	-1.0000	1.4076	1.2727	733.1	1050 .702	1.3749	1.2811	735.5	1017 .708
1450	2.3167-4	-1199.2	9.1760	27.564	536	1.0000	-1.0000	1.4120	1.2717	745.8	1077 .703	1.3826	1.2790	747.9	1046 .708
1500	2.2394-4	-1128.5	9.2240	27.564	549	1.0000	-1.0000	1.4166	1.2706	758.2	1105 .703	1.3901	1.2771	760.2	1076 .709
1550	2.1672-4	-1057.5	9.2705	27.564	561	1.0001	-1.0000	1.4213	1.2694	770.4	1133 .703	1.3972	1.2753	772.2	1105 .709
1600	2.0995-4	-986.4	9.3157	27.564	573	1.0001	-1.0000	1.4261	1.2683	782.4	1162 .703	1.4039	1.2736	784.0	1135 .709
1650	2.0358-4	-914.9	9.3597	27.564	585	1.0002	-1.0000	1.4311	1.2672	794.1	1192 .703	1.4104	1.2721	795.7	1164 .709
1700	1.9760-4	-843.2	9.4025	27.564	597	1.0003	-1.0000	1.4364	1.2660	805.7	1222 .702	1.4165	1.2706	807.2	1193 .709
1750	1.9195-4	-771.3	9.4442	27.564	609	1.0004	-1.0000	1.4421	1.2647	817.1	1254 .700	1.4224	1.2692	818.5	1222 .709
1800	1.8661-4	-699.0	9.4849	27.563	621	1.0006	-1.0000	1.4485	1.2634	828.2	1288 .698	1.4279	1.2678	829.7	1251 .709
1850	1.8157-4	-626.4	9.5247	27.563	632	1.0010	-1.0000	1.4558	1.2620	839.2	1325 .695	1.4332	1.2666	840.7	1280 .708
1900	1.7678-4	-553.4	9.5636	27.562	644	1.0015	-1.0000	1.4645	1.2603	849.9	1365 .691	1.4382	1.2654	851.6	1308 .708
1950	1.7224-4	-479.9	9.6018	27.560	655	1.0022	-1.0001	1.4752	1.2584	860.4	1410 .685	1.4430	1.2643	862.4	1337 .707
2000	1.6792-4	-405.8	9.6393	27.559	667	1.0033	-1.0001	1.4887	1.2561	870.6	1462 .679	1.4475	1.2633	873.1	1365 .707
2050	1.6381-4	-331.0	9.6763	27.556	678	1.0048	-1.0002	1.5063	1.2533	880.5	1521 .671	1.4518	1.2624	883.6	1393 .706
2100	1.5989-4	-255.1	9.7128	27.552	689	1.0070	-1.0002	1.5294	1.2498	889.9	1592 .662	1.4559	1.2615	894.1	1421 .706
2150	1.5614-4	-177.9	9.7492	27.546	700	1.0101	-1.0003	1.5603	1.2454	899.0	1677 .651	1.4597	1.2607	904.5	1449 .705
2200	1.5255-4	-98.9	9.7855	27.539	711	1.0145	-1.0005	1.6020	1.2399	907.5	1782 .639	1.4634	1.2599	914.8	1477 .704
2250	1.4910-4	-17.5	9.8221	27.528	722	1.0207	-1.0007	1.6585	1.2331	915.4	1912 .626	1.4669	1.2593	925.1	1505 .703
2300	1.4578-4	67.3	9.8593	27.513	732	1.0294	-1.0010	1.7348	1.2248	922.7	2075 .612	1.4702	1.2587	935.4	1534 .702
2350	1.4257-4	156.4	9.8977	27.492	743	1.0414	-1.0015	1.8367	1.2152	929.3	2282 .598	1.4733	1.2583	945.7	1562 .701
2400	1.3945-4	251.5	9.9377	27.464	754	1.0577	-1.0021	1.9703	1.2045	935.5	2543 .584	1.4762	1.2580	956.0	1590 .699
2450	1.3642-4	354.1	9.9800	27.425	764	1.0790	-1.0029	2.1400	1.1933	941.5	2871 .569	1.4789	1.2578	966.6	1619 .698
2500	1.3344-4	466.1	10.0253	27.374	774	1.1059	-1.0040	2.3470	1.1823	947.5	3275 .555	1.4814	1.2579	977.3	1648 .696
2550	1.3051-4	589.3	10.0741	27.309	784	1.1380	-1.0054	2.5877	1.1723	954.0	3762 .539	1.4838	1.2582	988.3	1679 .693
2600	1.2761-4	725.3	10.1269	27.226	794	1.1749	-1.0070	2.8543	1.1637	961.3	4332 .523	1.4859	1.2587	999.7	1709 .690
2650	1.2474-4	875.0	10.1839	27.125	803	1.2153	-1.0088	3.1372	1.1567	969.3	4982 .506	1.4879	1.2595	1011.5	1740 .687
2700	1.2189-4	1039.1	10.2452	27.006	812	1.2581	-1.0108	3.4275	1.1512	978.3	5707 .488	1.4897	1.2605	1023.6	1772 .683
2750	1.1906-4	1217.8	10.3108	26.867	822	1.3026	-1.0130	3.7188	1.1471	988.0	6500 .470	1.4914	1.2618	1036.3	1806 .679
2800	1.1625-4	1411.0	10.3804	26.710	830	1.3481	-1.0153	4.0077	1.1440	998.5	7355 .453	1.4930	1.2634	1049.4	1840 .674
2850	1.1347-4	1618.5	10.4539	26.535	839	1.3944	-1.0178	4.2928	1.1417	1009.7	8266 .436	1.4946	1.2653	1063.0	1876 .668
2900	1.1070-4	1840.2	10.5310	26.343	848	1.4413	-1.0204	4.5736	1.1402	1021.6	9224 .420	1.4961	1.2674	1077.0	1914 .663
2950	1.0796-4	2075.8	10.6115	26.135	856	1.4887	-1.0231	4.8498	1.1393	1034.0	10219 .406	1.4976	1.2697	1091.6	1954 .656
3000	1.0525-4	2325.1	10.6953	25.911	864	1.5362	-1.0260	5.1208	1.1388	1047.0	11235 .394	1.4992	1.2723	1106.7	1996 .649

TABLE 11.4D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
200	1.7605-2	-2969.2	5.8786	28.892	115	1.0000	-1.0000	1.0444	1.3803	281.9	154	.777	1.0444	1.3803	281.9	154	.777
210	1.6766-2	-2958.8	5.9296	28.892	120	1.0000	-1.0000	1.0463	1.3794	288.7	163	.773	1.0463	1.3794	288.7	163	.773
220	1.6004-2	-2948.3	5.9783	28.892	126	1.0000	-1.0000	1.0483	1.3784	295.4	171	.769	1.0483	1.3784	295.4	171	.769
230	1.5309-2	-2937.8	6.0250	28.892	131	1.0000	-1.0000	1.0504	1.3774	301.9	180	.766	1.0504	1.3774	301.9	180	.766
240	1.4671-2	-2927.3	6.0697	28.892	136	1.0000	-1.0000	1.0525	1.3763	308.3	188	.763	1.0525	1.3763	308.3	188	.763
250	1.4084-2	-2916.7	6.1127	28.892	141	1.0000	-1.0000	1.0548	1.3752	314.5	196	.761	1.0548	1.3752	314.5	196	.761
260	1.3542-2	-2906.2	6.1541	28.892	147	1.0000	-1.0000	1.0571	1.3741	320.6	204	.759	1.0571	1.3741	320.6	204	.759
270	1.3041-2	-2895.6	6.1941	28.892	152	1.0000	-1.0000	1.0595	1.3729	326.6	212	.757	1.0594	1.3729	326.6	212	.757
280	1.2575-2	-2885.0	6.2326	28.892	157	1.0000	-1.0000	1.0619	1.3717	332.5	220	.756	1.0619	1.3718	332.5	220	.756
290	1.2141-2	-2874.4	6.2700	28.892	162	1.0000	-1.0000	1.0644	1.3705	338.2	228	.755	1.0644	1.3706	338.2	228	.755
298	1.1809-2	-2865.7	6.2995	28.892	166	1.0000	-1.0000	1.0666	1.3695	342.8	234	.755	1.0665	1.3696	342.8	234	.755
300	1.1737-2	-2863.7	6.3061	28.892	166	1.0000	-1.0000	1.0670	1.3693	343.8	235	.755	1.0669	1.3693	343.8	235	.755
310	1.1358-2	-2853.0	6.3411	28.892	171	1.0000	-1.0000	1.0697	1.3680	349.3	243	.754	1.0696	1.3681	349.4	243	.755
320	1.1003-2	-2842.3	6.3751	28.892	176	1.0000	-1.0000	1.0725	1.3667	354.8	250	.755	1.0723	1.3668	354.8	250	.755
330	1.0670-2	-2831.6	6.4082	28.892	181	1.0000	-1.0000	1.0753	1.3654	360.1	258	.755	1.0750	1.3656	360.1	257	.755
340	1.0356-2	-2820.8	6.4403	28.892	185	1.0000	-1.0000	1.0783	1.3641	365.3	265	.755	1.0778	1.3643	365.4	265	.755
350	1.0060-2	-2810.0	6.4716	28.892	190	1.0000	-1.0000	1.0813	1.3627	370.5	272	.755	1.0807	1.3629	370.5	272	.755
360	9.7804-3	-2799.2	6.5021	28.892	195	1.0001	-1.0000	1.0844	1.3613	375.5	280	.754	1.0836	1.3616	375.6	279	.755
370	9.5161-3	-2788.3	6.5319	28.892	199	1.0001	-1.0000	1.0877	1.3599	380.5	288	.753	1.0865	1.3603	380.6	287	.754
380	9.2656-3	-2777.4	6.5609	28.892	204	1.0002	-1.0000	1.0911	1.3584	385.4	295	.752	1.0896	1.3589	385.5	294	.754
390	9.0280-3	-2766.5	6.5893	28.891	208	1.0002	-1.0000	1.0946	1.3569	390.2	303	.750	1.0926	1.3576	390.3	302	.753
400	8.8022-3	-2755.5	6.6171	28.891	212	1.0003	-1.0000	1.0983	1.3553	395.0	311	.749	1.0957	1.3562	395.1	309	.753
410	8.5875-3	-2744.5	6.6442	28.891	217	1.0004	-1.0000	1.1023	1.3537	399.7	319	.747	1.0989	1.3548	399.8	316	.752
420	8.3829-3	-2733.5	6.6709	28.891	221	1.0006	-1.0000	1.1064	1.3520	404.3	328	.746	1.1020	1.3534	404.5	324	.752
430	8.1878-3	-2722.4	6.6969	28.890	225	1.0008	-1.0000	1.1108	1.3503	408.8	336	.744	1.1053	1.3521	409.0	331	.752
440	8.0016-3	-2711.3	6.7225	28.890	229	1.0010	-1.0000	1.1155	1.3485	413.2	345	.742	1.1085	1.3507	413.6	338	.752
450	7.8236-3	-2700.1	6.7477	28.889	233	1.0013	-1.0001	1.1206	1.3467	417.6	354	.739	1.1118	1.3493	418.0	345	.752
460	7.6532-3	-2688.9	6.7723	28.888	237	1.0016	-1.0001	1.1260	1.3447	421.9	363	.736	1.1151	1.3479	422.4	352	.751
470	7.4901-3	-2677.6	6.7966	28.887	241	1.0020	-1.0001	1.1318	1.3427	426.2	373	.733	1.1185	1.3465	426.8	359	.751
480	7.3337-3	-2666.2	6.8205	28.886	245	1.0025	-1.0001	1.1380	1.3406	430.4	383	.729	1.1219	1.3451	431.1	366	.751
490	7.1837-3	-2654.8	6.8440	28.884	249	1.0030	-1.0001	1.1448	1.3384	434.5	393	.725	1.1254	1.3437	435.3	373	.751
500	7.0395-3	-2643.3	6.8673	28.882	253	1.0037	-1.0002	1.1522	1.3361	438.5	405	.721	1.1288	1.3423	439.6	380	.751
510	6.9009-3	-2631.8	6.8901	28.880	257	1.0045	-1.0002	1.1601	1.3337	442.5	417	.715	1.1323	1.3409	443.7	388	.751
520	6.7676-3	-2620.1	6.9128	28.877	261	1.0054	-1.0003	1.1688	1.3311	446.4	430	.710	1.1358	1.3396	447.8	395	.750
530	6.6391-3	-2608.4	6.9351	28.874	265	1.0065	-1.0003	1.1782	1.3285	450.3	443	.703	1.1394	1.3382	451.9	402	.750
540	6.5153-3	-2596.5	6.9572	28.870	269	1.0077	-1.0004	1.1885	1.3257	454.1	458	.697	1.1430	1.3368	456.0	410	.749
550	6.3959-3	-2584.6	6.9791	28.865	272	1.0091	-1.0005	1.1997	1.3228	457.8	474	.690	1.1466	1.3355	460.0	417	.749
560	6.2805-3	-2572.6	7.0009	28.860	276	1.0107	-1.0006	1.2119	1.3198	461.4	490	.682	1.1502	1.3342	463.9	425	.748
570	6.1691-3	-2560.4	7.0224	28.854	280	1.0125	-1.0007	1.2252	1.3166	465.0	508	.675	1.1539	1.3328	467.9	432	.747
580	6.0613-3	-2548.0	7.0439	28.848	284	1.0145	-1.0008	1.2396	1.3133	468.5	527	.667	1.1576	1.3315	471.8	440	.747
590	5.9570-3	-2535.6	7.0652	28.840	287	1.0168	-1.0009	1.2554	1.3098	472.0	547	.659	1.1613	1.3302	475.7	447	.746

TABLE 11.4D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
					MICRO						MICRO					MICRO	
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.8559-3	-2522.9	7.0864	28.831	291	1.0194	-1.0011	1.2727	1.3062	475.4	569	.651	1.1650	1.3290	479.5	455	.745
610	5.7579-3	-2510.1	7.1076	28.821	294	1.0222	-1.0012	1.2914	1.3024	478.7	591	.643	1.1688	1.3277	483.4	463	.744
620	5.6629-3	-2497.1	7.1288	28.810	298	1.0254	-1.0014	1.3118	1.2985	482.0	616	.635	1.1726	1.3265	487.2	471	.743
630	5.5706-3	-2483.9	7.1499	28.797	302	1.0289	-1.0016	1.3341	1.2945	485.2	641	.628	1.1764	1.3253	491.0	478	.742
640	5.4809-3	-2470.4	7.1711	28.784	305	1.0328	-1.0018	1.3582	1.2903	488.4	668	.620	1.1802	1.3241	494.8	486	.741
650	5.3936-3	-2456.7	7.1924	28.768	309	1.0370	-1.0021	1.3845	1.2860	491.5	696	.614	1.1840	1.3229	498.5	494	.739
660	5.3087-3	-2442.7	7.2137	28.751	312	1.0417	-1.0024	1.4129	1.2816	494.6	726	.607	1.1879	1.3218	502.3	503	.738
670	5.2260-3	-2428.4	7.2352	28.732	316	1.0468	-1.0027	1.4437	1.2771	497.6	757	.602	1.1917	1.3207	506.0	511	.737
680	5.1454-3	-2413.8	7.2568	28.710	319	1.0524	-1.0030	1.4770	1.2725	500.6	790	.597	1.1956	1.3196	509.8	519	.735
690	5.0667-3	-2398.9	7.2787	28.687	323	1.0584	-1.0034	1.5129	1.2678	503.5	824	.592	1.1995	1.3186	513.5	527	.734
700	4.9899-3	-2383.6	7.3007	28.662	326	1.0649	-1.0037	1.5514	1.2631	506.4	859	.589	1.2034	1.3176	517.3	536	.732
710	4.9149-3	-2367.8	7.3230	28.634	329	1.0719	-1.0042	1.5927	1.2583	509.3	895	.586	1.2073	1.3167	521.0	544	.730
720	4.8415-3	-2351.7	7.3456	28.604	333	1.0793	-1.0046	1.6366	1.2536	512.2	932	.584	1.2111	1.3158	524.8	553	.729
730	4.7697-3	-2335.1	7.3685	28.571	336	1.0873	-1.0051	1.6831	1.2489	515.1	970	.583	1.2150	1.3149	528.5	562	.727
740	4.6994-3	-2318.0	7.3917	28.536	339	1.0956	-1.0056	1.7320	1.2443	518.0	1008	.583	1.2189	1.3141	532.3	570	.725
750	4.6305-3	-2300.5	7.4153	28.497	342	1.1043	-1.0061	1.7830	1.2398	520.9	1046	.584	1.2227	1.3134	536.1	579	.723
760	4.5630-3	-2282.4	7.4393	28.456	346	1.1133	-1.0067	1.8355	1.2355	523.8	1085	.585	1.2265	1.3127	539.9	588	.721
770	4.4968-3	-2263.7	7.4636	28.412	349	1.1224	-1.0072	1.8889	1.2315	526.8	1122	.588	1.2303	1.3121	543.7	597	.719
780	4.4319-3	-2244.6	7.4883	28.366	352	1.1316	-1.0078	1.9423	1.2277	529.8	1157	.591	1.2341	1.3115	547.6	606	.717
790	4.3682-3	-2224.9	7.5134	28.317	355	1.1405	-1.0083	1.9945	1.2242	532.9	1190	.595	1.2378	1.3110	551.4	615	.716
800	4.3057-3	-2204.7	7.5388	28.265	358	1.1489	-1.0089	2.0439	1.2212	536.1	1220	.601	1.2415	1.3105	555.3	623	.714
810	4.2445-3	-2184.0	7.5645	28.212	361	1.1565	-1.0093	2.0889	1.2186	539.4	1244	.607	1.2451	1.3101	559.2	632	.712
820	4.1846-3	-2163.0	7.5903	28.156	365	1.1629	-1.0097	2.1273	1.2165	542.7	1263	.614	1.2486	1.3097	563.2	641	.710
830	4.1259-3	-2141.5	7.6163	28.100	368	1.1677	-1.0101	2.1569	1.2150	546.3	1275	.622	1.2521	1.3094	567.1	650	.708
840	4.0685-3	-2119.9	7.6423	28.043	371	1.1703	-1.0103	2.1753	1.2142	549.9	1278	.631	1.2555	1.3091	571.0	659	.706
850	4.0125-3	-2098.1	7.6681	27.987	374	1.1704	-1.0103	2.1802	1.2141	553.7	1272	.640	1.2589	1.3089	574.9	667	.705
860	3.9580-3	-2076.3	7.6935	27.931	376	1.1674	-1.0102	2.1695	1.2148	557.7	1256	.650	1.2621	1.3087	578.8	676	.703
870	3.9051-3	-2054.7	7.7184	27.878	379	1.1613	-1.0099	2.1421	1.2164	561.8	1230	.661	1.2653	1.3084	582.7	684	.702
880	3.8538-3	-2033.5	7.7427	27.828	382	1.1518	-1.0094	2.0979	1.2189	566.1	1196	.671	1.2683	1.3082	586.5	692	.701
890	3.8042-3	-2012.8	7.7661	27.782	385	1.1394	-1.0086	2.0386	1.2224	570.6	1155	.680	1.2713	1.3079	590.2	700	.700
900	3.7564-3	-1992.8	7.7885	27.741	388	1.1245	-1.0078	1.9672	1.2268	575.3	1110	.688	1.2741	1.3076	593.9	708	.699
910	3.7103-3	-1973.5	7.8098	27.706	391	1.1082	-1.0068	1.8885	1.2320	580.0	1064	.694	1.2769	1.3072	597.5	715	.698
920	3.6660-3	-1955.0	7.8300	27.676	394	1.0913	-1.0058	1.8080	1.2378	584.9	1019	.699	1.2796	1.3068	601.0	722	.698
930	3.6233-3	-1937.3	7.8491	27.651	397	1.0752	-1.0048	1.7306	1.2439	589.8	980	.701	1.2822	1.3063	604.4	730	.697
940	3.5822-3	-1920.4	7.8672	27.631	400	1.0604	-1.0039	1.6605	1.2498	594.6	946	.702	1.2848	1.3058	607.8	736	.697
950	3.5425-3	-1904.1	7.8845	27.615	403	1.0476	-1.0031	1.6001	1.2553	599.2	919	.701	1.2873	1.3053	611.0	743	.697
960	3.5040-3	-1888.3	7.9010	27.603	405	1.0369	-1.0024	1.5502	1.2602	603.7	898	.700	1.2897	1.3047	614.2	750	.697
970	3.4667-3	-1873.0	7.9168	27.594	408	1.0283	-1.0019	1.5103	1.2644	607.9	883	.699	1.2921	1.3041	617.4	756	.698
980	3.4305-3	-1858.1	7.9321	27.586	411	1.0216	-1.0014	1.4792	1.2678	611.9	872	.697	1.2945	1.3035	620.5	763	.698
990	3.3952-3	-1843.4	7.9470	27.581	414	1.0164	-1.0011	1.4554	1.2704	615.7	865	.696	1.2968	1.3029	623.6	769	.698

TABLE 11.4D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
					MICRO						MICRO					MICRO	
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3607-3	-1829.0	7.9616	27.577	417	1.0124	-1.0008	1.4375	1.2725	619.4	862	.696	1.2990	1.3022	626.6	775	.699
1050	3.1997-3	-1758.3	8.0305	27.568	431	1.0032	-1.0002	1.3977	1.2770	635.9	868	.694	1.3099	1.2991	641.4	806	.700
1100	3.0540-3	-1688.7	8.0953	27.566	445	1.0010	-1.0001	1.3902	1.2776	651.1	890	.695	1.3203	1.2961	655.8	837	.702
1150	2.9211-3	-1619.2	8.1571	27.565	458	1.0004	-1.0000	1.3903	1.2773	665.6	915	.696	1.3304	1.2932	669.8	867	.703
1200	2.7994-3	-1549.6	8.2163	27.565	472	1.0002	-1.0000	1.3926	1.2766	679.8	942	.697	1.3400	1.2905	683.4	897	.704
1250	2.6874-3	-1479.9	8.2732	27.565	485	1.0001	-1.0000	1.3958	1.2757	693.5	968	.699	1.3493	1.2879	696.8	927	.705
1300	2.5840-3	-1410.1	8.3280	27.564	498	1.0001	-1.0000	1.3994	1.2748	707.0	995	.700	1.3582	1.2855	710.0	957	.706
1350	2.4883-3	-1340.0	8.3809	27.564	511	1.0000	-1.0000	1.4034	1.2738	720.2	1022	.701	1.3667	1.2832	722.9	987	.707
1400	2.3994-3	-1269.7	8.4320	27.564	523	1.0000	-1.0000	1.4076	1.2727	733.1	1050	.702	1.3749	1.2811	735.5	1017	.708
1450	2.3167-3	-1199.2	8.4815	27.564	536	1.0000	-1.0000	1.4119	1.2717	745.8	1077	.703	1.3826	1.2790	747.9	1046	.708
1500	2.2395-3	-1128.5	8.5294	27.564	549	1.0000	-1.0000	1.4164	1.2706	758.2	1104	.703	1.3901	1.2771	760.2	1076	.709
1550	2.1672-3	-1057.6	8.5759	27.564	561	1.0000	-1.0000	1.4209	1.2695	770.4	1132	.704	1.3972	1.2753	772.2	1105	.709
1600	2.0995-3	-986.4	8.6211	27.564	573	1.0000	-1.0000	1.4254	1.2684	782.4	1160	.704	1.4039	1.2736	784.0	1135	.709
1650	2.0359-3	-915.0	8.6650	27.564	585	1.0001	-1.0000	1.4300	1.2674	794.2	1188	.704	1.4104	1.2721	795.7	1164	.709
1700	1.9760-3	-843.4	8.7078	27.564	597	1.0001	-1.0000	1.4346	1.2663	805.8	1217	.704	1.4165	1.2706	807.2	1193	.709
1750	1.9195-3	-771.6	8.7495	27.564	609	1.0001	-1.0000	1.4393	1.2652	817.2	1246	.704	1.4224	1.2691	818.5	1222	.709
1800	1.8662-3	-699.5	8.7901	27.564	621	1.0002	-1.0000	1.4441	1.2642	828.5	1275	.703	1.4279	1.2678	829.7	1251	.709
1850	1.8157-3	-627.2	8.8297	27.564	632	1.0003	-1.0000	1.4491	1.2631	839.5	1305	.702	1.4332	1.2666	840.7	1280	.708
1900	1.7679-3	-554.6	8.8684	27.564	644	1.0005	-1.0000	1.4545	1.2619	850.4	1337	.701	1.4382	1.2654	851.6	1308	.708
1950	1.7226-3	-481.7	8.9063	27.563	655	1.0007	-1.0000	1.4604	1.2608	861.2	1370	.699	1.4430	1.2643	862.4	1336	.708
2000	1.6795-3	-408.5	8.9433	27.563	667	1.0010	-1.0000	1.4670	1.2595	871.7	1405	.696	1.4475	1.2633	873.0	1365	.707
2050	1.6385-3	-335.0	8.9796	27.562	678	1.0015	-1.0000	1.4746	1.2581	882.0	1442	.693	1.4518	1.2623	883.5	1393	.707
2100	1.5994-3	-261.0	9.0153	27.560	689	1.0021	-1.0001	1.4837	1.2565	892.2	1482	.690	1.4558	1.2614	893.9	1420	.706
2150	1.5621-3	-186.6	9.0503	27.559	700	1.0030	-1.0001	1.4948	1.2546	902.1	1526	.686	1.4597	1.2605	904.2	1448	.706
2200	1.5265-3	-111.5	9.0848	27.557	711	1.0042	-1.0001	1.5085	1.2524	911.8	1576	.681	1.4634	1.2597	914.4	1476	.705
2250	1.4924-3	-35.7	9.1189	27.554	722	1.0058	-1.0002	1.5257	1.2498	921.2	1633	.675	1.4669	1.2590	924.5	1504	.704
2300	1.4597-3	41.1	9.1527	27.549	733	1.0081	-1.0003	1.5476	1.2467	930.3	1698	.668	1.4702	1.2583	934.6	1531	.703
2350	1.4284-3	119.2	9.1863	27.544	743	1.0111	-1.0004	1.5755	1.2430	939.0	1774	.660	1.4733	1.2577	944.5	1559	.703
2400	1.3982-3	198.8	9.2198	27.536	754	1.0151	-1.0005	1.6113	1.2385	947.4	1864	.652	1.4763	1.2571	954.5	1586	.702
2450	1.3692-3	280.5	9.2535	27.526	764	1.0205	-1.0007	1.6570	1.2332	955.3	1970	.643	1.4791	1.2566	964.3	1614	.701
2500	1.3412-3	364.7	9.2875	27.513	775	1.0275	-1.0010	1.7150	1.2270	962.8	2098	.633	1.4818	1.2562	974.2	1642	.699
2550	1.3140-3	452.2	9.3222	27.496	785	1.0366	-1.0014	1.7879	1.2201	969.9	2252	.623	1.4843	1.2559	984.1	1670	.698
2600	1.2877-3	543.8	9.3577	27.473	795	1.0483	-1.0019	1.8778	1.2125	976.8	2437	.613	1.4866	1.2556	994.0	1698	.696
2650	1.2621-3	640.3	9.3945	27.444	805	1.0628	-1.0025	1.9864	1.2045	983.4	2657	.602	1.4889	1.2555	1004.0	1726	.695
2700	1.2371-3	742.7	9.4328	27.408	815	1.0803	-1.0032	2.1139	1.1965	990.0	2917	.591	1.4909	1.2554	1014.1	1754	.693
2750	1.2126-3	852.0	9.4729	27.362	825	1.1008	-1.0041	2.2590	1.1889	996.7	3219	.579	1.4929	1.2556	1024.3	1782	.691
2800	1.1885-3	968.9	9.5150	27.307	835	1.1241	-1.0052	2.4184	1.1819	1003.8	3563	.567	1.4947	1.2558	1034.7	1811	.689
2850	1.1648-3	1094.0	9.5593	27.241	844	1.1497	-1.0064	2.5881	1.1757	1011.3	3948	.554	1.4963	1.2562	1045.4	1839	.687
2900	1.1415-3	1227.8	9.6058	27.164	854	1.1769	-1.0078	2.7632	1.1705	1019.3	4372	.540	1.4979	1.2568	1056.2	1868	.684
2950	1.1185-3	1370.4	9.6545	27.075	863	1.2053	-1.0092	2.9398	1.1663	1027.9	4832	.525	1.4993	1.2576	1067.3	1898	.682
3000	1.0958-3	1521.7	9.7054	26.975	872	1.2343	-1.0107	3.1144	1.1629	1036.9	5324	.510	1.5007	1.2585	1078.7	1928	.679

TABLE 11.5D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE		J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
200	8.8024-2	-2969.2	5.4154	28.892	115	1.0000 -1.0000	1.0444	1.3803	281.9	154	.777	1.0444	1.3803	281.9	154 .777
210	8.3832-2	-2958.8	5.4664	28.892	120	1.0000 -1.0000	1.0463	1.3794	288.7	163	.773	1.0463	1.3794	288.7	163 .773
220	8.0022-2	-2948.3	5.5152	28.892	126	1.0000 -1.0000	1.0483	1.3784	295.4	171	.769	1.0483	1.3784	295.4	171 .769
230	7.6542-2	-2937.8	5.5618	28.892	131	1.0000 -1.0000	1.0504	1.3773	301.9	180	.766	1.0504	1.3774	301.9	180 .766
240	7.3353-2	-2927.3	5.6066	28.892	136	1.0000 -1.0000	1.0526	1.3763	308.3	188	.763	1.0525	1.3763	308.3	188 .763
250	7.0419-2	-2916.7	5.6496	28.892	141	1.0000 -1.0000	1.0548	1.3752	314.5	196	.761	1.0548	1.3752	314.5	196 .761
260	6.7711-2	-2906.2	5.6910	28.892	147	1.0000 -1.0000	1.0571	1.3741	320.6	204	.759	1.0571	1.3741	320.6	204 .759
270	6.5203-2	-2895.6	5.7309	28.892	152	1.0000 -1.0000	1.0595	1.3729	326.6	212	.757	1.0594	1.3729	326.6	212 .757
280	6.2874-2	-2885.0	5.7695	28.892	157	1.0000 -1.0000	1.0619	1.3717	332.5	220	.756	1.0619	1.3718	332.5	220 .756
290	6.0706-2	-2874.4	5.8068	28.892	162	1.0000 -1.0000	1.0644	1.3705	338.2	228	.755	1.0644	1.3706	338.2	228 .755
298	5.9047-2	-2865.7	5.8363	28.892	166	1.0000 -1.0000	1.0666	1.3695	342.8	234	.755	1.0665	1.3696	342.8	234 .755
300	5.8683-2	-2863.7	5.8429	28.892	166	1.0000 -1.0000	1.0670	1.3693	343.8	235	.755	1.0669	1.3693	343.8	235 .755
310	5.6790-2	-2853.0	5.8780	28.892	171	1.0000 -1.0000	1.0697	1.3680	349.3	243	.755	1.0696	1.3681	349.4	243 .755
320	5.5015-2	-2842.3	5.9120	28.892	176	1.0000 -1.0000	1.0724	1.3667	354.8	250	.755	1.0723	1.3668	354.8	250 .755
330	5.3348-2	-2831.6	5.9450	28.892	181	1.0000 -1.0000	1.0752	1.3654	360.1	257	.755	1.0750	1.3656	360.1	257 .755
340	5.1779-2	-2820.8	5.9772	28.892	185	1.0000 -1.0000	1.0781	1.3641	365.3	265	.755	1.0778	1.3643	365.4	265 .755
350	5.0300-2	-2810.0	6.0084	28.892	190	1.0000 -1.0000	1.0810	1.3628	370.5	272	.755	1.0807	1.3629	370.5	272 .755
360	4.8902-2	-2799.2	6.0389	28.892	195	1.0000 -1.0000	1.0841	1.3614	375.6	280	.754	1.0836	1.3616	375.6	279 .755
370	4.7581-2	-2788.3	6.0687	28.892	199	1.0000 -1.0000	1.0872	1.3600	380.5	287	.754	1.0865	1.3603	380.6	287 .755
380	4.6328-2	-2777.4	6.0977	28.892	204	1.0001 -1.0000	1.0903	1.3586	385.4	295	.753	1.0895	1.3589	385.5	294 .754
390	4.5141-2	-2766.5	6.1261	28.892	208	1.0001 -1.0000	1.0936	1.3572	390.3	302	.752	1.0926	1.3576	390.3	302 .753
400	4.4012-2	-2755.6	6.1538	28.892	212	1.0001 -1.0000	1.0970	1.3557	395.0	310	.751	1.0957	1.3562	395.1	309 .753
410	4.2938-2	-2744.6	6.1809	28.892	217	1.0002 -1.0000	1.1005	1.3542	399.7	318	.750	1.0988	1.3548	399.8	316 .752
420	4.1916-2	-2733.6	6.2075	28.892	221	1.0002 -1.0000	1.1041	1.3527	404.3	325	.749	1.1020	1.3534	404.5	324 .752
430	4.0941-2	-2722.5	6.2335	28.891	225	1.0003 -1.0000	1.1079	1.3512	408.9	333	.748	1.1052	1.3520	409.0	331 .752
440	4.0010-2	-2711.4	6.2591	28.891	229	1.0004 -1.0000	1.1118	1.3496	413.4	341	.747	1.1085	1.3507	413.6	338 .752
450	3.9120-2	-2700.3	6.2841	28.891	233	1.0005 -1.0000	1.1159	1.3480	417.8	349	.746	1.1118	1.3493	418.0	345 .752
460	3.8269-2	-2689.1	6.3087	28.890	237	1.0007 -1.0000	1.1201	1.3463	422.2	357	.745	1.1151	1.3479	422.4	352 .752
470	3.7455-2	-2677.9	6.3328	28.890	241	1.0008 -1.0000	1.1246	1.3446	426.5	365	.743	1.1184	1.3465	426.8	359 .752
480	3.6674-2	-2666.6	6.3565	28.889	245	1.0011 -1.0001	1.1292	1.3429	430.7	374	.741	1.1218	1.3451	431.1	366 .752
490	3.5924-2	-2655.3	6.3798	28.889	249	1.0013 -1.0001	1.1342	1.3411	434.9	382	.740	1.1252	1.3437	435.3	373 .752
500	3.5205-2	-2643.9	6.4028	28.888	253	1.0016 -1.0001	1.1394	1.3393	439.0	391	.737	1.1287	1.3423	439.5	380 .751
510	3.4513-2	-2632.5	6.4254	28.887	257	1.0020 -1.0001	1.1449	1.3374	443.1	401	.735	1.1321	1.3409	443.7	387 .751
520	3.3848-2	-2621.0	6.4477	28.886	261	1.0024 -1.0001	1.1507	1.3355	447.1	410	.732	1.1356	1.3395	447.8	395 .751
530	3.3208-2	-2609.5	6.4697	28.884	265	1.0029 -1.0002	1.1568	1.3335	451.0	421	.728	1.1391	1.3381	451.8	402 .751
540	3.2591-2	-2597.9	6.4914	28.882	269	1.0034 -1.0002	1.1634	1.3315	454.9	431	.725	1.1427	1.3368	455.9	409 .750
550	3.1996-2	-2586.2	6.5128	28.881	272	1.0040 -1.0002	1.1704	1.3293	458.8	442	.721	1.1462	1.3354	459.8	416 .750
560	3.1422-2	-2574.5	6.5339	28.878	276	1.0048 -1.0003	1.1779	1.3272	462.6	454	.716	1.1498	1.3341	463.8	424 .749
570	3.0868-2	-2562.6	6.5549	28.876	280	1.0056 -1.0003	1.1859	1.3249	466.3	466	.712	1.1534	1.3327	467.7	431 .749
580	3.0333-2	-2550.7	6.5756	28.873	284	1.0065 -1.0004	1.1945	1.3225	470.0	479	.707	1.1570	1.3314	471.6	438 .748
590	2.9815-2	-2538.8	6.5961	28.869	287	1.0076 -1.0004	1.2037	1.3201	473.6	492	.702	1.1606	1.3300	475.4	446 .748

TABLE 11.5D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	2.9314-2	-2526.7	6.6164	28.865	291	1.0088	-1.0005	1.2136	1.3176	477.2	507	.697	1.1643	1.3287	479.2	453	.747
610	2.8829-2	-2514.5	6.6365	28.861	294	1.0101	-1.0006	1.2242	1.3150	480.7	521	.691	1.1679	1.3274	483.0	461	.746
620	2.8359-2	-2502.2	6.6565	28.855	298	1.0116	-1.0007	1.2357	1.3123	484.2	537	.686	1.1716	1.3262	486.7	468	.746
630	2.7903-2	-2489.8	6.6764	28.850	302	1.0133	-1.0008	1.2480	1.3095	487.6	554	.680	1.1753	1.3249	490.5	476	.745
640	2.7461-2	-2477.2	6.6961	28.843	305	1.0151	-1.0009	1.2614	1.3066	491.0	571	.674	1.1789	1.3236	494.2	484	.744
650	2.7032-2	-2464.5	6.7158	28.836	309	1.0172	-1.0010	1.2757	1.3035	494.3	589	.668	1.1826	1.3224	497.8	491	.743
660	2.6615-2	-2451.7	6.7354	28.828	312	1.0194	-1.0011	1.2912	1.3004	497.5	609	.662	1.1863	1.3212	501.5	499	.742
670	2.6210-2	-2438.7	6.7549	28.819	316	1.0219	-1.0013	1.3080	1.2972	500.7	629	.657	1.1901	1.3200	505.1	507	.741
680	2.5815-2	-2425.5	6.7744	28.809	319	1.0247	-1.0014	1.3260	1.2938	503.9	650	.651	1.1938	1.3188	508.7	514	.740
690	2.5431-2	-2412.2	6.7939	28.798	323	1.0277	-1.0016	1.3455	1.2904	507.0	672	.646	1.1975	1.3177	512.3	522	.739
700	2.5058-2	-2398.6	6.8135	28.786	326	1.0311	-1.0018	1.3665	1.2868	510.1	695	.640	1.2012	1.3166	515.9	530	.738
710	2.4693-2	-2384.8	6.8330	28.773	329	1.0347	-1.0020	1.3891	1.2831	513.1	720	.635	1.2049	1.3155	519.5	538	.737
720	2.4338-2	-2370.8	6.8526	28.758	333	1.0386	-1.0023	1.4134	1.2794	516.1	745	.631	1.2086	1.3144	523.1	546	.736
730	2.3991-2	-2356.6	6.8723	28.742	336	1.0429	-1.0025	1.4395	1.2756	519.0	772	.627	1.2123	1.3134	526.6	554	.735
740	2.3652-2	-2342.0	6.8920	28.724	339	1.0476	-1.0028	1.4675	1.2717	521.9	800	.623	1.2160	1.3124	530.2	562	.734
750	2.3321-2	-2327.2	6.9119	28.705	343	1.0526	-1.0031	1.4973	1.2677	524.8	828	.619	1.2197	1.3115	533.8	570	.733
760	2.2997-2	-2312.1	6.9320	28.684	346	1.0580	-1.0035	1.5291	1.2638	527.6	858	.616	1.2233	1.3105	537.3	578	.732
770	2.2681-2	-2296.6	6.9522	28.661	349	1.0638	-1.0038	1.5629	1.2598	530.5	889	.614	1.2270	1.3096	540.9	586	.730
780	2.2371-2	-2280.8	6.9726	28.636	352	1.0699	-1.0042	1.5985	1.2558	533.3	921	.612	1.2306	1.3088	544.4	595	.729
790	2.2067-2	-2264.6	6.9932	28.610	356	1.0764	-1.0046	1.6359	1.2519	536.1	953	.610	1.2342	1.3080	548.0	603	.728
800	2.1769-2	-2248.1	7.0140	28.581	359	1.0833	-1.0050	1.6750	1.2481	538.9	986	.609	1.2378	1.3072	551.6	611	.727
810	2.1477-2	-2231.1	7.0351	28.550	362	1.0905	-1.0055	1.7156	1.2444	541.8	1020	.609	1.2413	1.3065	555.2	619	.725
820	2.1191-2	-2213.8	7.0564	28.517	365	1.0979	-1.0059	1.7574	1.2408	544.6	1054	.609	1.2449	1.3058	558.7	627	.724
830	2.0910-2	-2196.0	7.0779	28.482	368	1.1056	-1.0064	1.7999	1.2373	547.5	1087	.609	1.2483	1.3052	562.4	636	.723
840	2.0634-2	-2177.8	7.0997	28.445	371	1.1133	-1.0069	1.8428	1.2341	550.5	1120	.611	1.2518	1.3047	566.0	644	.721
850	2.0363-2	-2159.1	7.1218	28.405	374	1.1211	-1.0074	1.8854	1.2311	553.4	1152	.612	1.2552	1.3041	569.6	652	.720
860	2.0096-2	-2140.1	7.1441	28.364	377	1.1287	-1.0079	1.9270	1.2283	556.5	1182	.615	1.2585	1.3037	573.3	661	.719
870	1.9835-2	-2120.6	7.1666	28.320	380	1.1361	-1.0084	1.9669	1.2259	559.6	1210	.618	1.2618	1.3032	576.9	669	.717
880	1.9578-2	-2100.7	7.1893	28.275	383	1.1430	-1.0089	2.0040	1.2237	562.7	1236	.621	1.2650	1.3028	580.6	677	.716
890	1.9326-2	-2080.5	7.2121	28.229	386	1.1492	-1.0093	2.0373	1.2219	566.0	1258	.626	1.2682	1.3025	584.3	685	.715
900	1.9079-2	-2060.0	7.2351	28.181	389	1.1545	-1.0097	2.0658	1.2205	569.3	1275	.630	1.2713	1.3022	588.0	693	.713
910	1.8837-2	-2039.2	7.2580	28.132	392	1.1587	-1.0100	2.0881	1.2195	572.7	1287	.636	1.2744	1.3019	591.7	702	.712
920	1.8600-2	-2018.3	7.2809	28.083	395	1.1614	-1.0102	2.1031	1.2190	576.2	1294	.642	1.2774	1.3017	595.5	710	.711
930	1.8367-2	-1997.2	7.3037	28.033	398	1.1625	-1.0104	2.1097	1.2189	579.8	1294	.648	1.2803	1.3015	599.2	718	.709
940	1.8141-2	-1976.1	7.3263	27.985	401	1.1617	-1.0104	2.1068	1.2194	583.6	1288	.655	1.2831	1.3013	602.8	726	.708
950	1.7919-2	-1955.1	7.3485	27.937	403	1.1588	-1.0103	2.0938	1.2204	587.4	1275	.662	1.2859	1.3011	606.5	733	.707
960	1.7704-2	-1934.3	7.3703	27.892	406	1.1537	-1.0100	2.0702	1.2220	591.3	1255	.670	1.2886	1.3010	610.2	741	.706
970	1.7494-2	-1913.7	7.3916	27.848	409	1.1464	-1.0096	2.0363	1.2241	595.4	1230	.677	1.2912	1.3008	613.8	749	.705
980	1.7290-2	-1893.6	7.4123	27.808	412	1.1371	-1.0091	1.9930	1.2269	599.6	1200	.684	1.2938	1.3006	617.3	756	.704
990	1.7093-2	-1873.9	7.4322	27.771	415	1.1260	-1.0084	1.9418	1.2302	603.8	1166	.690	1.2962	1.3003	620.8	764	.704

TABLE 11.5D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	1.6901-2	-1854.8	7.4515	27.737	417	1.1137	-1.0076	1.8850	1.2340	608.2	1131	.695	1.2987	1.3001	624.3	771	.703
1050	1.6032-2	-1767.8	7.5364	27.627	431	1.0518	-1.0036	1.6056	1.2558	630.0	982	.704	1.3098	1.2983	640.5	805	.702
1100	1.5281-2	-1691.8	7.6071	27.585	445	1.0177	-1.0013	1.4588	1.2701	648.9	927	.700	1.3203	1.2958	655.5	836	.702
1150	1.4609-2	-1620.3	7.6707	27.572	458	1.0059	-1.0005	1.4115	1.2750	664.9	927	.698	1.3304	1.2931	669.6	867	.703
1200	1.3998-2	-1550.1	7.7305	27.568	472	1.0022	-1.0002	1.3997	1.2759	679.5	946	.698	1.3400	1.2904	683.4	897	.704
1250	1.3438-2	-1480.1	7.7876	27.566	485	1.0009	-1.0001	1.3984	1.2755	693.5	970	.699	1.3493	1.2879	696.8	927	.706
1300	1.2920-2	-1410.2	7.8425	27.566	498	1.0005	-1.0001	1.4006	1.2747	707.0	996	.700	1.3582	1.2855	710.0	957	.706
1350	1.2442-2	-1340.1	7.8954	27.565	511	1.0003	-1.0000	1.4040	1.2738	720.2	1023	.701	1.3667	1.2832	722.8	987	.707
1400	1.1997-2	-1269.8	7.9465	27.565	523	1.0002	-1.0000	1.4079	1.2727	733.1	1050	.702	1.3749	1.2810	735.5	1017	.708
1450	1.1584-2	-1199.3	7.9960	27.565	536	1.0001	-1.0000	1.4121	1.2717	745.8	1077	.703	1.3827	1.2790	747.9	1046	.708
1500	1.1197-2	-1128.6	8.0439	27.565	549	1.0001	-1.0000	1.4165	1.2706	758.2	1104	.704	1.3901	1.2771	760.2	1076	.709
1550	1.0836-2	-1057.6	8.0904	27.565	561	1.0001	-1.0000	1.4209	1.2695	770.4	1132	.704	1.3972	1.2753	772.2	1105	.709
1600	1.0498-2	-986.5	8.1356	27.565	573	1.0001	-1.0000	1.4253	1.2685	782.4	1159	.704	1.4039	1.2736	784.0	1135	.709
1650	1.0179-2	-915.1	8.1796	27.564	585	1.0001	-1.0000	1.4298	1.2674	794.2	1187	.705	1.4104	1.2720	795.7	1164	.709
1700	9.8800-3	-843.5	8.2223	27.564	597	1.0001	-1.0000	1.4342	1.2664	805.8	1215	.705	1.4165	1.2706	807.2	1193	.709
1750	9.5977-3	-771.7	8.2639	27.564	609	1.0001	-1.0000	1.4386	1.2653	817.3	1243	.705	1.4224	1.2691	818.5	1222	.709
1800	9.3310-3	-699.6	8.3045	27.564	621	1.0001	-1.0000	1.4430	1.2643	828.5	1272	.704	1.4279	1.2678	829.7	1251	.709
1850	9.0788-3	-627.4	8.3441	27.564	632	1.0002	-1.0000	1.4475	1.2633	839.6	1300	.704	1.4332	1.2666	840.7	1279	.708
1900	8.8398-3	-554.9	8.3828	27.564	644	1.0002	-1.0000	1.4520	1.2624	850.6	1330	.703	1.4382	1.2654	851.6	1308	.708
1950	8.6131-3	-482.2	8.4206	27.564	655	1.0003	-1.0000	1.4567	1.2613	861.4	1359	.702	1.4429	1.2643	862.4	1336	.708
2000	8.3977-3	-409.2	8.4575	27.564	667	1.0005	-1.0000	1.4616	1.2603	872.0	1390	.701	1.4475	1.2633	873.0	1365	.707
2050	8.1928-3	-336.0	8.4937	27.563	678	1.0007	-1.0000	1.4669	1.2593	882.4	1422	.699	1.4518	1.2623	883.5	1393	.707
2100	7.9976-3	-262.5	8.5291	27.563	689	1.0009	-1.0000	1.4727	1.2581	892.7	1454	.698	1.4558	1.2614	893.9	1420	.706
2150	7.8114-3	-188.7	8.5638	27.562	700	1.0013	-1.0000	1.4793	1.2569	902.9	1489	.696	1.4597	1.2605	904.2	1448	.706
2200	7.6336-3	-114.6	8.5979	27.561	711	1.0018	-1.0001	1.4870	1.2556	912.9	1526	.693	1.4634	1.2597	914.3	1476	.705
2250	7.4636-3	-40.0	8.6314	27.560	722	1.0025	-1.0001	1.4960	1.2541	922.6	1566	.690	1.4669	1.2589	924.4	1503	.705
2300	7.3008-3	35.1	8.6644	27.558	733	1.0035	-1.0001	1.5068	1.2523	932.2	1609	.686	1.4702	1.2582	934.4	1531	.704
2350	7.1449-3	110.7	8.6969	27.555	743	1.0047	-1.0002	1.5199	1.2503	941.6	1657	.682	1.4733	1.2575	944.3	1558	.703
2400	6.9952-3	187.1	8.7291	27.552	754	1.0063	-1.0002	1.5360	1.2480	950.7	1710	.677	1.4763	1.2569	954.1	1585	.702
2450	6.8514-3	264.4	8.7610	27.548	765	1.0084	-1.0003	1.5558	1.2453	959.6	1770	.672	1.4791	1.2564	963.9	1613	.701
2500	6.7131-3	342.8	8.7927	27.543	775	1.0112	-1.0004	1.5803	1.2421	968.2	1838	.666	1.4818	1.2558	973.5	1640	.700
2550	6.5797-3	422.5	8.8242	27.536	785	1.0148	-1.0006	1.6105	1.2384	976.5	1917	.660	1.4844	1.2554	983.2	1668	.699
2600	6.4511-3	503.9	8.8559	27.527	796	1.0193	-1.0007	1.6477	1.2341	984.5	2008	.653	1.4868	1.2549	992.7	1695	.698
2650	6.3267-3	587.4	8.8877	27.515	806	1.0251	-1.0010	1.6932	1.2293	992.2	2113	.646	1.4891	1.2546	1002.3	1723	.697
2700	6.2062-3	673.4	8.9198	27.500	816	1.0322	-1.0013	1.7482	1.2240	999.6	2235	.638	1.4913	1.2543	1011.9	1750	.695
2750	6.0893-3	762.4	8.9525	27.482	826	1.0411	-1.0016	1.8139	1.2182	1006.8	2377	.630	1.4934	1.2541	1021.5	1777	.694
2800	5.9756-3	855.0	8.9858	27.459	836	1.0518	-1.0021	1.8910	1.2122	1013.8	2541	.622	1.4953	1.2539	1031.1	1805	.693
2850	5.8648-3	951.7	9.0201	27.431	846	1.0644	-1.0027	1.9796	1.2060	1020.7	2729	.614	1.4971	1.2538	1040.7	1832	.691
2900	5.7565-3	1053.1	9.0553	27.397	855	1.0791	-1.0034	2.0790	1.1999	1027.6	2942	.605	1.4989	1.2539	1050.5	1859	.690
2950	5.6505-3	1159.8	9.0918	27.356	865	1.0955	-1.0041	2.1879	1.1941	1034.7	3181	.595	1.5005	1.2540	1060.4	1886	.688
3000	5.5466-3	1272.0	9.1295	27.308	875	1.1136	-1.0050	2.3041	1.1888	1042.1	3446	.585	1.5020	1.2542	1070.3	1913	.687

TABLE 11.1E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.097-5	-3266.4	6.6938	27.564	1.062	1.026	1.845-5	30.281	129	1.0000	-1.000	0.979	1.390	276	171	.735	0.979	1.390	171	.735
220	1.902-5	-3242.0	6.8095	27.564	1.539	1.045	1.676-5	30.251	140	1.0000	-1.000	0.983	1.388	290	188	.731	0.983	1.388	188	.731
240	1.701-5	-3183.9	7.0602	27.565	5.564	1.063	1.521-5	29.954	147	1.0000	-1.000	0.999	1.385	304	200	.736	0.999	1.385	200	.736
260	1.354-5	-2918.9	8.1138	27.601	1.077	1.067	1.328-5	28.330	143	1.0000	-1.000	1.076	1.375	324	199	.773	1.076	1.375	199	.773
280	1.257-5	-2897.3	8.1939	27.625	1.086	1.071	1.234-5	28.341	153	1.0000	-1.000	1.080	1.373	336	215	.768	1.079	1.373	215	.769
298	1.181-5	-2877.5	8.2624	27.654	1.094	1.075	1.159-5	28.354	162	1.0001	-1.000	1.083	1.371	346	230	.765	1.082	1.372	229	.767
300	1.174-5	-2875.5	8.2691	27.657	1.095	1.076	1.152-5	28.356	163	1.0001	-1.000	1.084	1.371	347	231	.765	1.083	1.371	230	.767
320	1.100-5	-2853.4	8.3401	27.697	1.106	1.081	1.081-5	28.373	173	1.0004	-1.000	1.090	1.368	358	248	.760	1.086	1.369	245	.766
340	1.036-5	-2831.2	8.4076	27.743	1.119	1.086	1.018-5	28.393	182	1.0010	-1.000	1.099	1.364	369	267	.752	1.090	1.367	260	.766
360	9.779-6	-2808.6	8.4720	27.795	1.137	1.091	9.619-6	28.415	192	1.0023	-1.000	1.113	1.359	378	290	.736	1.095	1.365	274	.765
380	9.262-6	-2785.6	8.5342	27.849	1.164	1.097	9.120-6	28.436	201	1.0047	-1.000	1.136	1.351	387	322	.710	1.099	1.362	290	.762
400	8.796-6	-2762.0	8.5948	27.905	1.203	1.102	8.669-6	28.455	210	1.0090	-1.000	1.171	1.340	396	365	.674	1.104	1.360	306	.759
420	8.372-6	-2737.4	8.6549	27.958	1.261	1.109	8.260-6	28.469	219	1.0160	-1.001	1.224	1.326	403	423	.633	1.110	1.357	321	.756
440	7.983-6	-2711.4	8.7153	28.005	1.341	1.115	7.886-6	28.472	227	1.0267	-1.001	1.300	1.308	410	500	.591	1.116	1.355	337	.753
460	7.624-6	-2683.6	8.7771	28.042	1.448	1.123	7.540-6	28.462	236	1.0418	-1.002	1.400	1.290	416	596	.554	1.122	1.352	354	.749
480	7.290-6	-2653.3	8.8415	28.063	1.583	1.130	7.219-6	28.434	244	1.0616	-1.003	1.526	1.271	422	705	.529	1.130	1.349	371	.743
500	6.976-6	-2620.1	8.9093	28.067	1.743	1.139	6.918-6	28.383	252	1.0853	-1.004	1.671	1.254	429	817	.517	1.138	1.347	390	.737
520	6.680-6	-2583.5	8.9811	28.050	1.919	1.148	6.634-6	28.309	261	1.1110	-1.005	1.826	1.239	435	919	.518	1.147	1.344	411	.728
540	6.400-6	-2543.2	9.0570	28.014	2.103	1.158	6.366-6	28.210	269	1.1359	-1.007	1.976	1.228	442	998	.532	1.157	1.342	433	.718
560	6.134-6	-2499.3	9.1368	27.963	2.287	1.168	6.113-6	28.092	277	1.1563	-1.008	2.106	1.219	450	1049	.555	1.168	1.340	457	.707
580	5.883-6	-2451.7	9.2203	27.903	2.475	1.179	5.874-6	27.958	284	1.1694	-1.009	2.207	1.213	457	1074	.585	1.178	1.338	481	.696
600	5.649-6	-2402.8	9.3033	27.811	2.211	1.189	5.649-6	27.811	292	1.1636	-1.008	2.211	1.212	466	1038	.622	1.189	1.336	505	.687
620	5.442-6	-2361.0	9.3718	27.684	1.942	1.198	5.442-6	27.684	299	1.1123	-1.006	1.942	1.228	478	872	.665	1.198	1.335	525	.681
640	5.258-6	-2325.4	9.4284	27.611	1.632	1.205	5.258-6	27.611	306	1.0551	-1.003	1.632	1.254	492	729	.685	1.205	1.333	543	.679
660	5.093-6	-2294.8	9.4754	27.581	1.450	1.211	5.093-6	27.581	312	1.0211	-1.001	1.450	1.275	504	661	.685	1.211	1.331	558	.679
680	4.941-6	-2266.6	9.5175	27.570	1.382	1.217	4.941-6	27.570	319	1.0073	-1.000	1.382	1.284	513	645	.683	1.217	1.329	571	.679
700	4.799-6	-2239.2	9.5572	27.566	1.363	1.222	4.799-6	27.566	326	1.0025	-1.000	1.363	1.286	521	651	.682	1.222	1.328	585	.681
720	4.666-6	-2212.0	9.5956	27.565	1.361	1.228	4.666-6	27.565	332	1.0009	-1.000	1.361	1.285	528	662	.682	1.228	1.326	598	.682
740	4.539-6	-2184.8	9.6329	27.565	1.363	1.233	4.539-6	27.565	339	1.0003	-1.000	1.363	1.284	535	676	.683	1.233	1.324	611	.683
760	4.420-6	-2157.5	9.6693	27.564	1.366	1.239	4.420-6	27.564	345	1.0001	-1.000	1.366	1.283	542	690	.683	1.239	1.322	624	.685
780	4.307-6	-2130.1	9.7048	27.564	1.369	1.244	4.307-6	27.564	351	1.0001	-1.000	1.369	1.283	549	704	.684	1.244	1.320	637	.686
800	4.199-6	-2102.7	9.7395	27.564	1.372	1.249	4.199-6	27.564	358	1.0000	-1.000	1.372	1.282	556	717	.684	1.249	1.318	650	.687

TABLE 11.2E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.097-4	-3266.6	6.1365	27.564	1.030	1.026	1.845-4	30.283	129	1.0000	-1.000	0.979	1.390	276	172	.735	0.979	1.390	172	.735
220	1.906-4	-3245.5	6.2368	27.564	1.094	1.044	1.677-4	30.280	140	1.0000	-1.000	0.982	1.388	290	188	.731	0.982	1.388	188	.731
240	1.743-4	-3220.8	6.3440	27.564	1.491	1.063	1.536-4	30.250	150	1.0000	-1.000	0.986	1.386	302	204	.728	0.986	1.387	204	.728
260	1.582-4	-3174.2	6.5295	27.565	3.792	1.081	1.408-4	30.047	159	1.0000	-1.000	0.998	1.384	316	217	.730	0.998	1.384	217	.730
280	1.351-4	-3004.7	7.1529	27.584	12.140	1.172	1.266-4	29.087	160	1.0000	-1.000	1.044	1.377	332	222	.752	1.044	1.377	222	.752
298	1.181-4	-2877.5	7.5997	27.654	1.093	1.075	1.159-4	28.354	162	1.0000	-1.000	1.083	1.371	346	229	.766	1.082	1.372	229	.767
300	1.174-4	-2875.5	7.6065	27.657	1.094	1.076	1.152-4	28.356	163	1.0000	-1.000	1.083	1.371	347	231	.766	1.083	1.371	230	.767
320	1.100-4	-2853.5	7.6773	27.697	1.103	1.081	1.081-4	28.374	173	1.0001	-1.000	1.087	1.369	358	246	.764	1.086	1.369	245	.766
340	1.036-4	-2831.3	7.7445	27.743	1.113	1.086	1.018-4	28.394	182	1.0003	-1.000	1.093	1.366	369	262	.762	1.090	1.367	260	.766
360	9.780-5	-2809.0	7.8084	27.795	1.123	1.091	9.620-5	28.417	192	1.0007	-1.000	1.100	1.363	379	279	.755	1.094	1.365	274	.765
380	9.265-5	-2786.4	7.8695	27.851	1.136	1.096	9.121-5	28.441	201	1.0015	-1.000	1.111	1.359	388	300	.744	1.099	1.362	290	.763
400	8.800-5	-2763.5	7.9282	27.910	1.153	1.102	8.673-5	28.466	210	1.0029	-1.000	1.125	1.353	398	324	.728	1.104	1.360	305	.760
420	8.380-5	-2740.2	7.9850	27.969	1.176	1.108	8.266-5	28.488	219	1.0052	-1.000	1.146	1.346	406	355	.707	1.109	1.357	320	.758
440	7.996-5	-2716.4	8.0403	28.026	1.207	1.114	7.896-5	28.508	227	1.0089	-1.000	1.176	1.337	414	393	.680	1.115	1.354	335	.757
460	7.644-5	-2691.9	8.0948	28.079	1.248	1.121	7.556-5	28.523	236	1.0144	-1.001	1.216	1.326	422	441	.649	1.120	1.352	350	.755
480	7.320-5	-2666.4	8.1491	28.126	1.303	1.127	7.243-5	28.530	244	1.0222	-1.001	1.269	1.314	429	501	.617	1.127	1.349	365	.753
500	7.019-5	-2639.7	8.2036	28.163	1.373	1.134	6.953-5	28.527	252	1.0327	-1.002	1.337	1.300	435	574	.586	1.134	1.346	381	.750
520	6.738-5	-2611.4	8.2591	28.190	1.459	1.142	6.682-5	28.513	260	1.0463	-1.002	1.421	1.286	442	659	.560	1.141	1.343	398	.746
540	6.475-5	-2581.2	8.3161	28.202	1.563	1.150	6.428-5	28.483	268	1.0629	-1.003	1.520	1.272	448	752	.542	1.149	1.341	416	.741
560	6.227-5	-2548.7	8.3751	28.200	1.685	1.158	6.188-5	28.437	276	1.0824	-1.004	1.635	1.258	454	847	.532	1.157	1.338	434	.734
580	5.991-5	-2513.7	8.4366	28.181	1.824	1.167	5.962-5	28.373	283	1.1039	-1.005	1.762	1.246	460	940	.531	1.166	1.336	454	.728
600	5.768-5	-2475.7	8.5010	28.148	1.981	1.176	5.746-5	28.291	291	1.1267	-1.007	1.899	1.234	466	1026	.538	1.175	1.333	475	.720
620	5.555-5	-2434.3	8.5688	28.103	2.159	1.185	5.541-5	28.192	298	1.1493	-1.008	2.043	1.223	473	1101	.553	1.185	1.331	497	.712
640	5.351-5	-2389.1	8.6405	28.048	2.365	1.195	5.347-5	28.078	305	1.1705	-1.009	2.190	1.214	480	1165	.574	1.195	1.330	519	.703
660	5.159-5	-2342.4	8.7123	27.938	2.268	1.204	5.159-5	27.938	312	1.1783	-1.010	2.268	1.209	487	1170	.605	1.204	1.328	541	.695
680	4.982-5	-2297.7	8.7791	27.797	2.179	1.213	4.982-5	27.797	319	1.1570	-1.009	2.179	1.212	497	1079	.645	1.213	1.327	561	.690
700	4.820-5	-2256.2	8.8392	27.688	1.949	1.220	4.820-5	27.688	326	1.1115	-1.006	1.949	1.226	508	937	.677	1.220	1.326	580	.686
720	4.675-5	-2219.9	8.8903	27.621	1.687	1.227	4.675-5	27.621	332	1.0617	-1.003	1.687	1.246	520	811	.691	1.227	1.325	596	.684
740	4.543-5	-2188.1	8.9339	27.588	1.511	1.233	4.543-5	27.588	339	1.0282	-1.002	1.511	1.265	531	742	.690	1.233	1.323	610	.684
760	4.421-5	-2158.9	8.9730	27.574	1.428	1.239	4.421-5	27.574	345	1.0118	-1.001	1.428	1.275	540	717	.687	1.239	1.322	624	.685
780	4.307-5	-2130.7	9.0095	27.568	1.394	1.244	4.307-5	27.568	351	1.0049	-1.000	1.394	1.279	549	715	.685	1.244	1.320	637	.686
800	4.199-5	-2103.0	9.0447	27.566	1.382	1.249	4.199-5	27.566	358	1.0020	-1.000	1.382	1.280	556	722	.685	1.249	1.318	650	.687

TABLE 11.3E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO ◘ 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.097-3	-3266.6	5.5801	27.564	1.026	1.026	1.845-3	30.283	129	1.0000	-1.000	0.979	1.390	276	172	.735	0.979	1.390	172	.735
220	1.906-3	-3245.9	5.6789	27.564	1.049	1.044	1.677-3	30.283	140	1.0000	-1.000	0.982	1.388	290	188	.730	0.982	1.388	188	.730
240	1.747-3	-3224.4	5.7722	27.564	1.106	1.063	1.538-3	30.280	151	1.0000	-1.000	0.985	1.387	302	204	.727	0.985	1.387	204	.727
260	1.610-3	-3200.5	5.8678	27.564	1.344	1.082	1.418-3	30.259	161	1.0000	-1.000	0.989	1.385	315	220	.725	0.989	1.385	220	.725
280	1.483-3	-3133.9	6.1128	27.564	2.184	1.294	1.313-3	30.163	170	1.0000	-1.000	0.996	1.382	327	234	.725	0.996	1.382	234	.725
298	1.363-3	-3081.7	6.2928	27.567	3.820	1.269	1.222-3	29.901	177	1.0000	-1.000	1.011	1.379	338	244	.731	1.011	1.379	244	.731
300	1.349-3	-3074.4	6.3172	27.568	4.092	1.265	1.213-3	29.857	177	1.0000	-1.000	1.013	1.379	339	245	.732	1.013	1.379	245	.732
320	1.172-3	-2946.2	6.7289	27.616	9.832	1.170	1.105-3	29.015	179	1.0000	-1.000	1.056	1.373	355	251	.752	1.055	1.373	251	.752
340	1.036-3	-2831.4	7.0817	27.743	1.111	1.086	1.018-3	28.395	182	1.0001	-1.000	1.091	1.367	369	260	.765	1.090	1.367	259	.766
360	9.780-4	-2809.1	7.1455	27.796	1.119	1.091	9.620-4	28.418	192	1.0002	-1.000	1.096	1.364	379	276	.762	1.094	1.365	274	.765
380	9.265-4	-2786.6	7.2062	27.852	1.128	1.096	9.122-4	28.443	201	1.0005	-1.000	1.103	1.361	389	293	.757	1.099	1.362	289	.763
400	8.802-4	-2764.0	7.2643	27.911	1.137	1.102	8.674-4	28.469	210	1.0009	-1.000	1.111	1.358	398	311	.750	1.104	1.360	305	.760
420	8.382-4	-2741.1	7.3200	27.972	1.148	1.108	8.268-4	28.495	219	1.0017	-1.000	1.121	1.353	407	331	.741	1.109	1.357	319	.759
440	8.000-4	-2718.0	7.3737	28.033	1.162	1.114	7.899-4	28.520	227	1.0028	-1.000	1.134	1.349	416	353	.730	1.114	1.354	334	.758
460	7.651-4	-2694.6	7.4257	28.092	1.179	1.120	7.562-4	28.543	236	1.0047	-1.000	1.151	1.343	424	379	.715	1.120	1.352	348	.757
480	7.330-4	-2670.8	7.4764	28.148	1.201	1.126	7.252-4	28.563	244	1.0073	-1.000	1.173	1.336	432	410	.697	1.126	1.349	363	.756
500	7.035-4	-2646.6	7.5259	28.200	1.228	1.133	6.966-4	28.580	252	1.0110	-1.001	1.200	1.328	440	447	.676	1.132	1.346	378	.755
520	6.760-4	-2621.7	7.5747	28.246	1.263	1.140	6.701-4	28.591	260	1.0160	-1.001	1.235	1.320	447	492	.652	1.139	1.343	393	.753
540	6.505-4	-2596.0	7.6232	28.286	1.306	1.147	6.454-4	28.596	268	1.0226	-1.001	1.278	1.310	454	544	.628	1.146	1.340	409	.750
560	6.267-4	-2569.4	7.6716	28.318	1.359	1.154	6.222-4	28.593	275	1.0309	-1.002	1.330	1.300	460	604	.606	1.153	1.337	425	.747
580	6.043-4	-2541.6	7.7203	28.341	1.422	1.162	6.005-4	28.582	283	1.0413	-1.002	1.393	1.289	466	673	.586	1.160	1.335	441	.744
600	5.832-4	-2512.4	7.7698	28.353	1.499	1.169	5.801-4	28.559	290	1.0539	-1.003	1.468	1.278	472	747	.570	1.168	1.332	459	.740
620	5.632-4	-2481.5	7.8204	28.354	1.590	1.177	5.607-4	28.526	298	1.0688	-1.004	1.555	1.266	478	828	.559	1.176	1.329	476	.735
640	5.442-4	-2448.7	7.8725	28.344	1.698	1.185	5.423-4	28.480	305	1.0861	-1.005	1.657	1.255	484	912	.554	1.184	1.327	495	.730
660	5.261-4	-2413.5	7.9267	28.323	1.826	1.194	5.248-4	28.421	312	1.1057	-1.006	1.774	1.243	490	999	.554	1.193	1.325	514	.724
680	5.088-4	-2375.5	7.9834	28.292	1.978	1.202	5.080-4	28.348	319	1.1275	-1.007	1.907	1.232	496	1088	.560	1.202	1.323	534	.718
700	4.921-4	-2334.1	8.0433	28.252	2.160	1.210	4.920-4	28.261	326	1.1512	-1.009	2.056	1.221	501	1176	.570	1.210	1.321	554	.712
720	4.763-4	-2291.4	8.1036	28.138	2.175	1.219	4.763-4	28.138	333	1.1692	-1.010	2.175	1.214	508	1229	.588	1.219	1.320	574	.706
740	4.612-4	-2247.1	8.1642	28.004	2.240	1.227	4.612-4	28.004	339	1.1770	-1.010	2.240	1.210	516	1237	.614	1.227	1.319	593	.701
760	4.470-4	-2202.4	8.2238	27.874	2.217	1.235	4.470-4	27.874	345	1.1690	-1.010	2.217	1.211	524	1191	.643	1.235	1.319	612	.697
780	4.337-4	-2159.1	8.2800	27.761	2.086	1.242	4.337-4	27.761	352	1.1412	-1.008	2.086	1.218	533	1092	.671	1.242	1.318	630	.693
800	4.216-4	-2119.5	8.3302	27.676	1.877	1.248	4.216-4	27.676	358	1.0996	-1.006	1.877	1.231	544	972	.691	1.248	1.317	646	.691

TABLE 11.4E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.092-2	-3266.6	5.0239	27.564	1.026	1.026	1.845-2	30.283	129	1.0000	-1.000	0.979	1.390	276	172	.735	0.979	1.390	172	.735
220	1.902-2	-3245.9	5.1225	27.564	1.045	1.044	1.677-2	30.283	140	1.0000	-1.000	0.982	1.388	290	188	.730	0.982	1.388	188	.730
240	1.744-2	-3224.8	5.2144	27.564	1.067	1.063	1.538-2	30.283	151	1.0000	-1.000	0.985	1.387	302	204	.727	0.985	1.387	204	.727
260	1.610-2	-3203.1	5.3012	27.564	1.109	1.083	1.419-2	30.281	161	1.0000	-1.000	0.988	1.385	314	220	.724	0.988	1.385	220	.724
280	1.494-2	-3145.4	5.5132	27.564	1.392	1.305	1.318-2	30.271	171	1.0000	-1.000	0.992	1.383	326	235	.723	0.992	1.383	235	.723
298	1.400-2	-3119.0	5.6047	27.564	1.543	1.304	1.236-2	30.245	180	1.0000	-1.000	0.996	1.381	336	248	.723	0.996	1.381	248	.723
300	1.391-2	-3116.1	5.6143	27.564	1.566	1.304	1.228-2	30.240	181	1.0000	-1.000	0.997	1.381	337	249	.723	0.997	1.381	249	.723
320	1.295-2	-3081.2	5.7266	27.565	1.972	1.300	1.148-2	30.156	189	1.0000	-1.000	1.004	1.378	349	262	.725	1.004	1.378	262	.725
340	1.199-2	-3034.3	5.8688	27.568	2.828	1.285	1.074-2	29.957	197	1.0000	-1.000	1.017	1.375	360	274	.731	1.017	1.375	274	.731
360	1.092-2	-2962.1	6.0746	27.594	4.616	1.245	1.000-2	29.541	202	1.0000	-1.000	1.040	1.371	373	284	.740	1.040	1.371	284	.741
380	9.581-3	-2834.2	6.4193	27.753	8.839	1.145	9.222-3	28.755	204	1.0001	-1.000	1.084	1.364	387	292	.755	1.083	1.364	292	.757
400	8.802-3	-2764.1	6.6012	27.912	1.132	1.102	8.674-3	28.470	210	1.0003	-1.000	1.106	1.359	398	307	.757	1.104	1.360	305	.760
420	8.383-3	-2741.4	6.6566	27.973	1.140	1.108	8.269-3	28.497	219	1.0005	-1.000	1.113	1.356	408	323	.753	1.109	1.357	319	.759
440	8.001-3	-2718.5	6.7098	28.035	1.148	1.114	7.900-3	28.524	227	1.0009	-1.000	1.120	1.352	416	340	.749	1.114	1.354	334	.758
460	7.653-3	-2695.5	6.7610	28.096	1.157	1.120	7.564-3	28.550	235	1.0015	-1.000	1.130	1.349	425	358	.743	1.120	1.352	348	.757
480	7.334-3	-2672.3	6.8105	28.155	1.167	1.126	7.255-3	28.574	244	1.0023	-1.000	1.141	1.344	433	378	.736	1.125	1.349	362	.757
500	7.039-3	-2648.8	6.8584	28.212	1.180	1.132	6.970-3	28.597	252	1.0035	-1.000	1.154	1.340	441	400	.727	1.132	1.346	377	.756
520	6.768-3	-2625.1	6.9049	28.266	1.195	1.139	6.707-3	28.618	260	1.0052	-1.000	1.169	1.335	449	425	.715	1.138	1.343	391	.755
540	6.515-3	-2601.0	6.9503	28.316	1.213	1.146	6.462-3	28.636	267	1.0074	-1.000	1.188	1.329	457	453	.702	1.144	1.340	406	.753
560	6.281-3	-2576.5	6.9948	28.362	1.234	1.153	6.235-3	28.650	275	1.0103	-1.001	1.211	1.323	464	485	.687	1.151	1.337	421	.752
580	6.061-3	-2551.6	7.0386	28.404	1.260	1.160	6.022-3	28.660	283	1.0140	-1.001	1.237	1.316	471	521	.671	1.158	1.334	437	.750
600	5.856-3	-2526.1	7.0818	28.439	1.291	1.167	5.822-3	28.666	290	1.0187	-1.001	1.269	1.309	477	563	.654	1.165	1.331	452	.748
620	5.663-3	-2499.9	7.1247	28.469	1.329	1.174	5.635-3	28.667	298	1.0246	-1.001	1.307	1.301	484	609	.638	1.173	1.329	468	.745
640	5.481-3	-2472.9	7.1676	28.492	1.374	1.181	5.458-3	28.662	305	1.0318	-1.002	1.352	1.293	490	661	.623	1.180	1.326	484	.742
660	5.309-3	-2444.9	7.2107	28.509	1.428	1.189	5.290-3	28.650	312	1.0405	-1.002	1.405	1.284	496	718	.610	1.188	1.323	501	.739
680	5.146-3	-2415.7	7.2542	28.518	1.492	1.196	5.131-3	28.631	319	1.0509	-1.003	1.467	1.275	502	781	.599	1.195	1.321	518	.736
700	4.990-3	-2385.1	7.2986	28.520	1.570	1.204	4.980-3	28.604	326	1.0633	-1.004	1.541	1.265	507	849	.591	1.203	1.319	535	.733
720	4.842-3	-2352.8	7.3440	28.515	1.662	1.211	4.835-3	28.568	333	1.0779	-1.005	1.627	1.255	513	924	.586	1.211	1.316	552	.729
740	4.700-3	-2318.5	7.3910	28.502	1.771	1.219	4.697-3	28.522	339	1.0948	-1.006	1.727	1.245	518	1004	.584	1.219	1.314	570	.725
760	4.563-3	-2282.4	7.4393	28.456	1.836	1.227	4.563-3	28.456	346	1.1133	-1.007	1.836	1.236	524	1085	.585	1.227	1.313	588	.721
780	4.432-3	-2244.6	7.4883	28.366	1.942	1.234	4.432-3	28.366	352	1.1316	-1.008	1.942	1.228	530	1157	.591	1.234	1.311	606	.717
800	4.306-3	-2204.7	7.5388	28.265	2.044	1.241	4.306-3	28.265	358	1.1489	-1.009	2.044	1.221	536	1220	.601	1.241	1.311	623	.714

TABLE 11.5E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.084535; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	1.036-1	-3266.6	4.6351	27.564	1.026	1.026	9.226-2	30.283	129	1.0000	-1.000	0.979	1.390	276	172	.735	0.979	1.390	172	.735
220	9.427-2	-3245.9	4.7337	27.564	1.044	1.044	8.387-2	30.283	140	1.0000	-1.000	0.982	1.388	290	188	.730	0.982	1.388	188	.730
240	8.649-2	-3224.8	4.8254	27.564	1.064	1.063	7.689-2	30.283	151	1.0000	-1.000	0.985	1.387	302	204	.727	0.985	1.387	204	.727
260	7.990-2	-3203.3	4.9115	27.564	1.088	1.083	7.097-2	30.283	161	1.0000	-1.000	0.988	1.385	314	220	.724	0.988	1.385	220	.724
280	7.428-2	-3146.4	5.1206	27.564	1.323	1.306	6.590-2	30.281	171	1.0000	-1.000	0.991	1.383	326	235	.722	0.991	1.383	235	.722
298	6.976-2	-3122.2	5.2045	27.564	1.355	1.307	6.187-2	30.275	180	1.0000	-1.000	0.995	1.381	336	248	.722	0.995	1.381	248	.722
300	6.933-2	-3119.7	5.2129	27.564	1.360	1.307	6.149-2	30.275	181	1.0000	-1.000	0.995	1.381	337	250	.722	0.995	1.381	250	.722
320	6.494-2	-3091.8	5.3030	27.564	1.442	1.310	5.762-2	30.258	190	1.0000	-1.000	1.000	1.379	348	264	.723	1.000	1.379	264	.723
340	6.095-2	-3061.5	5.3947	27.564	1.603	1.311	5.416-2	30.218	199	1.0000	-1.000	1.006	1.377	359	277	.725	1.006	1.377	277	.725
360	5.720-2	-3026.8	5.4937	27.565	1.890	1.310	5.101-2	30.135	208	1.0000	-1.000	1.014	1.374	369	289	.727	1.014	1.374	289	.727
380	5.351-2	-2984.6	5.6078	27.570	2.377	1.301	4.807-2	29.978	215	1.0000	-1.000	1.025	1.371	380	301	.731	1.025	1.371	301	.731
400	4.968-2	-2929.5	5.7488	27.593	3.202	1.278	4.525-2	29.706	221	1.0000	-1.000	1.042	1.367	391	313	.736	1.042	1.367	313	.737
420	4.544-2	-2852.2	5.9372	27.681	4.691	1.229	4.246-2	29.269	226	1.0001	-1.000	1.069	1.362	403	324	.744	1.068	1.362	324	.745
440	4.038-2	-2732.0	6.2162	27.987	7.713	1.129	3.962-2	28.607	228	1.0003	-1.000	1.112	1.354	416	337	.753	1.109	1.355	334	.757
460	3.826-2	-2695.7	6.2974	28.097	1.151	1.120	3.782-2	28.551	235	1.0006	-1.000	1.124	1.350	425	352	.751	1.120	1.352	348	.758
480	3.667-2	-2672.6	6.3465	28.158	1.159	1.126	3.628-2	28.577	244	1.0010	-1.000	1.132	1.347	434	369	.747	1.125	1.349	362	.757
500	3.520-2	-2649.4	6.3940	28.216	1.167	1.132	3.486-2	28.602	252	1.0015	-1.000	1.142	1.343	442	387	.743	1.131	1.346	376	.757
520	3.384-2	-2625.9	6.4399	28.272	1.177	1.139	3.354-2	28.625	260	1.0023	-1.000	1.152	1.339	450	406	.737	1.138	1.343	391	.756
540	3.259-2	-2602.3	6.4845	28.325	1.188	1.145	3.232-2	28.646	267	1.0033	-1.000	1.164	1.335	457	427	.729	1.144	1.340	406	.754
560	3.142-2	-2578.4	6.5280	28.375	1.200	1.152	3.119-2	28.665	275	1.0046	-1.000	1.178	1.330	465	450	.720	1.151	1.337	420	.753
580	3.033-2	-2554.3	6.5703	28.421	1.215	1.159	3.013-2	28.682	283	1.0063	-1.000	1.194	1.325	472	475	.710	1.158	1.334	435	.751
600	2.931-2	-2529.8	6.6118	28.464	1.233	1.166	2.914-2	28.696	290	1.0085	-1.000	1.212	1.320	479	503	.700	1.165	1.331	451	.750
620	2.836-2	-2504.9	6.6526	28.502	1.254	1.173	2.821-2	28.707	297	1.0113	-1.001	1.234	1.315	486	533	.688	1.172	1.328	466	.748
640	2.746-2	-2479.6	6.6928	28.537	1.278	1.180	2.734-2	28.715	305	1.0147	-1.001	1.259	1.309	493	567	.676	1.179	1.326	481	.746
660	2.661-2	-2453.8	6.7325	28.566	1.307	1.187	2.651-2	28.719	312	1.0190	-1.001	1.288	1.303	499	604	.664	1.186	1.323	497	.744
680	2.582-2	-2427.3	6.7720	28.591	1.341	1.194	2.573-2	28.718	319	1.0241	-1.001	1.322	1.296	505	646	.653	1.193	1.320	513	.742
700	2.506-2	-2400.1	6.8114	28.612	1.381	1.202	2.499-2	28.714	326	1.0304	-1.002	1.362	1.289	511	691	.642	1.201	1.318	529	.740
720	2.434-2	-2372.0	6.8510	28.627	1.429	1.209	2.429-2	28.704	332	1.0379	-1.002	1.408	1.281	517	741	.632	1.208	1.315	545	.737
740	2.365-2	-2342.9	6.8909	28.637	1.485	1.216	2.362-2	28.688	339	1.0469	-1.003	1.463	1.273	522	796	.623	1.216	1.313	561	.735
760	2.300-2	-2312.6	6.9314	28.642	1.552	1.223	2.298-2	28.667	346	1.0575	-1.003	1.526	1.264	528	856	.617	1.223	1.311	578	.732
780	2.237-2	-2280.8	6.9726	28.636	1.598	1.231	2.237-2	28.636	352	1.0699	-1.004	1.598	1.256	533	921	.612	1.231	1.309	595	.729
800	2.177-2	-2248.1	7.0140	28.581	1.675	1.238	2.177-2	28.581	359	1.0833	-1.005	1.675	1.248	539	986	.609	1.238	1.307	611	.727

TABLE 12A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.016749; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 28.9287;
DRY AIR; GASEOUS COMPOSITION: CO2= .03405; H2O= .03542; N2= .76701; O2= .15432; AR= .00920

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7627-3	8.8136-2	-859.1	7.8409	7.1791	6.5173	5.8556	5.3930	1.0181	1.3934	283.0	128	175	.7471	200
210	1.6788-3	8.3939-2	-848.9	7.8906	7.2288	6.5670	5.9052	5.4426	1.0178	1.3935	290.0	134	183	.7446	210
220	1.6025-3	8.0124-2	-838.7	7.9379	7.2761	6.6143	5.9526	5.4900	1.0176	1.3936	296.8	139	191	.7421	220
230	1.5328-3	7.6640-2	-828.6	7.9831	7.3214	6.6596	5.9978	5.5352	1.0176	1.3936	303.5	145	199	.7397	230
240	1.4689-3	7.3447-2	-818.4	8.0265	7.3647	6.7029	6.0411	5.5785	1.0177	1.3936	310.0	150	207	.7375	240
250	1.4102-3	7.0509-2	-808.2	8.0680	7.4062	6.7444	6.0826	5.6201	1.0179	1.3935	316.4	155	215	.7356	250
260	1.3559-3	6.7797-2	-798.0	8.1079	7.4461	6.7844	6.1226	5.6600	1.0182	1.3933	322.7	161	223	.7339	260
270	1.3057-3	6.5286-2	-787.8	8.1464	7.4846	6.8228	6.1610	5.6984	1.0187	1.3930	328.8	166	231	.7325	270
280	1.2591-3	6.2954-2	-777.7	8.1834	7.5216	6.8599	6.1981	5.7355	1.0192	1.3927	334.8	171	238	.7314	280
290	1.2157-3	6.0784-2	-767.5	8.2192	7.5574	6.8956	6.2338	5.7713	1.0199	1.3924	340.7	176	245	.7305	290
298	1.1824-3	5.9122-2	-759.1	8.2475	7.5857	6.9239	6.2621	5.7995	1.0205	1.3921	345.4	180	251	.7299	298
300	1.1751-3	5.8757-2	-757.3	8.2538	7.5920	6.9302	6.2684	5.8059	1.0206	1.3920	346.4	181	253	.7298	300
310	1.1372-3	5.6862-2	-747.0	8.2873	7.6255	6.9637	6.3019	5.8393	1.0215	1.3915	352.1	185	259	.7297	310
320	1.1017-3	5.5085-2	-736.8	8.3197	7.6579	6.9961	6.3344	5.8718	1.0224	1.3910	357.7	190	266	.7297	320
330	1.0683-3	5.3416-2	-726.6	8.3512	7.6894	7.0276	6.3658	5.9033	1.0235	1.3905	363.2	195	273	.7297	330
340	1.0369-3	5.1845-2	-716.4	8.3818	7.7200	7.0582	6.3964	5.9338	1.0246	1.3899	368.5	199	280	.7298	340
350	1.0073-3	5.0364-2	-706.1	8.4115	7.7497	7.0879	6.4261	5.9636	1.0258	1.3892	373.8	204	286	.7299	350
360	9.7929-4	4.8965-2	-695.8	8.4404	7.7786	7.1168	6.4550	5.9925	1.0271	1.3885	379.0	208	293	.7298	360
370	9.5282-4	4.7641-2	-685.6	8.4686	7.8068	7.1450	6.4832	6.0206	1.0285	1.3878	384.2	213	300	.7296	370
380	9.2775-4	4.6387-2	-675.3	8.4960	7.8342	7.1724	6.5106	6.0481	1.0300	1.3870	389.2	217	306	.7294	380
390	9.0396-4	4.5198-2	-665.0	8.5228	7.8610	7.1992	6.5374	6.0749	1.0315	1.3862	394.2	221	313	.7292	390
400	8.8136-4	4.4068-2	-654.6	8.5489	7.8871	7.2253	6.5636	6.1010	1.0332	1.3854	399.1	226	320	.7289	400
410	8.5986-4	4.2993-2	-644.3	8.5745	7.9127	7.2509	6.5891	6.1265	1.0348	1.3845	403.9	230	326	.7288	410
420	8.3939-4	4.1970-2	-633.9	8.5994	7.9376	7.2758	6.6140	6.1515	1.0366	1.3836	408.7	234	333	.7286	420
430	8.1987-4	4.0994-2	-623.6	8.6238	7.9620	7.3002	6.6385	6.1759	1.0384	1.3827	413.4	238	339	.7285	430
440	8.0124-4	4.0062-2	-613.2	8.6477	7.9859	7.3241	6.6624	6.1998	1.0403	1.3818	418.0	242	346	.7284	440
450	7.8343-4	3.9172-2	-602.8	8.6711	8.0093	7.3475	6.6858	6.2232	1.0422	1.3808	422.6	246	352	.7283	450
460	7.6640-4	3.8320-2	-592.3	8.6940	8.0323	7.3705	6.7087	6.2461	1.0442	1.3798	427.1	250	358	.7282	460
470	7.5009-4	3.7505-2	-581.9	8.7165	8.0547	7.3929	6.7312	6.2686	1.0462	1.3788	431.6	254	365	.7281	470
480	7.3447-4	3.6723-2	-571.4	8.7386	8.0768	7.4150	6.7532	6.2906	1.0483	1.3777	436.0	258	371	.7281	480
490	7.1948-4	3.5974-2	-560.9	8.7602	8.0984	7.4366	6.7748	6.3123	1.0505	1.3767	440.3	262	378	.7280	490
500	7.0509-4	3.5254-2	-550.4	8.7815	8.1197	7.4579	6.7961	6.3335	1.0526	1.3756	444.6	265	384	.7280	500
510	6.9126-4	3.4563-2	-539.9	8.8023	8.1405	7.4787	6.8170	6.3544	1.0549	1.3745	448.9	269	390	.7280	510
520	6.7797-4	3.3899-2	-529.3	8.8228	8.1610	7.4992	6.8375	6.3749	1.0571	1.3734	453.1	273	396	.7279	520
530	6.6518-4	3.3259-2	-518.7	8.8430	8.1812	7.5194	6.8576	6.3951	1.0594	1.3723	457.2	277	403	.7279	530
540	6.5286-4	3.2643-2	-508.1	8.8628	8.2010	7.5392	6.8774	6.4149	1.0618	1.3712	461.3	280	409	.7278	540
550	6.4099-4	3.2050-2	-497.5	8.8823	8.2205	7.5587	6.8969	6.4344	1.0641	1.3700	465.4	284	415	.7278	550
560	6.2954-4	3.1477-2	-486.8	8.9015	8.2397	7.5779	6.9161	6.4536	1.0665	1.3689	469.4	288	422	.7277	560
570	6.1850-4	3.0925-2	-476.1	8.9204	8.2586	7.5968	6.9350	6.4725	1.0689	1.3678	473.4	291	428	.7276	570
580	6.0784-4	3.0392-2	-465.4	8.9390	8.2772	7.6154	6.9537	6.4911	1.0714	1.3666	477.3	295	434	.7275	580
590	5.9753-4	2.9877-2	-454.7	8.9573	8.2956	7.6338	6.9720	6.5094	1.0739	1.3654	481.2	298	441	.7274	590

TABLE 12A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.016749; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 28.9287;
DRY AIR; GASEOUS COMPOSITION: CO2= .03405; H2O= .03542; N2= .76701; O2= .15432; AR= .00920

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8757-4	2.9379-2	-444.0	8.9754	8.3136	7.6518	6.9901	6.5275	1.0764	1.3643	485.0	302	447	.7273	600
610	5.7794-4	2.8897-2	-433.2	8.9932	8.3314	7.6697	7.0079	6.5453	1.0789	1.3631	488.9	305	453	.7271	610
620	5.6862-4	2.8431-2	-422.4	9.0108	8.3490	7.6872	7.0254	6.5629	1.0814	1.3620	492.6	309	460	.7269	620
630	5.5959-4	2.7980-2	-411.6	9.0281	8.3663	7.7045	7.0428	6.5802	1.0840	1.3608	496.4	312	466	.7267	630
640	5.5085-4	2.7543-2	-400.7	9.0452	8.3834	7.7216	7.0599	6.5973	1.0865	1.3597	500.1	316	472	.7265	640
650	5.4238-4	2.7119-2	-389.8	9.0621	8.4003	7.7385	7.0767	6.6141	1.0891	1.3585	503.8	319	479	.7263	650
660	5.3416-4	2.6708-2	-378.9	9.0787	8.4169	7.7552	7.0934	6.6308	1.0917	1.3573	507.4	323	485	.7260	660
670	5.2619-4	2.6309-2	-368.0	9.0952	8.4334	7.7716	7.1098	6.6472	1.0943	1.3562	511.0	326	492	.7258	670
680	5.1845-4	2.5922-2	-357.0	9.1114	8.4496	7.7878	7.1260	6.6635	1.0969	1.3551	514.6	329	498	.7256	680
690	5.1093-4	2.5547-2	-346.1	9.1274	8.4656	7.8039	7.1421	6.6795	1.0995	1.3539	518.2	333	504	.7254	690
700	5.0364-4	2.5182-2	-335.1	9.1433	8.4815	7.8197	7.1579	6.6953	1.1021	1.3528	521.7	336	511	.7251	700
710	4.9654-4	2.4827-2	-324.0	9.1589	8.4971	7.8353	7.1736	6.7110	1.1047	1.3517	525.2	339	517	.7249	710
720	4.8965-4	2.4482-2	-313.0	9.1744	8.5126	7.8508	7.1890	6.7265	1.1073	1.3505	528.7	343	524	.7247	720
730	4.8294-4	2.4147-2	-301.9	9.1897	8.5279	7.8661	7.2043	6.7417	1.1099	1.3494	532.1	346	530	.7245	730
740	4.7641-4	2.3821-2	-290.8	9.2048	8.5430	7.8812	7.2194	6.7569	1.1125	1.3483	535.5	349	536	.7243	740
750	4.7006-4	2.3503-2	-279.6	9.2197	8.5580	7.8962	7.2344	6.7718	1.1151	1.3472	538.9	352	543	.7241	750
760	4.6387-4	2.3194-2	-268.5	9.2345	8.5727	7.9110	7.2492	6.7866	1.1177	1.3462	542.3	356	549	.7239	760
770	4.5785-4	2.2893-2	-257.3	9.2492	8.5874	7.9256	7.2638	6.8012	1.1202	1.3451	545.6	359	555	.7237	770
780	4.5198-4	2.2599-2	-246.1	9.2636	8.6018	7.9401	7.2783	6.8157	1.1228	1.3440	548.9	362	562	.7235	780
790	4.4626-4	2.2313-2	-234.8	9.2779	8.6162	7.9544	7.2926	6.8300	1.1254	1.3430	552.2	365	568	.7233	790
800	4.4068-4	2.2034-2	-223.5	9.2921	8.6303	7.9685	7.3068	6.8442	1.1279	1.3420	555.5	368	574	.7231	800
810	4.3524-4	2.1762-2	-212.3	9.3061	8.6444	7.9826	7.3208	6.8582	1.1304	1.3409	558.7	371	581	.7229	810
820	4.2993-4	2.1497-2	-200.9	9.3200	8.6582	7.9965	7.3347	6.8721	1.1329	1.3399	562.0	375	587	.7228	820
830	4.2475-4	2.1238-2	-189.6	9.3338	8.6720	8.0102	7.3484	6.8859	1.1354	1.3389	565.2	378	593	.7226	830
840	4.1970-4	2.0985-2	-178.2	9.3474	8.6856	8.0238	7.3620	6.8995	1.1379	1.3379	568.3	381	600	.7225	840
850	4.1476-4	2.0738-2	-166.8	9.3609	8.6991	8.0373	7.3755	6.9129	1.1403	1.3370	571.5	384	606	.7224	850
860	4.0994-4	2.0497-2	-155.4	9.3742	8.7124	8.0507	7.3889	6.9263	1.1428	1.3360	574.7	387	612	.7222	860
870	4.0522-4	2.0261-2	-144.0	9.3875	8.7257	8.0639	7.4021	6.9395	1.1452	1.3351	577.8	390	618	.7221	870
880	4.0062-4	2.0031-2	-132.5	9.4006	8.7388	8.0770	7.4152	6.9526	1.1476	1.3341	580.9	393	624	.7220	880
890	3.9612-4	1.9806-2	-121.0	9.4135	8.7517	8.0900	7.4282	6.9656	1.1499	1.3332	584.0	396	630	.7218	890
900	3.9172-4	1.9586-2	-109.5	9.4264	8.7646	8.1028	7.4410	6.9785	1.1523	1.3323	587.1	399	637	.7217	900
910	3.8741-4	1.9371-2	-98.0	9.4391	8.7774	8.1156	7.4538	6.9912	1.1546	1.3314	590.1	402	643	.7216	910
920	3.8320-4	1.9160-2	-86.4	9.4518	8.7900	8.1282	7.4664	7.0038	1.1568	1.3306	593.1	405	649	.7215	920
930	3.7908-4	1.8954-2	-74.9	9.4643	8.8025	8.1407	7.4789	7.0164	1.1591	1.3297	596.2	408	655	.7214	930
940	3.7505-4	1.8752-2	-63.3	9.4767	8.8149	8.1531	7.4913	7.0288	1.1613	1.3289	599.2	410	661	.7213	940
950	3.7110-4	1.8555-2	-51.6	9.4890	8.8272	8.1654	7.5036	7.0411	1.1635	1.3281	602.2	413	667	.7212	950
960	3.6723-4	1.8362-2	-40.0	9.5012	8.8394	8.1776	7.5158	7.0533	1.1657	1.3272	605.1	416	673	.7211	960
970	3.6345-4	1.8172-2	-28.3	9.5133	8.8515	8.1897	7.5279	7.0654	1.1678	1.3265	608.1	419	679	.7210	970
980	3.5974-4	1.7987-2	-16.6	9.5253	8.8635	8.2017	7.5399	7.0773	1.1699	1.3257	611.1	422	685	.7209	980
990	3.5611-4	1.7805-2	-4.9	9.5372	8.8754	8.2136	7.5518	7.0892	1.1720	1.3249	614.0	425	691	.7208	990

TABLE 12A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.016749; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.2511; MW = 28.9287;
DRY AIR; GASEOUS COMPOSITION: CO2= .03405; H2O= .03542; N2= .76701; O2= .15432; AR= .00920

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5254-4	1.7627-2	6.8	9.5490	8.8872	8.2254	7.5636	7.1010	1.1740	1.3242	616.9	428	697	.7207	1000
1050	3.3576-4	1.6788-2	65.8	9.6065	8.9447	8.2829	7.6211	7.1585	1.1835	1.3208	631.3	442	725	.7206	1050
1100	3.2050-4	1.6025-2	125.2	9.6617	8.9999	8.3382	7.6764	7.2138	1.1925	1.3176	645.4	455	754	.7206	1100
1150	3.0656-4	1.5328-2	185.0	9.7149	9.0531	8.3914	7.7296	7.2670	1.2011	1.3146	659.2	469	781	.7206	1150
1200	2.9379-4	1.4689-2	245.3	9.7662	9.1044	8.4426	7.7809	7.3183	1.2092	1.3118	672.6	482	808	.7207	1200
1250	2.8204-4	1.4102-2	305.9	9.8157	9.1540	8.4922	7.8304	7.3678	1.2170	1.3092	685.8	495	835	.7209	1250
1300	2.7119-4	1.3559-2	367.0	9.8636	9.2018	8.5400	7.8783	7.4157	1.2244	1.3067	698.7	507	862	.7210	1300
1350	2.6114-4	1.3057-2	428.4	9.9100	9.2482	8.5864	7.9246	7.4620	1.2315	1.3044	711.4	520	888	.7211	1350
1400	2.5182-4	1.2591-2	490.1	9.9549	9.2931	8.6313	7.9695	7.5069	1.2382	1.3023	723.9	532	914	.7212	1400
1450	2.4313-4	1.2157-2	552.2	9.9984	9.3366	8.6749	8.0131	7.5505	1.2446	1.3003	736.1	544	939	.7213	1450
1500	2.3503-4	1.1751-2	614.5	10.0407	9.3789	8.7172	8.0554	7.5928	1.2507	1.2984	748.2	556	964	.7214	1500
1550	2.2745-4	1.1372-2	677.2	10.0818	9.4200	8.7583	8.0965	7.6339	1.2564	1.2966	760.0	568	990	.7211	1550
1600	2.2034-4	1.1017-2	740.2	10.1218	9.4600	8.7982	8.1364	7.6739	1.2619	1.2949	771.7	580	1015	.7208	1600
1650	2.1366-4	1.0683-2	803.4	10.1607	9.4989	8.8371	8.1754	7.7128	1.2671	1.2934	783.2	591	1040	.7205	1650
1700	2.0738-4	1.0369-2	866.9	10.1986	9.5368	8.8750	8.2133	7.7507	1.2720	1.2919	794.5	603	1065	.7202	1700
1750	2.0145-4	1.0073-2	930.6	10.2356	9.5738	8.9120	8.2502	7.7876	1.2767	1.2905	805.7	614	1089	.7199	1750
1800	1.9586-4	9.7929-3	994.6	10.2716	9.6098	8.9480	8.2862	7.8237	1.2812	1.2892	816.7	625	1113	.7196	1800
1850	1.9056-4	9.5282-3	1058.7	10.3068	9.6450	8.9832	8.3214	7.8588	1.2854	1.2880	827.5	636	1137	.7193	1850
1900	1.8555-4	9.2775-3	1123.1	10.3411	9.6793	9.0175	8.3557	7.8932	1.2894	1.2868	838.3	647	1160	.7190	1900
1950	1.8079-4	9.0396-3	1187.7	10.3746	9.7128	9.0511	8.3893	7.9267	1.2932	1.2858	848.9	658	1184	.7187	1950
2000	1.7627-4	8.8136-3	1252.4	10.4074	9.7456	9.0838	8.4221	7.9595	1.2968	1.2847	859.4	669	1207	.7184	2000
2050	1.7197-4	8.5987-3	1317.3	10.4395	9.7777	9.1159	8.4541	7.9915	1.3002	1.2838	869.7	679	1229	.7183	2050
2100	1.6788-4	8.3939-3	1382.4	10.4708	9.8091	9.1473	8.4855	8.0229	1.3034	1.2829	879.9	690	1252	.7183	2100
2150	1.6397-4	8.1987-3	1447.7	10.5016	9.8398	9.1780	8.5162	8.0536	1.3065	1.2820	890.1	700	1274	.7182	2150
2200	1.6025-4	8.0124-3	1513.1	10.5316	9.8698	9.2081	8.5463	8.0837	1.3095	1.2812	900.1	711	1295	.7182	2200
2250	1.5669-4	7.8343-3	1578.6	10.5611	9.8993	9.2375	8.5757	8.1132	1.3123	1.2804	910.0	721	1317	.7182	2250
2300	1.5328-4	7.6640-3	1644.3	10.5900	9.9282	9.2664	8.6046	8.1420	1.3149	1.2797	919.8	731	1338	.7182	2300
2350	1.5002-4	7.5009-3	1710.1	10.6183	9.9565	9.2947	8.6329	8.1703	1.3174	1.2790	929.4	741	1359	.7182	2350
2400	1.4689-4	7.3447-3	1776.0	10.6460	9.9842	9.3224	8.6607	8.1981	1.3198	1.2784	939.0	751	1380	.7182	2400
2450	1.4390-4	7.1948-3	1842.1	10.6733	10.0115	9.3497	8.6879	8.2253	1.3221	1.2778	948.5	761	1401	.7183	2450
2500	1.4102-4	7.0509-3	1908.3	10.7000	10.0382	9.3764	8.7146	8.2521	1.3243	1.2772	958.0	771	1421	.7183	2500
2550	1.3825-4	6.9126-3	1974.5	10.7262	10.0645	9.4027	8.7409	8.2783	1.3264	1.2766	967.3	781	1442	.7182	2550
2600	1.3559-4	6.7797-3	2040.9	10.7520	10.0902	9.4284	8.7667	8.3041	1.3284	1.2761	976.5	790	1462	.7180	2600
2650	1.3304-4	6.6518-3	2107.4	10.7773	10.1156	9.4538	8.7920	8.3294	1.3304	1.2756	985.7	800	1483	.7178	2650
2700	1.3057-4	6.5286-3	2173.9	10.8022	10.1404	9.4787	8.8169	8.3543	1.3322	1.2751	994.7	810	1503	.7177	2700
2750	1.2820-4	6.4099-3	2240.6	10.8267	10.1649	9.5031	8.8413	8.3788	1.3340	1.2746	1003.7	819	1523	.7175	2750
2800	1.2591-4	6.2954-3	2307.3	10.8507	10.1890	9.5272	8.8654	8.4028	1.3358	1.2742	1012.6	829	1543	.7173	2800
2850	1.2370-4	6.1850-3	2374.2	10.8744	10.2126	9.5508	8.8890	8.4265	1.3374	1.2737	1021.4	838	1563	.7171	2850
2900	1.2157-4	6.0784-3	2441.1	10.8977	10.2359	9.5741	8.9123	8.4497	1.3390	1.2733	1030.2	847	1583	.7168	2900
2950	1.1951-4	5.9753-3	2508.1	10.9206	10.2588	9.5970	8.9352	8.4726	1.3406	1.2729	1038.9	857	1603	.7166	2950
3000	1.1751-4	5.8757-3	2575.1	10.9431	10.2813	9.6195	8.9578	8.4952	1.3422	1.2725	1047.5	866	1622	.7164	3000

TABLE 12.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016749; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9172-6	-109.5	9.4264	28.929	399	1.0000	-1.0000	1.1526	1.3322	587.0	637	.722	1.1523	1.3323	587.1	637	.722
950	3.7110-6	-51.6	9.4891	28.929	413	1.0000	-1.0000	1.1642	1.3278	602.1	667	.721	1.1635	1.3281	602.2	667	.721
1000	3.5254-6	6.9	9.5490	28.929	428	1.0000	-1.0000	1.1751	1.3238	616.8	697	.721	1.1740	1.3242	616.9	697	.721
1050	3.3576-6	65.9	9.6066	28.929	442	1.0000	-1.0000	1.1851	1.3202	631.2	726	.721	1.1835	1.3208	631.3	725	.721
1100	3.2050-6	125.4	9.6620	28.929	455	1.0000	-1.0000	1.1948	1.3167	645.2	755	.721	1.1925	1.3176	645.4	754	.721
1150	3.0656-6	185.4	9.7153	28.929	469	1.0000	-1.0000	1.2044	1.3134	658.9	783	.721	1.2011	1.3146	659.2	781	.721
1200	2.9379-6	245.9	9.7668	28.929	482	1.0000	-1.0000	1.2140	1.3102	672.2	812	.721	1.2092	1.3118	672.6	808	.721
1250	2.8204-6	306.8	9.8165	28.929	495	1.0000	-1.0000	1.2235	1.3071	685.3	840	.721	1.2170	1.3092	685.8	835	.721
1300	2.7119-6	368.2	9.8647	28.929	507	1.0001	-1.0000	1.2332	1.3040	698.0	868	.721	1.2244	1.3067	698.7	862	.721
1350	2.6114-6	430.1	9.9114	28.928	520	1.0001	-1.0000	1.2431	1.3008	710.4	897	.721	1.2315	1.3044	711.4	888	.721
1400	2.5181-6	492.5	9.9568	28.928	532	1.0002	-1.0000	1.2536	1.2977	722.6	926	.721	1.2382	1.3023	723.9	914	.721
1450	2.4313-6	555.5	10.0010	28.928	544	1.0004	-1.0000	1.2648	1.2944	734.5	956	.720	1.2446	1.3003	736.1	939	.721
1500	2.3502-6	619.0	10.0441	28.927	556	1.0007	-1.0000	1.2771	1.2909	746.0	987	.720	1.2507	1.2984	748.2	965	.721
1550	2.2743-6	683.2	10.0862	28.927	568	1.0011	-1.0000	1.2911	1.2871	757.3	1021	.719	1.2564	1.2966	760.0	990	.721
1600	2.2031-6	748.2	10.1274	28.925	580	1.0018	-1.0000	1.3076	1.2830	768.1	1058	.717	1.2619	1.2950	771.7	1015	.721
1650	2.1362-6	814.0	10.1680	28.923	591	1.0028	-1.0001	1.3276	1.2782	778.6	1100	.714	1.2671	1.2934	783.3	1040	.720
1700	2.0732-6	881.0	10.2079	28.920	603	1.0043	-1.0001	1.3525	1.2727	788.7	1148	.710	1.2720	1.2920	794.6	1065	.720
1750	2.0136-6	949.4	10.2476	28.916	614	1.0065	-1.0002	1.3841	1.2663	798.2	1207	.704	1.2767	1.2907	805.9	1089	.720
1800	1.9573-6	1019.6	10.2871	28.909	625	1.0097	-1.0003	1.4250	1.2587	807.2	1280	.696	1.2812	1.2895	817.0	1113	.719
1850	1.9038-6	1092.1	10.3269	28.900	636	1.0144	-1.0004	1.4781	1.2498	815.6	1373	.685	1.2854	1.2884	828.1	1137	.719
1900	1.8528-6	1167.7	10.3672	28.886	647	1.0210	-1.0006	1.5475	1.2396	823.3	1495	.670	1.2894	1.2874	839.1	1161	.719
1950	1.8041-6	1247.2	10.4085	28.868	658	1.0301	-1.0009	1.6376	1.2281	830.5	1655	.651	1.2931	1.2866	850.0	1184	.718
2000	1.7574-6	1331.9	10.4513	28.841	668	1.0426	-1.0013	1.7539	1.2156	837.2	1866	.628	1.2967	1.2859	861.0	1208	.718
2050	1.7124-6	1423.1	10.4964	28.805	679	1.0593	-1.0019	1.9022	1.2025	843.5	2145	.602	1.3001	1.2854	872.1	1231	.717
2100	1.6688-6	1522.7	10.5444	28.757	689	1.0813	-1.0027	2.0886	1.1893	849.8	2507	.574	1.3033	1.2851	883.3	1254	.716
2150	1.6264-6	1632.7	10.5961	28.693	699	1.1095	-1.0037	2.3187	1.1766	856.2	2970	.546	1.3063	1.2851	894.8	1277	.716
2200	1.5848-6	1755.4	10.6525	28.610	709	1.1447	-1.0051	2.5968	1.1649	863.0	3550	.519	1.3092	1.2853	906.5	1300	.714
2250	1.5438-6	1893.2	10.7145	28.503	719	1.1878	-1.0068	2.9252	1.1546	870.5	4254	.495	1.3120	1.2859	918.7	1324	.713
2300	1.5032-6	2048.7	10.7828	28.370	729	1.2389	-1.0088	3.3034	1.1459	878.9	5078	.474	1.3146	1.2869	931.4	1348	.711
2350	1.4628-6	2224.3	10.8583	28.208	738	1.2977	-1.0113	3.7273	1.1388	888.1	6002	.459	1.3172	1.2883	944.7	1374	.708
2400	1.4224-6	2422.1	10.9416	28.012	748	1.3636	-1.0142	4.1888	1.1332	898.5	6988	.448	1.3197	1.2902	958.7	1401	.704
2450	1.3820-6	2643.6	11.0329	27.783	757	1.4346	-1.0174	4.6749	1.1290	909.8	7976	.444	1.3222	1.2926	973.5	1429	.700
2500	1.3415-6	2889.7	11.1323	27.520	766	1.5081	-1.0209	5.1673	1.1262	922.3	8898	.445	1.3247	1.2954	989.2	1460	.695
2550	1.3011-6	3160.1	11.2394	27.225	776	1.5803	-1.0245	5.6417	1.1244	935.8	9679	.452	1.3273	1.2989	1005.7	1493	.690
2600	1.2609-6	3453.1	11.3532	26.902	785	1.6468	-1.0280	6.0689	1.1237	950.3	10261	.464	1.3300	1.3027	1023.1	1527	.684
2650	1.2213-6	3765.6	11.4722	26.558	794	1.7026	-1.0311	6.4179	1.1239	965.6	10607	.480	1.3327	1.3070	1041.3	1563	.677
2700	1.1826-6	4093.1	11.5947	26.201	804	1.7432	-1.0337	6.6608	1.1250	981.8	10709	.500	1.3354	1.3117	1060.1	1599	.671
2750	1.1451-6	4429.6	11.7181	25.840	813	1.7656	-1.0354	6.7776	1.1268	998.5	10582	.521	1.3382	1.3166	1079.3	1636	.665
2800	1.1092-6	4768.6	11.8403	25.485	823	1.7681	-1.0363	6.7578	1.1295	1015.8	10254	.542	1.3409	1.3216	1098.7	1673	.660
2850	1.0751-6	5103.1	11.9587	25.144	833	1.7506	-1.0362	6.6003	1.1330	1033.3	9757	.563	1.3435	1.3265	1118.1	1708	.655
2900	1.0432-6	5426.4	12.0712	24.825	843	1.7145	-1.0351	6.3135	1.1374	1051.1	9122	.583	1.3459	1.3313	1137.1	1742	.651
2950	1.0135-6	5732.6	12.1759	24.534	853	1.6622	-1.0332	5.9162	1.1430	1069.0	8388	.602	1.3483	1.3357	1155.6	1776	.648
3000	9.8610-7	6016.7	12.2714	24.275	863	1.5979	-1.0306	5.4380	1.1497	1086.9	7600	.618	1.3504	1.3398	1173.3	1807	.645

TABLE 12.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016749; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP J/G K	(GAM)S	VS M/S	COND MICRO W/CM K	PRAN	CP J/G K	GAM	VS M/S	COND MICRO W/CM K	PRAN
K	G/CM3	J/G	J/G K														
900	3.9172-5	-109.5	8.7646	28.929	399	1.0000	-1.0000	1.1526	1.3322	587.0	637	.722	1.1523	1.3323	587.1	637	.722
950	3.7110-5	-51.6	8.8273	28.929	413	1.0000	-1.0000	1.1642	1.3278	602.1	667	.721	1.1635	1.3281	602.2	667	.721
1000	3.5254-5	6.9	8.8873	28.929	428	1.0000	-1.0000	1.1751	1.3238	616.8	697	.721	1.1740	1.3242	616.9	697	.721
1050	3.3576-5	65.9	8.9448	28.929	442	1.0000	-1.0000	1.1850	1.3202	631.2	726	.721	1.1835	1.3208	631.3	725	.721
1100	3.2049-5	125.4	9.0002	28.929	455	1.0000	-1.0000	1.1948	1.3167	645.2	755	.721	1.1925	1.3176	645.4	754	.721
1150	3.0656-5	185.4	9.0535	28.929	469	1.0000	-1.0000	1.2043	1.3134	658.9	783	.721	1.2011	1.3146	659.2	781	.721
1200	2.9379-5	245.8	9.1050	28.929	482	1.0000	-1.0000	1.2138	1.3103	672.2	811	.721	1.2092	1.3118	672.6	808	.721
1250	2.8204-5	306.8	9.1547	28.929	495	1.0000	-1.0000	1.2232	1.3072	685.3	839	.721	1.2170	1.3092	685.8	835	.721
1300	2.7119-5	368.2	9.2029	28.929	507	1.0000	-1.0000	1.2326	1.3041	698.0	867	.721	1.2244	1.3067	698.7	862	.721
1350	2.6114-5	430.0	9.2496	28.929	520	1.0001	-1.0000	1.2420	1.3011	710.5	896	.721	1.2315	1.3044	711.4	888	.721
1400	2.5182-5	492.4	9.2949	28.928	532	1.0001	-1.0000	1.2517	1.2981	722.7	924	.721	1.2382	1.3023	723.9	914	.721
1450	2.4313-5	555.2	9.3390	28.928	544	1.0002	-1.0000	1.2617	1.2951	734.7	953	.721	1.2446	1.3003	736.1	939	.721
1500	2.3502-5	618.6	9.3820	28.928	556	1.0003	-1.0000	1.2722	1.2921	746.4	982	.721	1.2507	1.2984	748.2	964	.721
1550	2.2744-5	682.4	9.4238	28.928	568	1.0005	-1.0000	1.2834	1.2889	757.8	1013	.720	1.2564	1.2966	760.0	990	.721
1600	2.2033-5	746.9	9.4648	28.927	580	1.0008	-1.0000	1.2956	1.2856	768.9	1044	.719	1.2619	1.2950	771.7	1015	.721
1650	2.1364-5	812.0	9.5049	28.926	591	1.0012	-1.0000	1.3091	1.2822	779.8	1078	.718	1.2671	1.2934	783.2	1040	.721
1700	2.0735-5	877.8	9.5442	28.925	603	1.0018	-1.0000	1.3244	1.2784	790.4	1114	.716	1.2720	1.2919	794.6	1065	.720
1750	2.0141-5	944.5	9.5828	28.923	614	1.0026	-1.0001	1.3421	1.2743	800.7	1154	.714	1.2767	1.2906	805.8	1089	.720
1800	1.9580-5	1012.1	9.6209	28.921	625	1.0038	-1.0001	1.3629	1.2698	810.6	1198	.711	1.2811	1.2893	816.8	1113	.720
1850	1.9049-5	1080.9	9.6586	28.917	636	1.0055	-1.0001	1.3880	1.2647	820.2	1248	.708	1.2854	1.2882	827.8	1137	.719
1900	1.8544-5	1151.0	9.6960	28.912	647	1.0078	-1.0002	1.4185	1.2590	829.4	1307	.702	1.2893	1.2871	838.6	1161	.719
1950	1.8064-5	1222.8	9.7333	28.905	658	1.0110	-1.0003	1.4558	1.2526	838.2	1377	.695	1.2931	1.2861	849.3	1184	.719
2000	1.7607-5	1296.7	9.7707	28.895	669	1.0153	-1.0005	1.5018	1.2454	846.6	1463	.687	1.2967	1.2852	860.0	1207	.718
2050	1.7170-5	1373.2	9.8084	28.882	679	1.0210	-1.0007	1.5584	1.2375	854.6	1567	.675	1.3001	1.2844	870.6	1230	.718
2100	1.6751-5	1452.8	9.8468	28.865	690	1.0285	-1.0009	1.6281	1.2288	862.2	1697	.662	1.3033	1.2837	881.2	1252	.718
2150	1.6349-5	1536.2	9.8861	28.843	700	1.0381	-1.0013	1.7132	1.2196	869.4	1858	.646	1.3063	1.2832	891.8	1275	.718
2200	1.5961-5	1624.4	9.9266	28.814	710	1.0504	-1.0017	1.8164	1.2100	876.4	2058	.627	1.3092	1.2827	902.4	1297	.717
2250	1.5586-5	1718.2	9.9688	28.776	721	1.0658	-1.0023	1.9402	1.2003	883.3	2304	.607	1.3119	1.2824	913.1	1319	.717
2300	1.5222-5	1818.8	10.0130	28.729	731	1.0847	-1.0030	2.0867	1.1907	890.3	2605	.585	1.3145	1.2823	923.9	1341	.716
2350	1.4868-5	1927.3	10.0596	28.670	740	1.1077	-1.0040	2.2575	1.1815	897.3	2967	.563	1.3169	1.2824	934.9	1363	.715
2400	1.4521-5	2045.0	10.1092	28.597	750	1.1348	-1.0051	2.4534	1.1730	904.7	3397	.542	1.3192	1.2827	946.1	1385	.715
2450	1.4181-5	2173.0	10.1620	28.509	760	1.1665	-1.0065	2.6741	1.1654	912.5	3895	.522	1.3213	1.2832	957.6	1408	.713
2500	1.3845-5	2312.8	10.2184	28.403	769	1.2025	-1.0081	2.9182	1.1587	920.9	4460	.504	1.3234	1.2840	969.4	1431	.712
2550	1.3514-5	2465.2	10.2788	28.278	779	1.2429	-1.0100	3.1832	1.1530	929.8	5083	.488	1.3254	1.2851	981.6	1455	.710
2600	1.3186-5	2631.4	10.3433	28.133	788	1.2870	-1.0121	3.4654	1.1484	939.4	5751	.475	1.3273	1.2864	994.2	1479	.707
2650	1.2861-5	2812.0	10.4121	27.967	798	1.3343	-1.0144	3.7600	1.1446	949.6	6441	.466	1.3292	1.2881	1007.4	1505	.704
2700	1.2539-5	3007.5	10.4852	27.780	807	1.3840	-1.0170	4.0612	1.1418	960.6	7126	.460	1.3311	1.2901	1021.0	1532	.701
2750	1.2219-5	3218.1	10.5625	27.572	816	1.4347	-1.0197	4.3616	1.1398	972.2	7776	.458	1.3329	1.2924	1035.2	1561	.697
2800	1.1902-5	3443.5	10.6437	27.345	826	1.4851	-1.0225	4.6525	1.1385	984.5	8361	.459	1.3349	1.2950	1050.0	1591	.693
2850	1.1588-5	3683.0	10.7285	27.099	835	1.5332	-1.0253	4.9237	1.1380	997.5	8850	.464	1.3368	1.2979	1065.3	1622	.688
2900	1.1278-5	3935.3	10.8162	26.839	844	1.5772	-1.0279	5.1640	1.1380	1011.1	9224	.473	1.3388	1.3011	1081.1	1654	.683
2950	1.0975-5	4198.7	10.9063	26.567	854	1.6148	-1.0304	5.3619	1.1387	1025.3	9468	.484	1.3408	1.3045	1097.4	1688	.678
3000	1.0678-5	4470.6	10.9977	26.287	864	1.6443	-1.0325	5.5072	1.1399	1040.0	9577	.497	1.3428	1.3081	1114.1	1722	.673

TABLE 12.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016749; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9172-4	-109.5	8.1029	28.929	399	1.0000	-1.0000	1.1526	1.3322	587.0	637	.722	1.1523	1.3323	587.1	637	.722
950	3.7110-4	-51.6	8.1655	28.929	413	1.0000	-1.0000	1.1642	1.3278	602.1	667	.721	1.1635	1.3281	602.2	667	.721
1000	3.5254-4	6.9	8.2255	28.929	428	1.0000	-1.0000	1.1751	1.3238	616.8	697	.721	1.1740	1.3242	616.9	697	.721
1050	3.3576-4	65.9	8.2830	28.929	442	1.0000	-1.0000	1.1850	1.3202	631.2	726	.721	1.1835	1.3207	631.3	725	.721
1100	3.2050-4	125.4	8.3384	28.929	455	1.0000	-1.0000	1.1948	1.3168	645.2	755	.721	1.1925	1.3176	645.4	754	.721
1150	3.0656-4	185.4	8.3917	28.929	469	1.0000	-1.0000	1.2043	1.3135	658.9	783	.721	1.2011	1.3146	659.2	781	.721
1200	2.9379-4	245.8	8.4432	28.929	482	1.0000	-1.0000	1.2137	1.3103	672.2	811	.721	1.2092	1.3118	672.6	808	.721
1250	2.8204-4	306.8	8.4929	28.929	495	1.0000	-1.0000	1.2230	1.3072	685.3	839	.721	1.2170	1.3092	685.8	835	.721
1300	2.7119-4	368.1	8.5411	28.929	507	1.0000	-1.0000	1.2322	1.3042	698.1	867	.721	1.2244	1.3067	698.7	862	.721
1350	2.6114-4	430.0	8.5877	28.929	520	1.0000	-1.0000	1.2415	1.3013	710.6	895	.721	1.2315	1.3044	711.4	888	.721
1400	2.5182-4	492.3	8.6331	28.929	532	1.0001	-1.0000	1.2508	1.2984	722.8	923	.721	1.2382	1.3023	723.9	914	.721
1450	2.4313-4	555.1	8.6771	28.929	544	1.0001	-1.0000	1.2603	1.2955	734.8	951	.721	1.2446	1.3003	736.1	939	.721
1500	2.3503-4	618.3	8.7200	28.928	556	1.0002	-1.0000	1.2700	1.2926	746.5	980	.721	1.2507	1.2984	748.2	964	.721
1550	2.2744-4	682.1	8.7618	28.928	568	1.0002	-1.0000	1.2800	1.2897	758.0	1009	.721	1.2564	1.2966	760.0	990	.721
1600	2.2033-4	746.3	8.8026	28.928	580	1.0004	-1.0000	1.2904	1.2868	769.3	1039	.720	1.2619	1.2949	771.7	1015	.721
1650	2.1365-4	811.1	8.8425	28.928	591	1.0006	-1.0000	1.3013	1.2839	780.3	1069	.720	1.2671	1.2934	783.2	1040	.721
1700	2.0737-4	876.5	8.8815	28.927	603	1.0008	-1.0000	1.3130	1.2808	791.1	1101	.719	1.2720	1.2919	794.5	1065	.720
1750	2.0144-4	942.4	8.9197	28.926	614	1.0012	-1.0000	1.3255	1.2777	801.7	1134	.718	1.2767	1.2906	805.7	1089	.720
1800	1.9583-4	1009.0	8.9573	28.925	625	1.0017	-1.0000	1.3393	1.2744	812.0	1169	.716	1.2811	1.2893	816.7	1113	.720
1850	1.9053-4	1076.4	8.9942	28.923	636	1.0023	-1.0001	1.3545	1.2709	822.1	1205	.715	1.2854	1.2881	827.6	1137	.719
1900	1.8550-4	1144.5	9.0305	28.921	647	1.0032	-1.0001	1.3717	1.2672	832.0	1245	.713	1.2893	1.2869	838.4	1161	.719
1950	1.8073-4	1213.6	9.0664	28.919	658	1.0044	-1.0001	1.3911	1.2632	841.6	1289	.710	1.2931	1.2859	849.1	1184	.719
2000	1.7619-4	1283.7	9.1019	28.915	669	1.0060	-1.0002	1.4136	1.2589	850.9	1337	.707	1.2967	1.2849	859.6	1207	.718
2050	1.7186-4	1355.0	9.1371	28.910	679	1.0080	-1.0002	1.4395	1.2543	860.0	1390	.703	1.3001	1.2840	870.1	1230	.718
2100	1.6773-4	1427.7	9.1721	28.903	690	1.0107	-1.0003	1.4698	1.2493	868.7	1452	.698	1.3033	1.2832	880.4	1252	.718
2150	1.6378-4	1502.1	9.2071	28.895	700	1.0141	-1.0005	1.5053	1.2440	877.3	1523	.692	1.3064	1.2825	890.7	1274	.718
2200	1.6000-4	1578.3	9.2422	28.884	711	1.0183	-1.0006	1.5469	1.2382	885.5	1605	.685	1.3093	1.2818	901.0	1296	.718
2250	1.5637-4	1656.9	9.2775	28.871	721	1.0237	-1.0008	1.5956	1.2320	893.5	1701	.676	1.3120	1.2812	911.2	1318	.718
2300	1.5288-4	1738.0	9.3132	28.854	731	1.0304	-1.0011	1.6525	1.2256	901.3	1815	.666	1.3146	1.2807	921.3	1339	.718
2350	1.4952-4	1822.3	9.3494	28.832	741	1.0385	-1.0014	1.7186	1.2189	908.8	1949	.654	1.3170	1.2803	931.5	1361	.717
2400	1.4627-4	1910.1	9.3864	28.806	751	1.0483	-1.0018	1.7948	1.2121	916.3	2106	.640	1.3193	1.2800	941.7	1382	.717
2450	1.4313-4	2001.9	9.4243	28.774	761	1.0601	-1.0023	1.8821	1.2052	923.7	2290	.626	1.3215	1.2799	951.9	1403	.717
2500	1.4007-4	2098.5	9.4632	28.735	771	1.0739	-1.0029	1.9809	1.1984	931.1	2504	.610	1.3235	1.2798	962.2	1424	.716
2550	1.3711-4	2200.2	9.5036	28.689	781	1.0900	-1.0036	2.0917	1.1919	938.5	2751	.594	1.3255	1.2798	972.5	1445	.716
2600	1.3421-4	2307.8	9.5453	28.634	790	1.1084	-1.0044	2.2143	1.1858	946.2	3032	.577	1.3273	1.2800	983.0	1467	.715
2650	1.3138-4	2421.9	9.5888	28.569	800	1.1291	-1.0054	2.3483	1.1801	954.0	3350	.561	1.3291	1.2804	993.7	1489	.714
2700	1.2861-4	2542.8	9.6340	28.494	809	1.1522	-1.0065	2.4928	1.1749	962.1	3703	.545	1.3307	1.2809	1004.5	1511	.713
2750	1.2589-4	2671.3	9.6811	28.408	819	1.1776	-1.0078	2.6466	1.1704	970.6	4089	.530	1.3323	1.2815	1015.6	1533	.712
2800	1.2322-4	2807.6	9.7303	28.311	828	1.2050	-1.0092	2.8081	1.1664	979.4	4505	.516	1.3338	1.2824	1026.9	1556	.710
2850	1.2059-4	2952.2	9.7814	28.201	837	1.2343	-1.0107	2.9756	1.1631	988.6	4944	.504	1.3353	1.2834	1038.4	1579	.708
2900	1.1800-4	3105.3	9.8347	28.079	847	1.2651	-1.0124	3.1472	1.1603	998.2	5398	.494	1.3367	1.2846	1050.3	1603	.706
2950	1.1544-4	3267.0	9.8899	27.944	856	1.2972	-1.0143	3.3208	1.1581	1008.2	5859	.485	1.3382	1.2859	1062.4	1627	.704
3000	1.1292-4	3437.3	9.9472	27.797	865	1.3301	-1.0162	3.4942	1.1564	1018.7	6314	.479	1.3396	1.2875	1074.8	1653	.701

TABLE 12.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016749; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.9172-3	-109.5	7.4411	28.929	399	1.0000	-1.0000	1.1526	1.3322	587.0	637 .722	1.1523	1.3323	587.1	637 .722
950	3.7110-3	-51.6	7.5037	28.929	413	1.0000	-1.0000	1.1642	1.3278	602.1	667 .721	1.1635	1.3281	602.2	667 .721
1000	3.5255-3	6.9	7.5637	28.929	428	1.0000	-1.0000	1.1751	1.3238	616.8	697 .721	1.1740	1.3242	616.9	697 .721
1050	3.3576-3	65.9	7.6213	28.929	442	1.0000	-1.0000	1.1850	1.3202	631.2	726 .721	1.1835	1.3207	631.3	725 .721
1100	3.2050-3	125.4	7.6766	28.929	455	1.0000	-1.0000	1.1948	1.3167	645.2	755 .721	1.1925	1.3176	645.4	754 .721
1150	3.0656-3	185.4	7.7299	28.929	469	1.0000	-1.0000	1.2043	1.3135	658.9	783 .721	1.2011	1.3146	659.2	781 .721
1200	2.9379-3	245.8	7.7814	28.929	482	1.0000	-1.0000	1.2136	1.3103	672.2	811 .721	1.2092	1.3118	672.6	808 .721
1250	2.8204-3	306.8	7.8311	28.929	495	1.0000	-1.0000	1.2229	1.3072	685.3	839 .721	1.2170	1.3092	685.8	835 .721
1300	2.7119-3	368.1	7.8793	28.929	507	1.0000	-1.0000	1.2321	1.3042	698.1	867 .721	1.2244	1.3067	698.7	862 .721
1350	2.6115-3	430.0	7.9259	28.929	520	1.0000	-1.0000	1.2412	1.3013	710.6	895 .721	1.2315	1.3044	711.4	888 .721
1400	2.5182-3	492.3	7.9712	28.929	532	1.0000	-1.0000	1.2504	1.2985	722.8	923 .721	1.2382	1.3023	723.9	914 .721
1450	2.4313-3	555.0	8.0153	28.929	544	1.0000	-1.0000	1.2596	1.2957	734.8	950 .721	1.2446	1.3003	736.1	939 .721
1500	2.3503-3	618.2	8.0581	28.929	556	1.0001	-1.0000	1.2689	1.2929	746.6	979 .721	1.2507	1.2984	748.2	964 .721
1550	2.2745-3	681.9	8.0999	28.929	568	1.0001	-1.0000	1.2783	1.2901	758.1	1007 .721	1.2564	1.2966	760.0	990 .721
1600	2.2034-3	746.0	8.1406	28.929	580	1.0002	-1.0000	1.2879	1.2874	769.4	1036 .721	1.2619	1.2949	771.7	1015 .721
1650	2.1366-3	810.7	8.1804	28.928	591	1.0003	-1.0000	1.2978	1.2846	780.5	1066 .720	1.2671	1.2934	783.2	1040 .721
1700	2.0737-3	875.8	8.2193	28.928	603	1.0004	-1.0000	1.3079	1.2819	791.4	1095 .720	1.2720	1.2919	794.5	1065 .720
1750	2.0145-3	941.5	8.2574	28.928	614	1.0005	-1.0000	1.3184	1.2791	802.1	1126 .719	1.2767	1.2905	805.7	1089 .720
1800	1.9585-3	1007.7	8.2947	28.927	625	1.0008	-1.0000	1.3294	1.2763	812.6	1157 .718	1.2811	1.2892	816.7	1113 .720
1850	1.9055-3	1074.4	8.3312	28.926	636	1.0010	-1.0000	1.3409	1.2735	822.9	1189 .718	1.2854	1.2880	827.6	1137 .719
1900	1.8553-3	1141.8	8.3672	28.926	647	1.0014	-1.0000	1.3531	1.2706	833.0	1222 .717	1.2894	1.2869	838.3	1161 .719
1950	1.8076-3	1209.8	8.4025	28.924	658	1.0019	-1.0001	1.3662	1.2677	843.0	1256 .715	1.2931	1.2858	849.0	1184 .719
2000	1.7624-3	1278.4	8.4372	28.923	669	1.0025	-1.0001	1.3802	1.2646	852.7	1293 .714	1.2967	1.2848	859.5	1207 .718
2050	1.7192-3	1347.8	8.4715	28.921	679	1.0033	-1.0001	1.3955	1.2615	862.2	1330 .713	1.3001	1.2839	869.9	1230 .718
2100	1.6782-3	1418.0	8.5053	28.918	690	1.0043	-1.0001	1.4122	1.2582	871.6	1371 .711	1.3033	1.2830	880.2	1252 .718
2150	1.6389-3	1489.1	8.5388	28.915	700	1.0056	-1.0002	1.4307	1.2548	880.8	1414 .709	1.3064	1.2822	890.3	1274 .718
2200	1.6015-3	1561.1	8.5719	28.910	711	1.0072	-1.0002	1.4511	1.2513	889.8	1461 .706	1.3093	1.2815	900.4	1296 .718
2250	1.5656-3	1634.2	8.6048	28.905	721	1.0092	-1.0003	1.4739	1.2476	898.6	1512 .703	1.3120	1.2808	910.5	1318 .718
2300	1.5312-3	1708.5	8.6374	28.899	731	1.0116	-1.0004	1.4994	1.2437	907.2	1568 .699	1.3146	1.2802	920.4	1339 .718
2350	1.4982-3	1784.2	8.6700	28.890	741	1.0145	-1.0005	1.5279	1.2397	915.6	1631 .695	1.3171	1.2796	930.3	1360 .718
2400	1.4665-3	1861.4	8.7025	28.881	752	1.0180	-1.0007	1.5600	1.2355	923.9	1700 .690	1.3194	1.2791	940.1	1381 .718
2450	1.4360-3	1940.3	8.7350	28.869	762	1.0222	-1.0008	1.5959	1.2311	932.0	1778 .683	1.3216	1.2786	949.9	1402 .718
2500	1.4066-3	2021.0	8.7676	28.854	771	1.0272	-1.0010	1.6361	1.2267	940.0	1866 .676	1.3237	1.2782	959.6	1423 .718
2550	1.3782-3	2103.9	8.8005	28.837	781	1.0331	-1.0013	1.6810	1.2221	947.9	1965 .668	1.3257	1.2779	969.3	1444 .717
2600	1.3507-3	2189.2	8.8336	28.817	791	1.0399	-1.0016	1.7308	1.2175	955.7	2076 .659	1.3276	1.2777	979.0	1464 .717
2650	1.3241-3	2277.1	8.8671	28.793	801	1.0477	-1.0020	1.7858	1.2129	963.4	2201 .650	1.3294	1.2775	988.7	1485 .717
2700	1.2983-3	2367.9	8.9010	28.765	810	1.0567	-1.0024	1.8462	1.2084	971.1	2340 .639	1.3311	1.2774	998.5	1506 .716
2750	1.2733-3	2461.8	8.9355	28.732	820	1.0669	-1.0029	1.9119	1.2040	978.8	2495 .628	1.3327	1.2774	1008.2	1527 .716
2800	1.2489-3	2559.2	8.9706	28.695	829	1.0782	-1.0034	1.9828	1.1997	986.6	2667 .617	1.3342	1.2774	1018.0	1547 .715
2850	1.2252-3	2660.2	9.0063	28.652	839	1.0908	-1.0041	2.0588	1.1957	994.4	2856 .605	1.3357	1.2776	1027.9	1568 .714
2900	1.2020-3	2765.1	9.0428	28.603	848	1.1045	-1.0048	2.1394	1.1919	1002.4	3062 .592	1.3371	1.2778	1037.9	1589 .714
2950	1.1794-3	2874.2	9.0801	28.549	857	1.1194	-1.0056	2.2240	1.1884	1010.4	3285 .580	1.3384	1.2781	1047.9	1610 .713
3000	1.1572-3	2987.6	9.1182	28.488	867	1.1354	-1.0064	2.3120	1.1852	1018.7	3525 .568	1.3397	1.2785	1058.0	1631 .712

TABLE 12.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016749; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO ■ 0.2511; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	1.9586-2	-109.5	6.9785	28.929	399	1.0000	-1.0000	1.1527	1.3322	587.0	637 .722	1.1523	1.3323	587.1	637 .722
950	1.8555-2	-51.6	7.0411	28.929	413	1.0000	-1.0000	1.1642	1.3278	602.1	667 .721	1.1635	1.3281	602.2	667 .721
1000	1.7627-2	6.9	7.1011	28.929	428	1.0000	-1.0000	1.1751	1.3238	616.8	697 .721	1.1740	1.3242	616.9	697 .721
1050	1.6788-2	65.9	7.1587	28.929	442	1.0000	-1.0000	1.1851	1.3202	631.2	726 .721	1.1835	1.3207	631.3	725 .721
1100	1.6025-2	125.4	7.2141	28.929	455	1.0000	-1.0000	1.1948	1.3167	645.2	755 .721	1.1925	1.3176	645.4	754 .721
1150	1.5328-2	185.4	7.2674	28.929	469	1.0000	-1.0000	1.2043	1.3134	658.9	783 .721	1.2011	1.3146	659.2	781 .721
1200	1.4689-2	245.8	7.3188	28.929	482	1.0000	-1.0000	1.2137	1.3103	672.2	811 .721	1.2092	1.3118	672.6	808 .721
1250	1.4102-2	306.8	7.3686	28.929	495	1.0000	-1.0000	1.2229	1.3072	685.3	839 .721	1.2170	1.3092	685.8	835 .721
1300	1.3560-2	368.1	7.4167	28.929	507	1.0000	-1.0000	1.2320	1.3042	698.1	867 .721	1.2244	1.3067	698.7	862 .721
1350	1.3057-2	430.0	7.4634	28.929	520	1.0000	-1.0000	1.2411	1.3013	710.6	895 .721	1.2315	1.3044	711.4	888 .721
1400	1.2591-2	492.2	7.5087	28.929	532	1.0000	-1.0000	1.2502	1.2985	722.8	922 .721	1.2382	1.3023	723.9	914 .721
1450	1.2157-2	555.0	7.5527	28.929	544	1.0000	-1.0000	1.2593	1.2957	734.8	950 .721	1.2446	1.3003	736.1	939 .721
1500	1.1752-2	618.2	7.5956	28.929	556	1.0000	-1.0000	1.2685	1.2929	746.6	978 .721	1.2507	1.2984	748.2	964 .721
1550	1.1373-2	681.8	7.6373	28.929	568	1.0000	-1.0000	1.2777	1.2902	758.1	1007 .721	1.2564	1.2966	760.0	990 .721
1600	1.1017-2	746.0	7.6780	28.929	580	1.0001	-1.0000	1.2870	1.2875	769.5	1035 .721	1.2619	1.2949	771.7	1015 .721
1650	1.0683-2	810.5	7.7178	28.929	591	1.0001	-1.0000	1.2965	1.2849	780.6	1064 .720	1.2671	1.2934	783.2	1040 .721
1700	1.0369-2	875.6	7.7566	28.929	603	1.0002	-1.0000	1.3061	1.2822	791.5	1093 .720	1.2720	1.2919	794.5	1065 .720
1750	1.0073-2	941.2	7.7946	28.929	614	1.0003	-1.0000	1.3159	1.2796	802.3	1123 .720	1.2767	1.2905	805.7	1089 .720
1800	9.7928-3	1007.2	7.8318	28.928	625	1.0004	-1.0000	1.3259	1.2770	812.8	1153 .719	1.2811	1.2892	816.7	1113 .720
1850	9.5280-3	1073.8	7.8683	28.928	636	1.0006	-1.0000	1.3363	1.2744	823.2	1183 .718	1.2854	1.2880	827.6	1137 .719
1900	9.2771-3	1140.8	7.9041	28.927	647	1.0008	-1.0000	1.3469	1.2718	833.4	1215 .718	1.2894	1.2869	838.3	1161 .719
1950	9.0390-3	1208.5	7.9392	28.927	658	1.0011	-1.0000	1.3580	1.2691	843.4	1246 .717	1.2931	1.2858	848.9	1184 .719
2000	8.8127-3	1276.6	7.9737	28.926	669	1.0014	-1.0001	1.3695	1.2665	853.3	1279 .716	1.2967	1.2848	859.4	1207 .718
2050	8.5974-3	1345.4	8.0077	28.925	679	1.0018	-1.0001	1.3816	1.2638	863.0	1312 .715	1.3001	1.2839	869.8	1230 .718
2100	8.3923-3	1414.8	8.0411	28.923	690	1.0024	-1.0001	1.3944	1.2611	872.5	1347 .714	1.3034	1.2830	880.1	1252 .718
2150	8.1966-3	1484.9	8.0741	28.921	700	1.0031	-1.0001	1.4079	1.2584	881.9	1382 .713	1.3064	1.2821	890.2	1274 .718
2200	8.0097-3	1555.6	8.1066	28.919	711	1.0039	-1.0001	1.4224	1.2556	891.2	1420 .712	1.3093	1.2814	900.3	1296 .718
2250	7.8309-3	1627.1	8.1388	28.916	721	1.0049	-1.0002	1.4378	1.2528	900.3	1459 .711	1.3121	1.2807	910.2	1318 .718
2300	7.6598-3	1699.4	8.1705	28.913	731	1.0061	-1.0002	1.4545	1.2499	909.2	1501 .709	1.3147	1.2800	920.1	1339 .718
2350	7.4957-3	1772.6	8.2020	28.908	742	1.0076	-1.0003	1.4726	1.2469	918.0	1546 .707	1.3171	1.2794	929.9	1360 .718
2400	7.3382-3	1846.7	8.2332	28.903	752	1.0094	-1.0004	1.4922	1.2439	926.7	1593 .704	1.3195	1.2788	939.6	1381 .718
2450	7.1869-3	1921.8	8.2642	28.897	762	1.0115	-1.0004	1.5136	1.2408	935.2	1645 .701	1.3217	1.2783	949.3	1402 .718
2500	7.0414-3	1998.1	8.2950	28.890	772	1.0139	-1.0005	1.5369	1.2376	943.6	1700 .698	1.3238	1.2778	958.8	1423 .718
2550	6.9012-3	2075.6	8.3257	28.881	781	1.0168	-1.0007	1.5623	1.2344	951.9	1761 .693	1.3258	1.2774	968.4	1443 .718
2600	6.7661-3	2154.4	8.3563	28.871	791	1.0202	-1.0008	1.5901	1.2311	960.1	1827 .689	1.3277	1.2770	977.8	1464 .718
2650	6.6356-3	2234.6	8.3869	28.858	801	1.0241	-1.0010	1.6204	1.2277	968.2	1899 .684	1.3296	1.2766	987.3	1485 .717
2700	6.5095-3	2316.5	8.4175	28.844	811	1.0286	-1.0012	1.6534	1.2244	976.2	1978 .678	1.3313	1.2764	996.7	1505 .717
2750	6.3875-3	2400.0	8.4481	28.828	820	1.0337	-1.0014	1.6891	1.2210	984.1	2064 .671	1.3329	1.2761	1006.1	1526 .717
2800	6.2694-3	2485.4	8.4789	28.809	830	1.0394	-1.0017	1.7278	1.2177	992.0	2158 .664	1.3345	1.2759	1015.4	1546 .716
2850	6.1547-3	2572.8	8.5098	28.787	839	1.0459	-1.0020	1.7694	1.2143	999.8	2261 .657	1.3360	1.2758	1024.8	1566 .716
2900	6.0434-3	2662.4	8.5410	28.762	849	1.0530	-1.0024	1.8139	1.2111	1007.6	2373 .649	1.3374	1.2757	1034.1	1587 .715
2950	5.9352-3	2754.3	8.5724	28.734	858	1.0609	-1.0028	1.8613	1.2080	1015.4	2494 .640	1.3388	1.2757	1043.5	1607 .715
3000	5.8299-3	2848.6	8.6041	28.703	867	1.0695	-1.0033	1.9114	1.2050	1023.3	2625 .631	1.3401	1.2758	1052.9	1627 .714

TABLE 12C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016749; EQUIV.RATIO = 0.250; CHEM. EQUIV. RATIO = 0.2511; '
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.827-5	-921.3	7.5748	28.929	1.0536	1.787-5	29.328	132	1.000	-1.000	0.9994	1.3960	281	180	.734	200
220	1.657-5	-896.9	7.6909	28.929	1.5825	1.623-5	29.300	143	1.000	-1.000	1.0002	1.3961	295	196	.731	220
240	1.482-5	-834.0	7.9616	28.929	6.1735	1.474-5	29.026	151	1.000	-1.000	1.0130	1.3942	310	208	.735	240
						PRESSURE = 0.10 ATM										
200	1.827-4	-921.6	6.9352	28.929	1.0160	1.787-4	29.329	132	1.000	-1.000	0.9993	1.3960	281	180	.734	200
220	1.661-4	-900.9	7.0337	28.929	1.0711	1.625-4	29.326	143	1.000	-1.000	0.9990	1.3963	295	196	.730	220
240	1.519-4	-876.4	7.1398	28.929	1.5088	1.488-4	29.299	154	1.000	-1.000	1.0003	1.3961	308	211	.727	240
260	1.379-4	-827.2	7.3357	28.929	4.1228	1.365-4	29.112	162	1.000	-1.000	1.0095	1.3945	322	225	.729	260
280	1.259-4	-777.7	7.5216	28.929	1.0192	1.259-4	28.929	171	1.000	-1.000	1.0192	1.3927	335	238	.731	280
						PRESSURE = 1.00 ATM										
200	1.827-3	-921.6	6.2967	28.929	1.0122	1.787-3	29.329	132	1.000	-1.000	0.9993	1.3960	281	180	.734	200
220	1.661-3	-901.3	6.3934	28.929	1.0202	1.625-3	29.329	143	1.000	-1.000	0.9988	1.3963	295	196	.730	220
240	1.522-3	-880.6	6.4836	28.929	1.0667	1.489-3	29.326	154	1.000	-1.000	0.9990	1.3963	308	212	.726	240
260	1.403-3	-857.3	6.5764	28.929	1.3211	1.374-3	29.308	164	1.000	-1.000	1.0003	1.3959	321	227	.724	260
280	1.293-3	-817.8	6.7224	28.929	2.0762	1.272-3	29.219	173	1.000	-1.000	1.0054	1.3947	333	241	.724	280
298	1.188-3	-765.9	6.9013	28.929	3.9239	1.184-3	28.977	180	1.000	-1.000	1.0181	1.3924	345	252	.729	298
300	1.176-3	-758.4	6.9265	28.929	4.2264	1.175-3	28.937	181	1.000	-1.000	1.0202	1.3920	346	253	.730	300
320	1.102-3	-736.8	6.9961	28.929	1.0224	1.102-3	28.929	190	1.000	-1.000	1.0224	1.3910	358	266	.730	320
						PRESSURE = 10.00 ATM										
200	1.827-2	-921.6	5.6583	28.929	1.0118	1.787-2	29.329	132	1.000	-1.000	0.9993	1.3960	281	180	.734	200
220	1.661-2	-901.3	5.7549	28.929	1.0151	1.625-2	29.329	143	1.000	-1.000	0.9988	1.3963	295	196	.730	220
240	1.522-2	-881.0	5.8435	28.929	1.0227	1.489-2	29.329	154	1.000	-1.000	0.9989	1.3963	308	212	.726	240
260	1.405-2	-860.3	5.9262	28.929	1.0515	1.375-2	29.327	164	1.000	-1.000	0.9994	1.3960	321	227	.723	260
280	1.304-2	-831.0	6.0343	28.929	1.1697	1.276-2	29.318	174	1.000	-1.000	1.0008	1.3954	333	242	.721	280
298	1.222-2	-808.5	6.1124	28.929	1.3409	1.197-2	29.294	183	1.000	-1.000	1.0031	1.3946	344	255	.721	298
300	1.214-2	-805.9	6.1207	28.929	1.3675	1.190-2	29.290	184	1.000	-1.000	1.0034	1.3945	345	256	.721	300
320	1.130-2	-774.6	6.2217	28.929	1.8264	1.113-2	29.213	193	1.000	-1.000	1.0088	1.3930	356	269	.723	320
340	1.046-2	-729.7	6.3577	28.929	2.7750	1.040-2	29.029	200	1.000	-1.000	1.0197	1.3906	368	281	.727	340
360	9.793-3	-695.8	6.4550	28.929	1.0271	9.793-3	28.929	208	1.000	-1.000	1.0271	1.3885	379	293	.730	360
380	9.277-3	-675.3	6.5106	28.929	1.0300	9.277-3	28.929	217	1.000	-1.000	1.0300	1.3870	389	306	.729	380
						PRESSURE = 50.00 ATM										
200	9.117-2	-921.6	5.2121	28.929	1.0118	8.936-2	29.329	132	1.000	-1.000	0.9993	1.3960	281	180	.734	200
220	8.290-2	-901.3	5.3087	28.929	1.0146	8.123-2	29.329	143	1.000	-1.000	0.9988	1.3963	295	196	.730	220
240	7.600-2	-881.0	5.3972	28.929	1.0188	7.446-2	29.329	154	1.000	-1.000	0.9989	1.3963	308	212	.726	240
260	7.017-2	-860.6	5.4790	28.929	1.0276	6.874-2	29.329	164	1.000	-1.000	0.9993	1.3960	321	227	.723	260
280	6.516-2	-832.2	5.5838	28.929	1.0906	6.382-2	29.327	174	1.000	-1.000	1.0003	1.3955	333	242	.721	280
298	6.117-2	-812.1	5.6532	28.929	1.1252	5.993-2	29.322	183	1.000	-1.000	1.0018	1.3948	343	255	.720	298
300	6.079-2	-810.0	5.6602	28.929	1.1305	5.956-2	29.322	184	1.000	-1.000	1.0019	1.3947	344	256	.720	300
320	5.692-2	-786.6	5.7357	28.929	1.2214	5.580-2	29.306	193	1.000	-1.000	1.0044	1.3937	356	270	.720	320
340	5.341-2	-760.6	5.8145	28.929	1.4009	5.246-2	29.269	202	1.000	-1.000	1.0082	1.3923	367	283	.722	340
360	5.011-2	-729.7	5.9028	28.929	1.7196	4.941-2	29.193	211	1.000	-1.000	1.0143	1.3904	378	295	.724	360
380	4.688-2	-690.4	6.0087	28.929	2.2436	4.658-2	29.048	218	1.000	-1.000	1.0241	1.3879	389	307	.727	380
400	4.407-2	-654.6	6.1010	28.929	1.0332	4.407-2	28.929	226	1.000	-1.000	1.0332	1.3854	399	320	.729	400
420	4.197-2	-633.9	6.1515	28.929	1.0366	4.197-2	28.929	234	1.000	-1.000	1.0366	1.3836	409	333	.729	420

TABLE 13A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.033499; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 28.8936;
DRY AIR; GASEOUS COMPOSITION: CO2= .06660; H2O= .06960; N2= .75366; O2= .10109; AR= .00904

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7606-3	8.8029-2	-1590.7	7.8674	7.2048	6.5422	5.8796	5.4165	1.0279	1.3888	282.7	123	167	.7601	200
210	1.6767-3	8.3837-2	-1580.4	7.9175	7.2550	6.5924	5.9298	5.4666	1.0282	1.3886	289.7	129	175	.7569	210
220	1.6005-3	8.0026-2	-1570.1	7.9654	7.3028	6.6402	5.9776	5.5145	1.0287	1.3884	296.5	134	183	.7539	220
230	1.5309-3	7.6547-2	-1559.9	8.0111	7.3485	6.6859	6.0234	5.5602	1.0292	1.3881	303.1	140	192	.7512	230
240	1.4672-3	7.3358-2	-1549.6	8.0549	7.3924	6.7298	6.0672	5.6040	1.0299	1.3877	309.6	145	200	.7487	240
250	1.4085-3	7.0423-2	-1539.3	8.0970	7.4344	6.7718	6.1092	5.6461	1.0307	1.3874	315.9	151	208	.7466	250
260	1.3543-3	6.7715-2	-1528.9	8.1374	7.4748	6.8123	6.1497	5.6865	1.0315	1.3869	322.1	156	216	.7448	260
270	1.3041-3	6.5207-2	-1518.6	8.1764	7.5138	6.8512	6.1886	5.7255	1.0325	1.3864	328.2	161	223	.7433	270
280	1.2576-3	6.2878-2	-1508.3	8.2140	7.5514	6.8888	6.2262	5.7631	1.0335	1.3859	334.2	166	231	.7421	280
290	1.2142-3	6.0710-2	-1498.0	8.2502	7.5877	6.9251	6.2625	5.7993	1.0346	1.3853	340.0	171	239	.7412	290
298	1.1810-3	5.9050-2	-1489.5	8.2789	7.6163	6.9537	6.2912	5.8280	1.0356	1.3848	344.7	175	245	.7406	298
300	1.1737-3	5.8686-2	-1487.6	8.2853	7.6227	6.9602	6.2976	5.8344	1.0359	1.3846	345.7	176	246	.7405	300
310	1.1359-3	5.6793-2	-1477.2	8.3193	7.6567	6.9941	6.3316	5.8684	1.0372	1.3840	351.4	181	253	.7404	310
320	1.1004-3	5.5018-2	-1466.9	8.3523	7.6897	7.0271	6.3645	5.9014	1.0386	1.3833	356.9	185	260	.7404	320
330	1.0670-3	5.3351-2	-1456.5	8.3843	7.7217	7.0591	6.3965	5.9334	1.0401	1.3825	362.3	190	267	.7405	330
340	1.0356-3	5.1782-2	-1446.1	8.4153	7.7527	7.0901	6.4276	5.9644	1.0416	1.3817	367.7	195	274	.7407	340
350	1.0060-3	5.0302-2	-1435.6	8.4455	7.7830	7.1204	6.4578	5.9946	1.0432	1.3809	372.9	199	281	.7408	350
360	9.7810-4	4.8905-2	-1425.2	8.4750	7.8124	7.1498	6.4872	6.0241	1.0449	1.3801	378.1	204	287	.7405	360
370	9.5167-4	4.7583-2	-1414.7	8.5036	7.8410	7.1784	6.5158	6.0527	1.0467	1.3792	383.2	208	294	.7402	370
380	9.2662-4	4.6331-2	-1404.3	8.5316	7.8690	7.2064	6.5438	6.0806	1.0485	1.3783	388.2	213	301	.7398	380
390	9.0286-4	4.5143-2	-1393.8	8.5588	7.8962	7.2336	6.5710	6.1079	1.0504	1.3773	393.2	217	308	.7394	390
400	8.8029-4	4.4015-2	-1383.3	8.5854	7.9228	7.2602	6.5977	6.1345	1.0524	1.3763	398.0	221	315	.7389	400
410	8.5882-4	4.2941-2	-1372.7	8.6114	7.9488	7.2863	6.6237	6.1605	1.0544	1.3754	402.8	226	322	.7387	410
420	8.3837-4	4.1919-2	-1362.2	8.6369	7.9743	7.3117	6.6491	6.1860	1.0565	1.3743	407.6	230	329	.7385	420
430	8.1888-4	4.0944-2	-1351.6	8.6618	7.9992	7.3366	6.6740	6.2109	1.0586	1.3733	412.2	234	335	.7384	430
440	8.0026-4	4.0013-2	-1341.0	8.6861	8.0235	7.3609	6.6983	6.2352	1.0608	1.3723	416.8	238	342	.7382	440
450	7.8248-4	3.9124-2	-1330.4	8.7100	8.0474	7.3848	6.7222	6.2591	1.0630	1.3712	421.4	242	349	.7381	450
460	7.6547-4	3.8274-2	-1319.7	8.7334	8.0708	7.4082	6.7456	6.2825	1.0653	1.3701	425.9	246	355	.7381	460
470	7.4918-4	3.7459-2	-1309.1	8.7563	8.0937	7.4311	6.7685	6.3054	1.0676	1.3690	430.3	250	362	.7380	470
480	7.3358-4	3.6679-2	-1298.4	8.7788	8.1162	7.4536	6.7910	6.3279	1.0700	1.3679	434.7	254	368	.7380	480
490	7.1860-4	3.5930-2	-1287.7	8.8009	8.1383	7.4757	6.8131	6.3500	1.0724	1.3668	439.0	258	375	.7380	490
500	7.0423-4	3.5212-2	-1276.9	8.8226	8.1600	7.4974	6.8348	6.3717	1.0748	1.3656	443.3	262	381	.7381	500
510	6.9042-4	3.4521-2	-1266.2	8.8439	8.1813	7.5187	6.8561	6.3930	1.0773	1.3645	447.5	266	388	.7380	510
520	6.7715-4	3.3857-2	-1255.4	8.8648	8.2022	7.5396	6.8771	6.4139	1.0798	1.3633	451.7	269	394	.7379	520
530	6.6437-4	3.3219-2	-1244.6	8.8854	8.2228	7.5602	6.8977	6.4345	1.0823	1.3622	455.8	273	401	.7377	530
540	6.5207-4	3.2603-2	-1233.7	8.9057	8.2431	7.5805	6.9179	6.4548	1.0849	1.3610	459.9	277	407	.7376	540
550	6.4021-4	3.2011-2	-1222.9	8.9256	8.2630	7.6004	6.9378	6.4747	1.0875	1.3598	463.9	281	414	.7374	550
560	6.2878-4	3.1439-2	-1212.0	8.9452	8.2826	7.6200	6.9575	6.4943	1.0901	1.3586	467.9	284	420	.7373	560
570	6.1775-4	3.0887-2	-1201.1	8.9645	8.3020	7.6394	6.9768	6.5136	1.0928	1.3574	471.9	288	427	.7371	570
580	6.0710-4	3.0355-2	-1190.1	8.9836	8.3210	7.6584	6.9958	6.5327	1.0955	1.3563	475.8	292	434	.7369	580
590	5.9681-4	2.9840-2	-1179.2	9.0023	8.3397	7.6771	7.0146	6.5514	1.0982	1.3551	479.6	295	440	.7367	590

TABLE 13A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.033499; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 28.8936;
DRY AIR; GASEOUS COMPOSITION: CO2= .06660; H2O= .06960; N2= .75366; O2= .10109; AR= .00904

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8686-4	2.9343-2	-1168.2	9.0208	8.3582	7.6956	7.0330	6.5699	1.1009	1.3539	483.5	299	447	.7365	600
610	5.7724-4	2.8862-2	-1157.1	9.0390	8.3764	7.7138	7.0513	6.5881	1.1036	1.3527	487.3	302	453	.7362	610
620	5.6793-4	2.8396-2	-1146.1	9.0570	8.3944	7.7318	7.0692	6.6061	1.1063	1.3515	491.0	306	460	.7359	620
630	5.5891-4	2.7946-2	-1135.0	9.0747	8.4121	7.7495	7.0869	6.6238	1.1091	1.3504	494.8	309	467	.7356	630
640	5.5018-4	2.7509-2	-1123.9	9.0922	8.4296	7.7670	7.1044	6.6413	1.1119	1.3492	498.5	313	473	.7353	640
650	5.4172-4	2.7086-2	-1112.8	9.1095	8.4469	7.7843	7.1217	6.6586	1.1146	1.3480	502.1	316	480	.7350	650
660	5.3351-4	2.6675-2	-1101.6	9.1265	8.4639	7.8013	7.1387	6.6756	1.1174	1.3468	505.8	320	487	.7347	660
670	5.2555-4	2.6277-2	-1090.4	9.1433	8.4807	7.8181	7.1556	6.6924	1.1202	1.3457	509.4	323	493	.7343	670
680	5.1782-4	2.5891-2	-1079.2	9.1599	8.4974	7.8348	7.1722	6.7090	1.1230	1.3445	512.9	327	500	.7340	680
690	5.1031-4	2.5516-2	-1068.0	9.1764	8.5138	7.8512	7.1886	6.7255	1.1258	1.3434	516.5	330	507	.7337	690
700	5.0302-4	2.5151-2	-1056.7	9.1926	8.5300	7.8674	7.2048	6.7417	1.1286	1.3422	520.0	334	513	.7334	700
710	4.9594-4	2.4797-2	-1045.4	9.2086	8.5460	7.8834	7.2208	6.7577	1.1314	1.3411	523.4	337	520	.7331	710
720	4.8905-4	2.4453-2	-1034.1	9.2245	8.5619	7.8993	7.2367	6.7735	1.1342	1.3400	526.9	340	527	.7328	720
730	4.8235-4	2.4118-2	-1022.7	9.2401	8.5775	7.9149	7.2523	6.7892	1.1370	1.3389	530.3	344	533	.7325	730
740	4.7583-4	2.3792-2	-1011.3	9.2556	8.5930	7.9304	7.2678	6.8047	1.1397	1.3378	533.7	347	540	.7322	740
750	4.6949-4	2.3474-2	-999.9	9.2709	8.6083	7.9457	7.2831	6.8200	1.1425	1.3367	537.1	350	547	.7319	750
760	4.6331-4	2.3166-2	-988.5	9.2861	8.6235	7.9609	7.2983	6.8352	1.1453	1.3356	540.4	353	553	.7316	760
770	4.5729-4	2.2865-2	-977.0	9.3011	8.6385	7.9759	7.3133	6.8502	1.1480	1.3345	543.8	357	560	.7313	770
780	4.5143-4	2.2572-2	-965.5	9.3159	8.6533	7.9907	7.3281	6.8650	1.1508	1.3334	547.1	360	566	.7310	780
790	4.4572-4	2.2286-2	-954.0	9.3306	8.6680	8.0054	7.3428	6.8797	1.1535	1.3324	550.4	363	573	.7308	790
800	4.4015-4	2.2007-2	-942.5	9.3451	8.6825	8.0199	7.3573	6.8942	1.1562	1.3313	553.6	366	580	.7305	800
810	4.3471-4	2.1736-2	-930.9	9.3595	8.6969	8.0343	7.3717	6.9086	1.1589	1.3303	556.8	369	586	.7303	810
820	4.2941-4	2.1471-2	-919.3	9.3737	8.7111	8.0485	7.3859	6.9228	1.1616	1.3293	560.1	372	593	.7301	820
830	4.2424-4	2.1212-2	-907.6	9.3878	8.7252	8.0626	7.4000	6.9369	1.1643	1.3283	563.2	376	599	.7299	830
840	4.1919-4	2.0959-2	-896.0	9.4018	8.7392	8.0766	7.4140	6.9509	1.1670	1.3273	566.4	379	606	.7297	840
850	4.1425-4	2.0713-2	-884.3	9.4156	8.7530	8.0904	7.4278	6.9647	1.1696	1.3263	569.6	382	612	.7295	850
860	4.0944-4	2.0472-2	-872.6	9.4293	8.7667	8.1041	7.4415	6.9784	1.1722	1.3254	572.7	385	619	.7293	860
870	4.0473-4	2.0237-2	-860.9	9.4429	8.7803	8.1177	7.4551	6.9920	1.1748	1.3244	575.8	388	625	.7291	870
880	4.0013-4	2.0007-2	-849.1	9.4563	8.7937	8.1311	7.4685	7.0054	1.1774	1.3235	578.9	391	632	.7290	880
890	3.9564-4	1.9782-2	-837.3	9.4696	8.8070	8.1444	7.4818	7.0187	1.1799	1.3226	582.0	394	638	.7288	890
900	3.9124-4	1.9562-2	-825.5	9.4828	8.8202	8.1576	7.4950	7.0319	1.1824	1.3216	585.1	397	644	.7286	900
910	3.8694-4	1.9347-2	-813.7	9.4959	8.8333	8.1707	7.5081	7.0450	1.1849	1.3208	588.1	400	651	.7285	910
920	3.8274-4	1.9137-2	-801.8	9.5089	8.8463	8.1837	7.5211	7.0579	1.1874	1.3199	591.1	403	657	.7283	920
930	3.7862-4	1.8931-2	-789.9	9.5217	8.8591	8.1965	7.5339	7.0708	1.1898	1.3190	594.1	406	664	.7282	930
940	3.7459-4	1.8730-2	-778.0	9.5344	8.8719	8.2093	7.5467	7.0835	1.1922	1.3182	597.1	409	670	.7280	940
950	3.7065-4	1.8532-2	-766.1	9.5471	8.8845	8.2219	7.5593	7.0962	1.1946	1.3173	600.1	412	676	.7279	950
960	3.6679-4	1.8339-2	-754.1	9.5596	8.8970	8.2344	7.5718	7.1087	1.1969	1.3165	603.1	415	682	.7277	960
970	3.6301-4	1.8150-2	-742.1	9.5720	8.9094	8.2468	7.5842	7.1211	1.1993	1.3157	606.0	418	689	.7276	970
980	3.5930-4	1.7965-2	-730.1	9.5843	8.9217	8.2591	7.5965	7.1334	1.2015	1.3149	608.9	421	695	.7275	980
990	3.5567-4	1.7784-2	-718.1	9.5965	8.9339	8.2713	7.6088	7.1456	1.2038	1.3141	611.9	424	701	.7273	990

TABLE 13A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.033499; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5008; MW = 28.8936;
DRY AIR; GASEOUS COMPOSITION: CO2= .06660; H2O= .06960; N2= .75366; O2= .10109; AR= .00904

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5212-4	1.7606-2	-706.1	9.6086	8.9460	8.2835	7.6209	7.1577	1.2060	1.3134	614.8	427	707	.7272	1000
1050	3.3535-4	1.6767-2	-645.5	9.6677	9.0051	8.3426	7.6800	7.2168	1.2164	1.3099	629.1	441	738	.7268	1050
1100	3.2011-4	1.6005-2	-584.4	9.7245	9.0620	8.3994	7.7368	7.2736	1.2263	1.3066	643.1	455	767	.7265	1100
1150	3.0619-4	1.5309-2	-522.9	9.7793	9.1167	8.4541	7.7915	7.3284	1.2357	1.3036	656.8	468	797	.7263	1150
1200	2.9343-4	1.4672-2	-460.9	9.8320	9.1695	8.5069	7.8443	7.3811	1.2447	1.3007	670.2	482	826	.7261	1200
1250	2.8169-4	1.4085-2	-398.4	9.8830	9.2204	8.5578	7.8953	7.4321	1.2532	1.2981	683.3	495	854	.7260	1250
1300	2.7086-4	1.3543-2	-335.6	9.9323	9.2698	8.6072	7.9446	7.4814	1.2613	1.2956	696.2	508	882	.7258	1300
1350	2.6083-4	1.3041-2	-272.3	9.9801	9.3175	8.6549	7.9923	7.5292	1.2691	1.2932	708.8	520	910	.7257	1350
1400	2.5151-4	1.2576-2	-208.7	10.0264	9.3638	8.7012	8.0386	7.5755	1.2765	1.2910	721.2	533	938	.7255	1400
1450	2.4284-4	1.2142-2	-144.7	10.0713	9.4087	8.7461	8.0835	7.6204	1.2835	1.2890	733.4	545	965	.7254	1450
1500	2.3474-4	1.1737-2	-80.3	10.1149	9.4523	8.7897	8.1271	7.6640	1.2901	1.2871	745.4	558	992	.7252	1500
1550	2.2717-4	1.1359-2	-15.6	10.1573	9.4947	8.8321	8.1696	7.7064	1.2964	1.2853	757.1	570	1019	.7247	1550
1600	2.2007-4	1.1004-2	49.3	10.1986	9.5360	8.8734	8.2108	7.7477	1.3024	1.2836	768.8	582	1046	.7243	1600
1650	2.1340-4	1.0670-2	114.6	10.2388	9.5762	8.9136	8.2510	7.7878	1.3081	1.2820	780.2	593	1072	.7238	1650
1700	2.0713-4	1.0356-2	180.1	10.2779	9.6153	8.9527	8.2901	7.8270	1.3135	1.2805	791.5	605	1099	.7234	1700
1750	2.0121-4	1.0060-2	245.9	10.3160	9.6534	8.9909	8.3283	7.8651	1.3187	1.2791	802.6	617	1125	.7229	1750
1800	1.9562-4	9.7810-3	312.0	10.3533	9.6907	9.0281	8.3655	7.9023	1.3235	1.2778	813.6	628	1150	.7224	1800
1850	1.9033-4	9.5167-3	378.3	10.3896	9.7270	9.0644	8.4018	7.9387	1.3281	1.2766	824.4	639	1176	.7219	1850
1900	1.8532-4	9.2662-3	444.8	10.4251	9.7625	9.0999	8.4373	7.9741	1.3325	1.2754	835.1	650	1201	.7214	1900
1950	1.8057-4	9.0286-3	511.5	10.4597	9.7971	9.1345	8.4719	8.0088	1.3366	1.2744	845.6	661	1226	.7209	1950
2000	1.7606-4	8.8029-3	578.5	10.4936	9.8310	9.1684	8.5058	8.0427	1.3406	1.2733	856.1	672	1251	.7205	2000
2050	1.7176-4	8.5882-3	645.6	10.5268	9.8642	9.2016	8.5390	8.0759	1.3443	1.2724	866.4	683	1275	.7201	2050
2100	1.6767-4	8.3837-3	712.9	10.5592	9.8966	9.2340	8.5714	8.1083	1.3478	1.2715	876.5	694	1299	.7198	2100
2150	1.6378-4	8.1888-3	780.4	10.5910	9.9284	9.2658	8.6032	8.1400	1.3512	1.2706	886.6	705	1323	.7195	2150
2200	1.6005-4	8.0027-3	848.0	10.6220	9.9595	9.2969	8.6343	8.1711	1.3544	1.2698	896.6	715	1347	.7192	2200
2250	1.5650-4	7.8248-3	915.8	10.6525	9.9899	9.3273	8.6647	8.2016	1.3574	1.2690	906.4	726	1370	.7189	2250
2300	1.5309-4	7.6547-3	983.7	10.6824	10.0198	9.3572	8.6946	8.2315	1.3602	1.2683	916.2	736	1393	.7186	2300
2350	1.4984-4	7.4918-3	1051.8	10.7117	10.0491	9.3865	8.7239	8.2608	1.3630	1.2676	925.9	746	1416	.7183	2350
2400	1.4672-4	7.3358-3	1120.0	10.7404	10.0778	9.4152	8.7526	8.2895	1.3656	1.2670	935.4	756	1439	.7180	2400
2450	1.4372-4	7.1861-3	1188.4	10.7686	10.1060	9.4434	8.7808	8.3177	1.3680	1.2664	944.9	767	1461	.7177	2450
2500	1.4085-4	7.0423-3	1256.8	10.7962	10.1336	9.4711	8.8085	8.3453	1.3704	1.2658	954.3	777	1484	.7174	2500
2550	1.3808-4	6.9042-3	1325.4	10.8234	10.1608	9.4982	8.8356	8.3725	1.3726	1.2652	963.5	787	1506	.7169	2550
2600	1.3543-4	6.7715-3	1394.1	10.8501	10.1875	9.5249	8.8623	8.3992	1.3748	1.2647	972.7	796	1529	.7164	2600
2650	1.3287-4	6.6437-3	1462.9	10.8763	10.2137	9.5511	8.8885	8.4254	1.3768	1.2642	981.9	806	1551	.7159	2650
2700	1.3041-4	6.5207-3	1531.8	10.9020	10.2394	9.5768	8.9143	8.4511	1.3788	1.2637	990.9	816	1573	.7154	2700
2750	1.2804-4	6.4021-3	1600.8	10.9273	10.2648	9.6022	8.9396	8.4764	1.3807	1.2633	999.8	826	1595	.7149	2750
2800	1.2576-4	6.2878-3	1669.8	10.9522	10.2897	9.6271	8.9645	8.5013	1.3825	1.2628	1008.7	835	1616	.7145	2800
2850	1.2355-4	6.1775-3	1739.0	10.9767	10.3141	9.6515	8.9890	8.5258	1.3843	1.2624	1017.5	845	1638	.7140	2850
2900	1.2142-4	6.0710-3	1808.3	11.0008	10.3382	9.6756	9.0130	8.5499	1.3860	1.2620	1026.2	854	1660	.7135	2900
2950	1.1936-4	5.9681-3	1877.6	11.0245	10.3619	9.6993	9.0368	8.5736	1.3877	1.2616	1034.9	864	1681	.7131	2950
3000	1.1737-4	5.8686-3	1947.0	11.0479	10.3853	9.7227	9.0601	8.5970	1.3893	1.2612	1043.5	873	1702	.7126	3000

TABLE 13.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.033499; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9124-6	-825.5	9.4829	28.894	397	1.0000	-1.0000	1.1827	1.3215	585.0	645	.729	1.1824	1.3216	585.1	644	.729
950	3.7065-6	-766.0	9.5471	28.894	412	1.0000	-1.0000	1.1951	1.3171	600.1	676	.728	1.1946	1.3173	600.1	676	.728
1000	3.5212-6	-706.0	9.6087	28.894	427	1.0000	-1.0000	1.2068	1.3131	614.7	708	.727	1.2060	1.3134	614.8	707	.727
1050	3.3535-6	-645.4	9.6679	28.894	441	1.0000	-1.0000	1.2177	1.3095	629.0	738	.727	1.2164	1.3099	629.1	738	.727
1100	3.2011-6	-584.2	9.7248	28.894	455	1.0000	-1.0000	1.2282	1.3060	643.0	769	.727	1.2263	1.3066	643.1	767	.726
1150	3.0619-6	-522.6	9.7796	28.894	468	1.0000	-1.0000	1.2385	1.3027	656.6	798	.726	1.2357	1.3036	656.8	797	.726
1200	2.9343-6	-460.4	9.8325	28.894	482	1.0000	-1.0000	1.2487	1.2995	669.9	828	.726	1.2447	1.3007	670.2	826	.726
1250	2.8169-6	-397.7	9.8837	28.893	495	1.0001	-1.0000	1.2588	1.2964	682.9	858	.726	1.2532	1.2981	683.3	854	.726
1300	2.7086-6	-334.5	9.9332	28.893	508	1.0001	-1.0000	1.2690	1.2933	695.6	888	.726	1.2613	1.2956	696.2	882	.726
1350	2.6082-6	-270.8	9.9813	28.893	520	1.0002	-1.0000	1.2795	1.2903	708.0	918	.725	1.2691	1.2932	708.8	910	.726
1400	2.5151-6	-206.5	10.0281	28.893	533	1.0003	-1.0000	1.2905	1.2872	720.1	949	.725	1.2765	1.2911	721.2	938	.726
1450	2.4283-6	-141.7	10.0736	28.893	545	1.0005	-1.0000	1.3025	1.2840	732.0	981	.724	1.2835	1.2890	733.4	965	.725
1500	2.3473-6	-76.3	10.1179	28.892	558	1.0009	-1.0000	1.3158	1.2805	743.5	1015	.723	1.2901	1.2871	745.4	992	.725
1550	2.2715-6	-10.1	10.1613	28.891	570	1.0014	-1.0000	1.3313	1.2767	754.7	1051	.721	1.2964	1.2853	757.2	1019	.725
1600	2.2004-6	56.9	10.2039	28.889	582	1.0023	-1.0001	1.3501	1.2724	765.5	1092	.719	1.3024	1.2837	768.8	1046	.724
1650	2.1335-6	125.0	10.2458	28.887	593	1.0036	-1.0001	1.3735	1.2674	775.8	1140	.715	1.3081	1.2821	780.3	1072	.724
1700	2.0705-6	194.4	10.2872	28.883	605	1.0056	-1.0001	1.4036	1.2614	785.7	1196	.710	1.3135	1.2807	791.7	1099	.723
1750	2.0109-6	265.5	10.3284	28.877	616	1.0085	-1.0002	1.4432	1.2542	795.0	1267	.702	1.3186	1.2793	802.9	1125	.723
1800	1.9545-6	338.9	10.3698	28.868	628	1.0130	-1.0003	1.4958	1.2457	803.6	1358	.691	1.3235	1.2781	814.0	1151	.722
1850	1.9008-6	415.4	10.4117	28.856	639	1.0194	-1.0005	1.5660	1.2356	811.6	1479	.677	1.3280	1.2771	825.1	1176	.722
1900	1.8497-6	495.9	10.4546	28.838	650	1.0285	-1.0008	1.6595	1.2239	818.8	1640	.658	1.3323	1.2762	836.1	1202	.721
1950	1.8006-6	581.8	10.4993	28.812	661	1.0412	-1.0012	1.7829	1.2110	825.5	1858	.634	1.3364	1.2754	847.2	1227	.720
2000	1.7534-6	674.8	10.5463	28.776	672	1.0587	-1.0018	1.9436	1.1973	831.8	2150	.607	1.3402	1.2748	858.3	1252	.719
2050	1.7077-6	776.9	10.5968	28.726	682	1.0819	-1.0026	2.1491	1.1835	838.0	2538	.578	1.3438	1.2745	869.6	1277	.718
2100	1.6632-6	890.6	10.6515	28.660	693	1.1122	-1.0037	2.4063	1.1702	844.4	3047	.547	1.3471	1.2745	881.2	1302	.717
2150	1.6195-6	1018.5	10.7117	28.572	703	1.1504	-1.0051	2.7200	1.1581	851.2	3698	.517	1.3502	1.2747	893.1	1327	.715
2200	1.5764-6	1163.6	10.7784	28.458	713	1.1973	-1.0068	3.0923	1.1476	858.8	4509	.489	1.3531	1.2754	905.4	1353	.713
2250	1.5336-6	1328.7	10.8526	28.315	722	1.2531	-1.0090	3.5220	1.1388	867.4	5491	.463	1.3558	1.2765	918.3	1379	.710
2300	1.4909-6	1516.7	10.9352	28.139	732	1.3178	-1.0117	4.0047	1.1318	877.0	6639	.441	1.3583	1.2780	932.0	1407	.706
2350	1.4482-6	1729.9	11.0269	27.926	741	1.3905	-1.0148	4.5331	1.1264	887.8	7931	.423	1.3607	1.2801	946.4	1436	.702
2400	1.4052-6	1970.6	11.1282	27.674	750	1.4702	-1.0183	5.0977	1.1225	899.6	9320	.410	1.3631	1.2827	961.7	1468	.696
2450	1.3621-6	2240.1	11.2393	27.383	759	1.5549	-1.0222	5.6850	1.1197	912.7	10738	.402	1.3656	1.2859	978.1	1503	.689
2500	1.3188-6	2539.1	11.3601	27.054	767	1.6418	-1.0264	6.2753	1.1181	926.8	12086	.398	1.3681	1.2897	995.4	1540	.681
2550	1.2756-6	2867.2	11.4901	26.690	776	1.7263	-1.0307	6.8403	1.1173	942.1	13256	.400	1.3707	1.2941	1013.9	1582	.672
2600	1.2326-6	3222.1	11.6279	26.297	784	1.8026	-1.0348	7.3410	1.1175	958.5	14131	.407	1.3735	1.2990	1033.4	1627	.662
2650	1.1902-6	3599.4	11.7716	25.882	793	1.8636	-1.0384	7.7310	1.1184	975.8	14619	.419	1.3765	1.3044	1053.8	1674	.652
2700	1.1490-6	3992.6	11.9186	25.457	802	1.9025	-1.0411	7.9646	1.1202	993.9	14671	.435	1.3795	1.3102	1074.9	1723	.642
2750	1.1094-6	4392.7	12.0654	25.035	811	1.9144	-1.0426	8.0084	1.1228	1012.6	14293	.454	1.3827	1.3161	1096.4	1773	.632
2800	1.0719-6	4790.1	12.2086	24.629	820	1.8978	-1.0428	7.8519	1.1262	1031.8	13547	.475	1.3857	1.3221	1117.9	1822	.623
2850	1.0369-6	5174.8	12.3448	24.249	829	1.8548	-1.0416	7.5105	1.1305	1051.1	12534	.497	1.3887	1.3278	1139.1	1869	.616
2900	1.0045-6	5538.6	12.4714	23.904	838	1.7909	-1.0393	7.0208	1.1358	1070.4	11364	.518	1.3916	1.3333	1159.7	1914	.609
2950	9.7485-7	5875.2	12.5865	23.598	848	1.7125	-1.0361	6.4302	1.1423	1089.6	10139	.538	1.3942	1.3382	1179.4	1957	.604
3000	9.4787-7	6180.8	12.6892	23.334	858	1.6266	-1.0324	5.7890	1.1500	1108.7	8939	.555	1.3966	1.3425	1198.0	1996	.600

TABLE 13.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.033499; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9124-5	-825.5	8.8203	28.894	397	1.0000	-1.0000	1.1827	1.3215	585.0	645	.729	1.1824	1.3216	585.1	644	.729
950	3.7065-5	-766.0	8.8845	28.894	412	1.0000	-1.0000	1.1951	1.3171	600.1	676	.728	1.1946	1.3173	600.1	676	.728
1000	3.5212-5	-706.0	8.9461	28.894	427	1.0000	-1.0000	1.2068	1.3131	614.7	708	.727	1.2060	1.3134	614.8	707	.727
1050	3.3535-5	-645.4	9.0053	28.894	441	1.0000	-1.0000	1.2176	1.3095	629.0	738	.727	1.2164	1.3099	629.1	738	.727
1100	3.2011-5	-584.2	9.0622	28.894	455	1.0000	-1.0000	1.2281	1.3060	643.0	768	.727	1.2263	1.3066	643.1	767	.726
1150	3.0619-5	-522.6	9.1170	28.894	468	1.0000	-1.0000	1.2384	1.3027	656.6	798	.726	1.2357	1.3036	656.8	797	.726
1200	2.9343-5	-460.4	9.1699	28.894	482	1.0000	-1.0000	1.2484	1.2996	669.9	828	.726	1.2447	1.3007	670.2	826	.726
1250	2.8169-5	-397.7	9.2211	28.894	495	1.0000	-1.0000	1.2583	1.2965	682.9	858	.726	1.2532	1.2981	683.3	854	.726
1300	2.7086-5	-334.6	9.2706	28.893	508	1.0001	-1.0000	1.2682	1.2935	695.6	887	.726	1.2613	1.2956	696.2	882	.726
1350	2.6083-5	-270.9	9.3187	28.893	520	1.0001	-1.0000	1.2781	1.2906	708.1	917	.726	1.2691	1.2932	708.8	910	.726
1400	2.5151-5	-206.7	9.3653	28.893	533	1.0002	-1.0000	1.2882	1.2877	720.3	947	.725	1.2765	1.2911	721.2	938	.726
1450	2.4283-5	-142.1	9.4107	28.893	545	1.0003	-1.0000	1.2986	1.2848	732.2	977	.725	1.2835	1.2890	733.4	965	.725
1500	2.3474-5	-76.9	9.4549	28.893	558	1.0004	-1.0000	1.3096	1.2819	743.9	1008	.724	1.2901	1.2871	745.4	992	.725
1550	2.2716-5	-11.1	9.4980	28.892	570	1.0006	-1.0000	1.3214	1.2788	755.3	1041	.723	1.2964	1.2853	757.2	1019	.725
1600	2.2006-5	55.3	9.5402	28.891	582	1.0010	-1.0000	1.3344	1.2756	766.4	1075	.722	1.3024	1.2836	768.8	1046	.724
1650	2.1338-5	122.4	9.5815	28.890	593	1.0015	-1.0000	1.3491	1.2722	777.2	1111	.721	1.3081	1.2821	780.3	1072	.724
1700	2.0709-5	190.2	9.6220	28.889	605	1.0023	-1.0001	1.3662	1.2683	787.8	1151	.718	1.3135	1.2806	791.6	1099	.723
1750	2.0116-5	259.1	9.6619	28.886	617	1.0034	-1.0001	1.3866	1.2641	798.0	1195	.716	1.3186	1.2792	802.7	1125	.723
1800	1.9555-5	329.0	9.7013	28.883	628	1.0050	-1.0001	1.4114	1.2593	807.8	1245	.712	1.3235	1.2780	813.7	1151	.722
1850	1.9023-5	400.3	9.7404	28.878	639	1.0073	-1.0002	1.4421	1.2537	817.2	1305	.707	1.3281	1.2768	824.7	1176	.722
1900	1.8518-5	473.3	9.7793	28.871	650	1.0105	-1.0003	1.4806	1.2474	826.2	1376	.700	1.3324	1.2757	835.5	1201	.721
1950	1.8037-5	548.5	9.8184	28.862	661	1.0149	-1.0004	1.5290	1.2401	834.7	1464	.691	1.3365	1.2748	846.2	1226	.721
2000	1.7579-5	626.4	9.8578	28.849	672	1.0209	-1.0006	1.5901	1.2320	842.7	1574	.679	1.3404	1.2739	856.9	1251	.720
2050	1.7139-5	707.8	9.8980	28.831	683	1.0289	-1.0009	1.6669	1.2229	850.3	1712	.665	1.3440	1.2732	867.6	1276	.720
2100	1.6718-5	793.4	9.9393	28.808	694	1.0394	-1.0013	1.7627	1.2131	857.5	1886	.648	1.3475	1.2726	878.2	1300	.719
2150	1.6311-5	884.4	9.9821	28.777	704	1.0531	-1.0017	1.8809	1.2028	864.4	2107	.629	1.3507	1.2721	889.0	1324	.718
2200	1.5918-5	982.0	10.0269	28.736	714	1.0704	-1.0024	2.0249	1.1924	871.2	2384	.607	1.3537	1.2718	899.8	1348	.717
2250	1.5536-5	1087.4	10.0743	28.684	725	1.0919	-1.0032	2.1971	1.1822	878.1	2727	.584	1.3565	1.2718	910.7	1372	.717
2300	1.5163-5	1202.2	10.1248	28.618	735	1.1180	-1.0042	2.3992	1.1726	885.2	3148	.560	1.3591	1.2719	921.9	1396	.715
2350	1.4798-5	1327.8	10.1788	28.536	744	1.1491	-1.0054	2.6315	1.1638	892.7	3654	.536	1.3615	1.2723	933.3	1420	.714
2400	1.4439-5	1465.8	10.2369	28.436	754	1.1851	-1.0070	2.8927	1.1561	900.7	4251	.513	1.3637	1.2729	945.1	1444	.712
2450	1.4085-5	1617.5	10.2994	28.316	764	1.2260	-1.0087	3.1801	1.1495	909.4	4941	.491	1.3658	1.2739	957.3	1469	.710
2500	1.3734-5	1784.2	10.3668	28.175	773	1.2715	-1.0107	3.4901	1.1441	918.7	5721	.471	1.3677	1.2751	969.9	1495	.707
2550	1.3386-5	1966.8	10.4391	28.010	782	1.3210	-1.0130	3.8183	1.1398	928.8	6582	.454	1.3695	1.2767	983.0	1522	.704
2600	1.3041-5	2166.3	10.5165	27.822	791	1.3741	-1.0156	4.1605	1.1364	939.7	7507	.438	1.3713	1.2786	996.7	1551	.699
2650	1.2697-5	2383.0	10.5991	27.610	800	1.4301	-1.0184	4.5116	1.1339	951.2	8471	.426	1.3731	1.2809	1011.0	1581	.695
2700	1.2355-5	2617.5	10.6867	27.374	809	1.4880	-1.0214	4.8662	1.1322	963.6	9441	.417	1.3748	1.2836	1026.0	1613	.689
2750	1.2016-5	2869.6	10.7793	27.116	817	1.5466	-1.0246	5.2171	1.1312	976.6	10376	.411	1.3767	1.2866	1041.6	1648	.683
2800	1.1680-5	3139.0	10.8763	26.836	826	1.6042	-1.0279	5.5546	1.1308	990.4	11230	.409	1.3785	1.2899	1057.8	1684	.676
2850	1.1347-5	3424.6	10.9774	26.537	835	1.6588	-1.0312	5.8662	1.1309	1004.9	11952	.410	1.3805	1.2936	1074.7	1723	.669
2900	1.1020-5	3724.9	11.0819	26.224	844	1.7075	-1.0343	6.1365	1.1317	1020.1	12500	.414	1.3826	1.2976	1092.3	1765	.661
2950	1.0699-5	4037.3	11.1887	25.899	853	1.7475	-1.0371	6.3489	1.1330	1035.8	12838	.422	1.3847	1.3018	1110.3	1808	.653
3000	1.0387-5	4358.6	11.2967	25.569	862	1.7761	-1.0393	6.4874	1.1348	1052.1	12946	.432	1.3870	1.3062	1128.8	1853	.645

TABLE 13.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.033499; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9124-4	-825.5	8.1577	28.894	397	1.0000	-1.0000	1.1827	1.3215	585.0	645	.729	1.1824	1.3216	585.1	644	.729
950	3.7065-4	-766.0	8.2219	28.894	412	1.0000	-1.0000	1.1951	1.3171	600.1	676	.728	1.1946	1.3173	600.1	676	.728
1000	3.5212-4	-706.0	8.2835	28.894	427	1.0000	-1.0000	1.2068	1.3131	614.7	708	.727	1.2060	1.3134	614.8	707	.727
1050	3.3535-4	-645.4	8.3427	28.894	441	1.0000	-1.0000	1.2176	1.3095	629.0	738	.727	1.2164	1.3099	629.1	738	.727
1100	3.2011-4	-584.2	8.3996	28.894	455	1.0000	-1.0000	1.2281	1.3060	643.0	768	.727	1.2263	1.3066	643.1	767	.726
1150	3.0619-4	-522.6	8.4544	28.894	468	1.0000	-1.0000	1.2383	1.3027	656.6	798	.726	1.2357	1.3036	656.8	797	.726
1200	2.9343-4	-460.4	8.5073	28.894	482	1.0000	-1.0000	1.2483	1.2996	669.9	828	.726	1.2447	1.3007	670.2	826	.726
1250	2.8169-4	-397.7	8.5585	28.894	495	1.0000	-1.0000	1.2581	1.2966	682.9	857	.726	1.2532	1.2981	683.3	854	.726
1300	2.7086-4	-334.6	8.6080	28.894	508	1.0000	-1.0000	1.2678	1.2936	695.7	887	.726	1.2613	1.2956	696.2	882	.726
1350	2.6083-4	-271.0	8.6560	28.894	520	1.0000	-1.0000	1.2774	1.2908	708.1	916	.726	1.2691	1.2932	708.8	910	.726
1400	2.5151-4	-206.8	8.7026	28.893	533	1.0001	-1.0000	1.2871	1.2880	720.3	946	.725	1.2765	1.2911	721.2	938	.726
1450	2.4284-4	-142.2	8.7480	28.893	545	1.0001	-1.0000	1.2968	1.2853	732.3	975	.725	1.2835	1.2890	733.4	965	.725
1500	2.3474-4	-77.2	8.7921	28.893	558	1.0002	-1.0000	1.3067	1.2825	744.0	1005	.725	1.2901	1.2871	745.4	992	.725
1550	2.2717-4	-11.6	8.8351	28.893	570	1.0003	-1.0000	1.3170	1.2798	755.5	1036	.724	1.2964	1.2853	757.2	1019	.725
1600	2.2007-4	54.5	8.8771	28.893	582	1.0005	-1.0000	1.3277	1.2770	766.8	1067	.723	1.3024	1.2836	768.8	1046	.724
1650	2.1339-4	121.2	8.9181	28.892	593	1.0007	-1.0000	1.3390	1.2742	777.8	1100	.723	1.3081	1.2820	780.2	1072	.724
1700	2.0711-4	188.5	8.9583	28.891	605	1.0010	-1.0000	1.3513	1.2713	788.6	1133	.721	1.3135	1.2806	791.5	1099	.723
1750	2.0119-4	256.4	8.9976	28.890	617	1.0015	-1.0000	1.3647	1.2682	799.2	1169	.720	1.3186	1.2792	802.6	1125	.723
1800	1.9559-4	325.0	9.0363	28.889	628	1.0022	-1.0001	1.3797	1.2649	809.5	1206	.718	1.3235	1.2779	813.6	1150	.722
1850	1.9029-4	394.4	9.0743	28.887	639	1.0030	-1.0001	1.3968	1.2614	819.6	1247	.716	1.3281	1.2767	824.5	1176	.722
1900	1.8526-4	464.7	9.1118	28.884	650	1.0042	-1.0001	1.4165	1.2576	829.3	1291	.714	1.3325	1.2756	835.2	1201	.721
1950	1.8049-4	536.1	9.1489	28.880	661	1.0059	-1.0002	1.4396	1.2534	838.8	1341	.710	1.3366	1.2745	845.9	1226	.721
2000	1.7595-4	608.7	9.1857	28.875	672	1.0080	-1.0002	1.4669	1.2488	848.0	1397	.706	1.3405	1.2736	856.4	1251	.720
2050	1.7161-4	682.9	9.2223	28.868	683	1.0109	-1.0003	1.4996	1.2437	856.9	1462	.701	1.3442	1.2727	866.8	1275	.720
2100	1.6748-4	758.8	9.2589	28.860	694	1.0146	-1.0005	1.5386	1.2381	865.5	1537	.694	1.3476	1.2719	877.2	1300	.720
2150	1.6352-4	836.8	9.2956	28.848	705	1.0194	-1.0006	1.5855	1.2320	873.7	1627	.687	1.3509	1.2712	887.5	1323	.719
2200	1.5972-4	917.5	9.3327	28.833	715	1.0255	-1.0008	1.6416	1.2253	881.7	1734	.677	1.3540	1.2706	897.8	1347	.719
2250	1.5607-4	1001.2	9.3703	28.814	725	1.0332	-1.0011	1.7084	1.2183	889.4	1862	.666	1.3569	1.2701	908.1	1371	.718
2300	1.5255-4	1088.5	9.4087	28.791	736	1.0428	-1.0015	1.7874	1.2109	896.8	2014	.653	1.3597	1.2697	918.3	1394	.718
2350	1.4915-4	1180.2	9.4481	28.761	746	1.0544	-1.0019	1.8800	1.2034	904.2	2197	.638	1.3622	1.2694	928.6	1417	.717
2400	1.4585-4	1276.8	9.4888	28.724	756	1.0685	-1.0025	1.9871	1.1959	911.5	2414	.622	1.3646	1.2692	939.0	1440	.716
2450	1.4265-4	1379.1	9.5310	28.678	766	1.0851	-1.0032	2.1094	1.1885	918.8	2669	.605	1.3668	1.2692	949.5	1463	.715
2500	1.3953-4	1488.0	9.5750	28.624	776	1.1044	-1.0040	2.2469	1.1816	926.3	2966	.587	1.3689	1.2694	960.1	1486	.714
2550	1.3648-4	1604.1	9.6210	28.558	785	1.1264	-1.0050	2.3991	1.1751	934.0	3310	.569	1.3708	1.2697	970.9	1509	.713
2600	1.3350-4	1728.1	9.6691	28.482	795	1.1512	-1.0061	2.5647	1.1692	942.0	3700	.551	1.3726	1.2701	981.8	1533	.712
2650	1.3057-4	1860.7	9.7196	28.393	804	1.1785	-1.0074	2.7418	1.1641	950.5	4138	.533	1.3742	1.2708	993.1	1557	.710
2700	1.2769-4	2002.4	9.7726	28.290	813	1.2081	-1.0088	2.9283	1.1597	959.3	4623	.515	1.3758	1.2717	1004.5	1581	.708
2750	1.2486-4	2153.7	9.8281	28.174	822	1.2398	-1.0104	3.1219	1.1560	968.6	5151	.498	1.3772	1.2727	1016.3	1605	.706
2800	1.2206-4	2314.7	9.8861	28.045	832	1.2732	-1.0121	3.3203	1.1529	978.3	5719	.483	1.3786	1.2740	1028.4	1631	.703
2850	1.1930-4	2485.7	9.9467	27.901	841	1.3081	-1.0140	3.5214	1.1505	988.5	6320	.468	1.3799	1.2754	1040.8	1657	.700
2900	1.1658-4	2666.9	10.0097	27.743	850	1.3443	-1.0160	3.7234	1.1487	999.2	6944	.455	1.3812	1.2771	1053.5	1684	.697
2950	1.1390-4	2858.1	10.0750	27.571	858	1.3813	-1.0181	3.9246	1.1474	1010.3	7582	.444	1.3824	1.2790	1066.7	1712	.693
3000	1.1125-4	3059.3	10.1427	27.387	867	1.4188	-1.0204	4.1232	1.1466	1021.9	8218	.435	1.3837	1.2811	1080.2	1742	.689

TABLE 13.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.033499; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.9124-3	-825.5	7.4951	28.894	397	1.0000	-1.0000	1.1827	1.3215	585.0	645	.729	1.1824	1.3216	585.1	644	.729
950	3.7065-3	-766.0	7.5593	28.894	412	1.0000	-1.0000	1.1951	1.3171	600.1	676	.728	1.1946	1.3173	600.1	676	.728
1000	3.5212-3	-706.0	7.6209	28.894	427	1.0000	-1.0000	1.2068	1.3131	614.7	708	.727	1.2060	1.3134	614.8	707	.727
1050	3.3535-3	-645.4	7.6801	28.894	441	1.0000	-1.0000	1.2176	1.3095	629.0	738	.727	1.2164	1.3099	629.1	738	.727
1100	3.2011-3	-584.2	7.7370	28.894	455	1.0000	-1.0000	1.2281	1.3060	643.0	768	.727	1.2263	1.3066	643.1	767	.726
1150	3.0619-3	-522.6	7.7918	28.894	468	1.0000	-1.0000	1.2383	1.3027	656.6	798	.726	1.2357	1.3036	656.8	797	.726
1200	2.9343-3	-460.4	7.8447	28.894	482	1.0000	-1.0000	1.2482	1.2996	669.9	828	.726	1.2447	1.3007	670.2	826	.726
1250	2.8169-3	-397.7	7.8959	28.894	495	1.0000	-1.0000	1.2580	1.2966	682.9	857	.726	1.2532	1.2981	683.3	854	.726
1300	2.7086-3	-334.6	7.9454	28.894	508	1.0000	-1.0000	1.2676	1.2937	695.7	887	.726	1.2613	1.2956	696.2	882	.726
1350	2.6083-3	-271.0	7.9934	28.894	520	1.0000	-1.0000	1.2771	1.2909	708.1	916	.726	1.2691	1.2932	708.8	910	.726
1400	2.5151-3	-206.9	8.0400	28.894	533	1.0000	-1.0000	1.2865	1.2881	720.4	945	.726	1.2765	1.2910	721.2	938	.726
1450	2.4284-3	-142.3	8.0853	28.894	545	1.0001	-1.0000	1.2959	1.2855	732.4	974	.725	1.2835	1.2890	733.4	965	.725
1500	2.3474-3	-77.3	8.1294	28.893	558	1.0001	-1.0000	1.3053	1.2829	744.1	1004	.725	1.2901	1.2871	745.4	992	.725
1550	2.2717-3	-11.8	8.1724	28.893	570	1.0002	-1.0000	1.3149	1.2803	755.7	1034	.725	1.2964	1.2853	757.2	1019	.725
1600	2.2007-3	54.2	8.2143	28.893	582	1.0002	-1.0000	1.3246	1.2777	767.0	1064	.724	1.3024	1.2836	768.8	1046	.724
1650	2.1340-3	120.7	8.2552	28.893	593	1.0003	-1.0000	1.3345	1.2751	778.1	1095	.723	1.3081	1.2820	780.2	1072	.724
1700	2.0712-3	187.6	8.2952	28.893	605	1.0005	-1.0000	1.3447	1.2726	789.0	1126	.723	1.3135	1.2805	791.5	1099	.723
1750	2.0120-3	255.1	8.3343	28.892	617	1.0007	-1.0000	1.3554	1.2700	799.7	1158	.722	1.3186	1.2792	802.6	1125	.723
1800	1.9561-3	323.2	8.3726	28.891	628	1.0010	-1.0000	1.3667	1.2674	810.2	1191	.721	1.3235	1.2779	813.6	1150	.722
1850	1.9031-3	391.8	8.4103	28.890	639	1.0014	-1.0000	1.3787	1.2647	820.6	1225	.720	1.3281	1.2766	824.4	1176	.722
1900	1.8530-3	461.1	8.4472	28.889	650	1.0019	-1.0001	1.3916	1.2619	830.7	1260	.718	1.3325	1.2755	835.1	1201	.721
1950	1.8054-3	531.0	8.4835	28.888	661	1.0025	-1.0001	1.4057	1.2590	840.6	1297	.717	1.3366	1.2744	845.7	1226	.721
2000	1.7601-3	601.7	8.5193	28.885	672	1.0034	-1.0001	1.4212	1.2560	850.3	1336	.715	1.3405	1.2734	856.2	1251	.720
2050	1.7170-3	673.1	8.5546	28.883	683	1.0044	-1.0001	1.4385	1.2528	859.8	1378	.713	1.3442	1.2725	866.6	1275	.720
2100	1.6759-3	745.5	8.5895	28.879	694	1.0058	-1.0002	1.4579	1.2494	869.1	1424	.711	1.3477	1.2717	876.8	1299	.720
2150	1.6367-3	819.0	8.6240	28.875	705	1.0076	-1.0002	1.4800	1.2458	878.2	1474	.708	1.3510	1.2709	887.0	1323	.719
2200	1.5992-3	893.6	8.6584	28.869	715	1.0099	-1.0003	1.5051	1.2420	887.1	1529	.704	1.3541	1.2701	897.1	1347	.719
2250	1.5632-3	969.6	8.6925	28.862	726	1.0126	-1.0004	1.5339	1.2379	895.7	1590	.700	1.3571	1.2695	907.1	1370	.719
2300	1.5288-3	1047.1	8.7266	28.853	736	1.0161	-1.0005	1.5669	1.2335	904.2	1660	.695	1.3599	1.2689	917.1	1393	.718
2350	1.4957-3	1126.3	8.7607	28.841	746	1.0203	-1.0007	1.6048	1.2289	912.4	1739	.689	1.3625	1.2684	927.0	1416	.718
2400	1.4638-3	1207.6	8.7949	28.827	756	1.0254	-1.0009	1.6481	1.2241	920.5	1828	.682	1.3650	1.2679	936.8	1439	.717
2450	1.4331-3	1291.2	8.8294	28.811	767	1.0315	-1.0012	1.6975	1.2191	928.4	1930	.674	1.3674	1.2675	946.7	1462	.717
2500	1.4034-3	1377.5	8.8642	28.790	777	1.0388	-1.0015	1.7536	1.2140	936.2	2047	.665	1.3696	1.2672	956.5	1484	.716
2550	1.3747-3	1466.7	8.8995	28.766	786	1.0474	-1.0018	1.8167	1.2088	943.9	2180	.655	1.3716	1.2670	966.3	1507	.716
2600	1.3469-3	1559.3	8.9355	28.737	796	1.0573	-1.0023	1.8873	1.2035	951.5	2332	.644	1.3736	1.2668	976.2	1530	.715
2650	1.3199-3	1655.6	8.9722	28.702	806	1.0686	-1.0028	1.9653	1.1984	959.1	2503	.633	1.3754	1.2668	986.1	1552	.714
2700	1.2937-3	1755.9	9.0097	28.662	815	1.0815	-1.0034	2.0507	1.1934	966.8	2695	.620	1.3771	1.2669	996.1	1575	.713
2750	1.2681-3	1860.8	9.0482	28.616	825	1.0958	-1.0040	2.1430	1.1887	974.6	2910	.608	1.3787	1.2670	1006.2	1597	.712
2800	1.2431-3	1970.3	9.0876	28.562	834	1.1116	-1.0048	2.2416	1.1844	982.5	3147	.594	1.3802	1.2673	1016.3	1620	.711
2850	1.2187-3	2085.0	9.1282	28.502	844	1.1287	-1.0057	2.3456	1.1804	990.6	3408	.581	1.3816	1.2677	1026.6	1642	.710
2900	1.1949-3	2205.0	9.1700	28.433	853	1.1471	-1.0066	2.4538	1.1768	999.0	3691	.567	1.3829	1.2682	1037.0	1665	.709
2950	1.1715-3	2330.4	9.2128	28.357	862	1.1666	-1.0076	2.5650	1.1736	1007.5	3995	.553	1.3841	1.2688	1047.6	1687	.707
3000	1.1485-3	2461.5	9.2569	28.273	871	1.1870	-1.0087	2.6781	1.1709	1016.4	4321	.540	1.3852	1.2695	1058.3	1711	.706

TABLE 13.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.033499; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9562-2	-825.5	7.0319	28.894	397	1.0000	-1.0000	1.1827	1.3215	585.0	645	.729	1.1824	1.3216	585.1	644	.729
950	1.8533-2	-766.0	7.0962	28.894	412	1.0000	-1.0000	1.1951	1.3171	600.1	676	.728	1.1946	1.3173	600.1	676	.728
1000	1.7606-2	-706.0	7.1578	28.894	427	1.0000	-1.0000	1.2068	1.3131	614.7	708	.727	1.2060	1.3134	614.8	707	.727
1050	1.6768-2	-645.4	7.2170	28.894	441	1.0000	-1.0000	1.2176	1.3094	629.0	738	.727	1.2164	1.3099	629.1	738	.727
1100	1.6005-2	-584.2	7.2739	28.894	455	1.0000	-1.0000	1.2281	1.3060	643.0	768	.727	1.2263	1.3066	643.1	767	.726
1150	1.5309-2	-522.6	7.3287	28.894	468	1.0000	-1.0000	1.2383	1.3027	656.6	798	.726	1.2357	1.3036	656.8	797	.726
1200	1.4672-2	-460.4	7.3816	28.894	482	1.0000	-1.0000	1.2482	1.2996	669.9	828	.726	1.2447	1.3007	670.2	826	.726
1250	1.4085-2	-397.7	7.4327	28.894	495	1.0000	-1.0000	1.2579	1.2966	682.9	857	.726	1.2532	1.2981	683.3	854	.726
1300	1.3543-2	-334.6	7.4823	28.894	508	1.0000	-1.0000	1.2675	1.2937	695.7	886	.726	1.2613	1.2956	696.2	882	.726
1350	1.3041-2	-271.0	7.5303	28.894	520	1.0000	-1.0000	1.2769	1.2909	708.2	916	.726	1.2691	1.2932	708.8	910	.726
1400	1.2576-2	-206.9	7.5769	28.894	533	1.0000	-1.0000	1.2863	1.2882	720.4	945	.726	1.2765	1.2910	721.2	938	.726
1450	1.2142-2	-142.4	7.6222	28.894	545	1.0000	-1.0000	1.2955	1.2855	732.4	974	.725	1.2835	1.2890	733.4	965	.725
1500	1.1737-2	-77.4	7.6663	28.894	558	1.0000	-1.0000	1.3048	1.2830	744.2	1003	.725	1.2901	1.2871	745.4	992	.725
1550	1.1359-2	-11.9	7.7092	28.894	570	1.0001	-1.0000	1.3141	1.2804	755.7	1033	.725	1.2964	1.2853	757.1	1019	.725
1600	1.1004-2	54.1	7.7511	28.894	582	1.0001	-1.0000	1.3234	1.2779	767.1	1063	.724	1.3024	1.2836	768.8	1046	.724
1650	1.0670-2	120.5	7.7919	28.893	593	1.0002	-1.0000	1.3328	1.2755	778.2	1093	.724	1.3081	1.2820	780.2	1072	.724
1700	1.0356-2	187.3	7.8319	28.893	605	1.0003	-1.0000	1.3424	1.2730	789.2	1123	.723	1.3135	1.2805	791.5	1099	.723
1750	1.0060-2	254.7	7.8709	28.893	617	1.0004	-1.0000	1.3521	1.2706	799.9	1154	.722	1.3186	1.2791	802.6	1125	.723
1800	9.7807-3	322.6	7.9091	28.893	628	1.0006	-1.0000	1.3622	1.2682	810.5	1185	.722	1.3235	1.2778	813.6	1150	.722
1850	9.5162-3	390.9	7.9466	28.892	639	1.0008	-1.0000	1.3725	1.2658	820.9	1217	.721	1.3281	1.2766	824.4	1176	.722
1900	9.2655-3	459.8	7.9833	28.891	650	1.0011	-1.0000	1.3834	1.2633	831.1	1250	.720	1.3325	1.2755	835.1	1201	.721
1950	9.0276-3	529.3	8.0194	28.890	661	1.0014	-1.0000	1.3947	1.2609	841.2	1283	.719	1.3366	1.2744	845.7	1226	.721
2000	8.8016-3	599.3	8.0549	28.889	672	1.0019	-1.0001	1.4067	1.2583	851.1	1318	.718	1.3405	1.2734	856.1	1251	.720
2050	8.5865-3	670.0	8.0898	28.888	683	1.0025	-1.0001	1.4196	1.2558	860.8	1354	.716	1.3442	1.2725	866.5	1275	.720
2100	8.3814-3	741.3	8.1241	28.886	694	1.0032	-1.0001	1.4334	1.2531	870.3	1391	.715	1.3477	1.2716	876.7	1299	.720
2150	8.1858-3	813.3	8.1580	28.883	705	1.0041	-1.0001	1.4484	1.2504	879.7	1431	.714	1.3510	1.2708	886.8	1323	.720
2200	7.9989-3	886.1	8.1915	28.880	715	1.0053	-1.0002	1.4648	1.2476	888.9	1472	.712	1.3542	1.2700	896.9	1347	.719
2250	7.8201-3	959.8	8.2246	28.876	726	1.0067	-1.0002	1.4828	1.2446	898.0	1517	.709	1.3572	1.2693	906.8	1370	.719
2300	7.6488-3	1034.4	8.2575	28.871	736	1.0084	-1.0003	1.5028	1.2416	906.8	1565	.707	1.3600	1.2686	916.7	1393	.718
2350	7.4846-3	1110.1	8.2900	28.866	746	1.0105	-1.0004	1.5250	1.2384	915.6	1617	.704	1.3626	1.2680	926.5	1416	.718
2400	7.3268-3	1187.0	8.3224	28.858	757	1.0131	-1.0005	1.5498	1.2351	924.1	1675	.700	1.3652	1.2675	936.2	1439	.718
2450	7.1752-3	1265.2	8.3546	28.850	767	1.0161	-1.0006	1.5774	1.2316	932.5	1737	.696	1.3676	1.2670	945.8	1462	.717
2500	7.0291-3	1344.8	8.3868	28.839	777	1.0197	-1.0007	1.6082	1.2280	940.8	1806	.692	1.3698	1.2666	955.4	1484	.717
2550	6.8883-3	1426.0	8.4190	28.827	787	1.0240	-1.0009	1.6426	1.2243	948.9	1883	.686	1.3719	1.2662	965.0	1507	.716
2600	6.7524-3	1509.1	8.4512	28.812	797	1.0290	-1.0011	1.6808	1.2205	956.9	1969	.680	1.3740	1.2659	974.6	1529	.716
2650	6.6210-3	1594.2	8.4836	28.795	806	1.0347	-1.0014	1.7230	1.2166	964.8	2063	.674	1.3759	1.2656	984.1	1552	.715
2700	6.4937-3	1681.5	8.5163	28.774	816	1.0413	-1.0017	1.7696	1.2127	972.7	2168	.666	1.3777	1.2654	993.6	1574	.714
2750	6.3704-3	1771.2	8.5492	28.750	826	1.0489	-1.0020	1.8206	1.2088	980.5	2284	.658	1.3793	1.2653	1003.1	1596	.714
2800	6.2507-3	1863.6	8.5825	28.723	835	1.0573	-1.0024	1.8759	1.2049	988.2	2412	.650	1.3809	1.2652	1012.7	1618	.713
2850	6.1343-3	1958.9	8.6162	28.692	845	1.0667	-1.0029	1.9356	1.2011	996.0	2552	.641	1.3824	1.2652	1022.2	1640	.712
2900	6.0210-3	2057.2	8.6504	28.656	854	1.0771	-1.0034	1.9993	1.1975	1003.8	2706	.631	1.3839	1.2653	1031.8	1662	.711
2950	5.9106-3	2158.9	8.6852	28.615	864	1.0884	-1.0040	2.0666	1.1941	1011.7	2873	.621	1.3852	1.2654	1041.5	1684	.710
3000	5.8029-3	2264.0	8.7205	28.570	873	1.1006	-1.0046	2.1371	1.1909	1019.7	3053	.611	1.3865	1.2657	1051.2	1706	.709

TABLE 13C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.033499; EQUIV.RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5008;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.892-5	-1713.4	7.3562	28.894	1.0559	1.810-5	29.706	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	1.716-5	-1689.0	7.4722	28.894	1.5712	1.644-5	29.677	142	1.000	-1.000	0.9928	1.3931	293	193	.731	220
240	1.535-5	-1627.4	7.7376	28.894	6.0092	1.493-5	29.394	150	1.000	-1.000	1.0067	1.3908	307	205	.735	240
						PRESSURE = 0.10 ATM										
200	1.892-4	-1713.7	6.7385	28.894	1.0196	1.810-4	29.707	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	1.720-4	-1692.9	6.8375	28.894	1.0772	1.645-4	29.704	142	1.000	-1.000	0.9916	1.3933	293	193	.730	220
240	1.573-4	-1668.4	6.9440	28.894	1.5043	1.507-4	29.676	153	1.000	-1.000	0.9940	1.3925	306	209	.727	240
260	1.428-4	-1619.8	7.1371	28.894	4.0332	1.382-4	29.482	161	1.000	-1.000	1.0043	1.3905	319	222	.729	260
280	1.258-4	-1508.3	7.5514	28.894	1.0335	1.258-4	28.894	166	1.000	-1.000	1.0335	1.3859	334	231	.742	280
						PRESSURE = 1.00 ATM										
200	1.892-3	-1713.7	6.1219	28.894	1.0160	1.810-3	29.707	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	1.720-3	-1693.3	6.2192	28.894	1.0281	1.646-3	29.707	142	1.000	-1.000	0.9914	1.3933	293	193	.730	220
240	1.576-3	-1672.3	6.3103	28.894	1.0774	1.508-3	29.704	153	1.000	-1.000	0.9927	1.3927	306	209	.727	240
260	1.453-3	-1648.9	6.4038	28.894	1.3275	1.391-3	29.685	163	1.000	-1.000	0.9951	1.3917	318	224	.724	260
280	1.338-3	-1602.0	6.5769	28.894	2.1061	1.288-3	29.593	172	1.000	-1.000	1.0012	1.3901	331	238	.724	280
298	1.230-3	-1550.0	6.7561	28.894	3.8908	1.199-3	29.344	179	1.000	-1.000	1.0146	1.3875	342	249	.730	298
300	1.218-3	-1542.6	6.7810	28.894	4.1830	1.190-3	29.301	180	1.000	-1.000	1.0168	1.3871	344	250	.731	300
320	1.100-3	-1466.9	7.0271	28.894	1.0386	1.100-3	28.894	185	1.000	-1.000	1.0386	1.3833	357	260	.740	320
						PRESSURE = 10.00 ATM										
200	1.891-2	-1713.7	5.5054	28.894	1.0156	1.810-2	29.707	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	1.719-2	-1693.3	5.6026	28.894	1.0232	1.646-2	29.707	142	1.000	-1.000	0.9914	1.3933	293	193	.730	220
240	1.576-2	-1672.7	5.6921	28.894	1.0350	1.508-2	29.707	153	1.000	-1.000	0.9926	1.3927	306	209	.726	240
260	1.454-2	-1651.8	5.7759	28.894	1.0672	1.392-2	29.705	163	1.000	-1.000	0.9942	1.3918	318	224	.724	260
280	1.350-2	-1614.8	5.9124	28.894	1.2306	1.292-2	29.696	173	1.000	-1.000	0.9965	1.3907	330	239	.722	280
298	1.265-2	-1591.1	5.9941	28.894	1.3963	1.213-2	29.671	182	1.000	-1.000	0.9997	1.3895	341	252	.722	298
300	1.256-2	-1588.5	6.0029	28.894	1.4221	1.205-2	29.667	183	1.000	-1.000	1.0001	1.3893	342	254	.722	300
320	1.170-2	-1556.2	6.1070	28.894	1.8659	1.127-2	29.587	192	1.000	-1.000	1.0063	1.3875	353	267	.724	320
340	1.083-2	-1510.8	6.2444	28.894	2.7830	1.054-2	29.397	199	1.000	-1.000	1.0179	1.3848	365	278	.729	340
360	9.876-3	-1439.1	6.4486	28.894	4.5740	9.817-3	29.000	205	1.000	-1.000	1.0398	1.3807	377	288	.738	360
380	9.266-3	-1404.3	6.5438	28.894	1.0485	9.266-3	28.894	213	1.000	-1.000	1.0485	1.3783	388	301	.740	380
						PRESSURE = 50.00 ATM										
200	9.419-2	-1713.7	5.0745	28.894	1.0156	9.051-2	29.707	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	8.566-2	-1693.3	5.1717	28.894	1.0227	8.228-2	29.707	142	1.000	-1.000	0.9914	1.3933	293	193	.730	220
240	7.855-2	-1672.8	5.2610	28.894	1.0312	7.542-2	29.707	153	1.000	-1.000	0.9926	1.3927	306	209	.726	240
260	7.253-2	-1652.0	5.3440	28.894	1.0441	6.962-2	29.707	163	1.000	-1.000	0.9942	1.3918	318	224	.724	260
280	6.737-2	-1615.9	5.4773	28.894	1.1543	6.464-2	29.705	173	1.000	-1.000	0.9961	1.3908	330	239	.722	280
298	6.326-2	-1594.7	5.5507	28.894	1.1880	6.070-2	29.700	182	1.000	-1.000	0.9984	1.3897	341	253	.721	298
300	6.286-2	-1592.5	5.5581	28.894	1.1932	6.032-2	29.699	183	1.000	-1.000	0.9986	1.3895	342	254	.721	300
320	5.886-2	-1567.8	5.6375	28.894	1.2817	5.652-2	29.683	193	1.000	-1.000	1.0019	1.3881	353	267	.721	320
340	5.523-2	-1540.6	5.7199	28.894	1.4559	5.313-2	29.645	201	1.000	-1.000	1.0065	1.3863	364	281	.723	340
360	5.183-2	-1508.7	5.8111	28.894	1.7649	5.004-2	29.566	210	1.000	-1.000	1.0133	1.3841	374	293	.725	360
380	4.849-2	-1468.7	5.9191	28.894	2.2722	4.717-2	29.417	217	1.000	-1.000	1.0236	1.3814	385	305	.728	380
400	4.505-2	-1415.9	6.0543	28.894	3.0669	4.442-2	29.158	224	1.000	-1.000	1.0396	1.3780	396	317	.734	400
420	4.192-2	-1362.2	6.1860	28.894	1.0565	4.192-2	28.894	230	1.000	-1.000	1.0565	1.3743	408	329	.739	420

TABLE 14A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.050248; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 28.8596;
DRY AIR; GASEOUS COMPOSITION: CO2= .09804; H2O= .10262; N2= .74077; O2= .04968; AR= .00888

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7585-3	8.7926-2	-2299.0	7.8756	7.2122	6.5488	5.8855	5.4218	1.0375	1.3845	282.4	118	159	.7730	200
210	1.6748-3	8.3739-2	-2288.6	7.9262	7.2628	6.5995	5.9361	5.4724	1.0384	1.3840	289.4	124	167	.7691	210
220	1.5986-3	7.9933-2	-2278.2	7.9745	7.3112	6.6478	5.9844	5.5208	1.0394	1.3835	296.1	129	176	.7656	220
230	1.5291-3	7.6457-2	-2267.8	8.0208	7.3574	6.6940	6.0307	5.5670	1.0405	1.3829	302.7	135	184	.7625	230
240	1.4654-3	7.3271-2	-2257.4	8.0651	7.4017	6.7383	6.0750	5.6113	1.0417	1.3823	309.2	140	192	.7597	240
250	1.4068-3	7.0341-2	-2247.0	8.1076	7.4443	6.7809	6.1175	5.6538	1.0430	1.3816	315.5	146	200	.7574	250
260	1.3527-3	6.7635-2	-2236.6	8.1486	7.4852	6.8218	6.1585	5.6948	1.0444	1.3809	321.6	151	208	.7554	260
270	1.3026-3	6.5130-2	-2226.1	8.1880	7.5246	6.8613	6.1979	5.7342	1.0458	1.3802	327.7	156	216	.7538	270
280	1.2561-3	6.2804-2	-2215.6	8.2261	7.5627	6.8993	6.2360	5.7723	1.0474	1.3794	333.6	161	224	.7525	280
290	1.2128-3	6.0638-2	-2205.2	8.2628	7.5995	6.9361	6.2727	5.8091	1.0490	1.3786	339.4	166	231	.7516	290
298	1.1796-3	5.8981-2	-2196.6	8.2919	7.6286	6.9652	6.3018	5.8382	1.0503	1.3780	344.0	170	238	.7510	298
300	1.1723-3	5.8617-2	-2194.7	8.2984	7.6351	6.9717	6.3083	5.8446	1.0506	1.3778	345.1	171	239	.7509	300
310	1.1345-3	5.6726-2	-2184.1	8.3329	7.6695	7.0062	6.3428	5.8791	1.0524	1.3769	350.7	176	246	.7508	310
320	1.0991-3	5.4954-2	-2173.6	8.3664	7.7030	7.0396	6.3762	5.9126	1.0542	1.3760	356.2	180	253	.7509	320
330	1.0658-3	5.3288-2	-2163.1	8.3988	7.7355	7.0721	6.4087	5.9450	1.0561	1.3751	361.6	185	260	.7511	330
340	1.0344-3	5.1721-2	-2152.5	8.4304	7.7670	7.1036	6.4403	5.9766	1.0580	1.3742	366.9	190	267	.7512	340
350	1.0049-3	5.0243-2	-2141.9	8.4611	7.7977	7.1343	6.4710	6.0073	1.0601	1.3732	372.1	194	274	.7514	350
360	9.7695-4	4.8848-2	-2131.3	8.4910	7.8276	7.1642	6.5009	6.0372	1.0621	1.3722	377.3	199	281	.7510	360
370	9.5055-4	4.7527-2	-2120.7	8.5201	7.8567	7.1934	6.5300	6.0663	1.0643	1.3712	382.3	203	289	.7504	370
380	9.2553-4	4.6277-2	-2110.0	8.5485	7.8851	7.2218	6.5584	6.0947	1.0664	1.3701	387.3	208	296	.7499	380
390	9.0180-4	4.5090-2	-2099.3	8.5762	7.9129	7.2495	6.5861	6.1225	1.0687	1.3691	392.2	212	303	.7493	390
400	8.7926-4	4.3963-2	-2088.6	8.6033	7.9400	7.2766	6.6132	6.1495	1.0710	1.3680	397.0	217	310	.7487	400
410	8.5781-4	4.2891-2	-2077.9	8.6298	7.9664	7.3031	6.6397	6.1760	1.0733	1.3669	401.8	221	317	.7484	410
420	8.3739-4	4.1869-2	-2067.2	8.6557	7.9923	7.3290	6.6656	6.2019	1.0757	1.3658	406.5	225	324	.7481	420
430	8.1791-4	4.0896-2	-2056.4	8.6810	8.0177	7.3543	6.6909	6.2272	1.0781	1.3647	411.2	229	331	.7479	430
440	7.9932-4	3.9966-2	-2045.6	8.7058	8.0425	7.3791	6.7157	6.2521	1.0806	1.3635	415.7	234	338	.7478	440
450	7.8156-4	3.9078-2	-2034.8	8.7302	8.0668	7.4034	6.7401	6.2764	1.0831	1.3624	420.3	238	344	.7477	450
460	7.6457-4	3.8229-2	-2023.9	8.7540	8.0906	7.4273	6.7639	6.3002	1.0857	1.3612	424.7	242	351	.7477	460
470	7.4830-4	3.7415-2	-2013.1	8.7774	8.1140	7.4506	6.7873	6.3236	1.0883	1.3600	429.1	246	358	.7477	470
480	7.3271-4	3.6636-2	-2002.2	8.8003	8.1369	7.4736	6.8102	6.3465	1.0909	1.3589	433.5	250	364	.7477	480
490	7.1776-4	3.5888-2	-1991.2	8.8228	8.1595	7.4961	6.8327	6.3690	1.0936	1.3577	437.8	254	371	.7477	490
500	7.0341-4	3.5170-2	-1980.3	8.8450	8.1816	7.5182	6.8548	6.3912	1.0963	1.3565	442.0	258	378	.7478	500
510	6.8961-4	3.4481-2	-1969.3	8.8667	8.2033	7.5399	6.8766	6.4129	1.0990	1.3553	446.2	261	384	.7476	510
520	6.7635-4	3.3818-2	-1958.3	8.8881	8.2247	7.5613	6.8979	6.4343	1.1017	1.3541	450.4	265	391	.7474	520
530	6.6359-4	3.3180-2	-1947.3	8.9091	8.2457	7.5823	6.9190	6.4553	1.1045	1.3529	454.5	269	398	.7472	530
540	6.5130-4	3.2565-2	-1936.2	8.9297	8.2664	7.6030	6.9396	6.4760	1.1073	1.3517	458.6	273	405	.7470	540
550	6.3946-4	3.1973-2	-1925.1	8.9501	8.2867	7.6233	6.9600	6.4963	1.1102	1.3505	462.6	277	411	.7468	550
560	6.2804-4	3.1402-2	-1914.0	8.9701	8.3067	7.6434	6.9800	6.5163	1.1130	1.3492	466.6	280	418	.7465	560
570	6.1702-4	3.0851-2	-1902.9	8.9898	8.3265	7.6631	6.9997	6.5361	1.1159	1.3480	470.5	284	425	.7462	570
580	6.0638-4	3.0319-2	-1891.7	9.0093	8.3459	7.6825	7.0192	6.5555	1.1188	1.3468	474.4	288	432	.7459	580
590	5.9611-4	2.9805-2	-1880.5	9.0284	8.3651	7.7017	7.0383	6.5746	1.1217	1.3456	478.3	292	439	.7456	590

TABLE 14A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.050248; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 28.8596;
DRY AIR; GASEOUS COMPOSITION: CO2= .09804; H2O= .10262; N2= .74077; O2= .04968; AR= .00888

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8617-4	2.9309-2	-1869.3	9.0473	8.3839	7.7206	7.0572	6.5935	1.1246	1.3444	482.1	295	445	.7453	600
610	5.7656-4	2.8828-2	-1858.0	9.0659	8.4025	7.7392	7.0758	6.6121	1.1275	1.3432	485.9	299	452	.7450	610
620	5.6726-4	2.8363-2	-1846.7	9.0843	8.4209	7.7575	7.0942	6.6305	1.1305	1.3420	489.6	302	459	.7446	620
630	5.5826-4	2.7913-2	-1835.4	9.1024	8.4390	7.7756	7.1123	6.6486	1.1334	1.3408	493.3	306	466	.7442	630
640	5.4954-4	2.7477-2	-1824.1	9.1203	8.4569	7.7935	7.1301	6.6665	1.1364	1.3396	497.0	310	473	.7438	640
650	5.4108-4	2.7054-2	-1812.7	9.1379	8.4745	7.8112	7.1478	6.6841	1.1394	1.3384	500.6	313	480	.7434	650
660	5.3288-4	2.6644-2	-1801.3	9.1553	8.4919	7.8286	7.1652	6.7015	1.1423	1.3373	504.3	317	487	.7430	660
670	5.2493-4	2.6247-2	-1789.8	9.1725	8.5091	7.8458	7.1824	6.7187	1.1453	1.3361	507.8	320	494	.7425	670
680	5.1721-4	2.5861-2	-1778.4	9.1895	8.5261	7.8628	7.1994	6.7357	1.1483	1.3349	511.4	324	501	.7421	680
690	5.0971-4	2.5486-2	-1766.9	9.2063	8.5429	7.8795	7.2162	6.7525	1.1513	1.3338	514.9	327	507	.7417	690
700	5.0243-4	2.5122-2	-1755.3	9.2229	8.5595	7.8961	7.2328	6.7691	1.1542	1.3326	518.4	330	514	.7413	700
710	4.9536-4	2.4768-2	-1743.8	9.2393	8.5759	7.9125	7.2492	6.7855	1.1572	1.3315	521.9	334	521	.7409	710
720	4.8848-4	2.4424-2	-1732.2	9.2555	8.5921	7.9287	7.2654	6.8017	1.1602	1.3304	525.3	337	528	.7405	720
730	4.8178-4	2.4089-2	-1720.6	9.2715	8.6081	7.9448	7.2814	6.8177	1.1632	1.3292	528.7	340	535	.7401	730
740	4.7527-4	2.3764-2	-1708.9	9.2873	8.6240	7.9606	7.2972	6.8336	1.1661	1.3281	532.1	344	542	.7398	740
750	4.6894-4	2.3447-2	-1697.3	9.3030	8.6396	7.9763	7.3129	6.8492	1.1691	1.3270	535.5	347	549	.7394	750
760	4.6277-4	2.3138-2	-1685.5	9.3185	8.6551	7.9918	7.3284	6.8647	1.1720	1.3259	538.8	350	556	.7390	760
770	4.5676-4	2.2838-2	-1673.8	9.3339	8.6705	8.0071	7.3437	6.8801	1.1749	1.3249	542.1	354	563	.7386	770
780	4.5090-4	2.2545-2	-1662.0	9.3490	8.6857	8.0223	7.3589	6.8953	1.1779	1.3238	545.4	357	570	.7383	780
790	4.4519-4	2.2260-2	-1650.3	9.3641	8.7007	8.0373	7.3740	6.9103	1.1808	1.3227	548.7	360	576	.7380	790
800	4.3963-4	2.1981-2	-1638.4	9.3789	8.7156	8.0522	7.3888	6.9251	1.1837	1.3217	551.9	363	583	.7376	800
810	4.3420-4	2.1710-2	-1626.6	9.3937	8.7303	8.0669	7.4035	6.9399	1.1866	1.3207	555.1	367	590	.7373	810
820	4.2891-4	2.1445-2	-1614.7	9.4082	8.7449	8.0815	7.4181	6.9544	1.1894	1.3196	558.3	370	597	.7371	820
830	4.2374-4	2.1187-2	-1602.8	9.4227	8.7593	8.0959	7.4326	6.9689	1.1923	1.3186	561.5	373	604	.7368	830
840	4.1869-4	2.0935-2	-1590.9	9.4370	8.7736	8.1102	7.4469	6.9832	1.1951	1.3176	564.7	376	610	.7366	840
850	4.1377-4	2.0688-2	-1578.9	9.4511	8.7878	8.1244	7.4610	6.9973	1.1979	1.3167	567.8	379	617	.7363	850
860	4.0896-4	2.0448-2	-1566.9	9.4651	8.8018	8.1384	7.4750	7.0114	1.2007	1.3157	570.9	382	624	.7361	860
870	4.0426-4	2.0213-2	-1554.9	9.4790	8.8157	8.1523	7.4889	7.0253	1.2035	1.3147	574.0	386	631	.7359	870
880	3.9966-4	1.9983-2	-1542.8	9.4928	8.8294	8.1661	7.5027	7.0390	1.2062	1.3138	577.1	389	637	.7357	880
890	3.9517-4	1.9759-2	-1530.8	9.5065	8.8431	8.1797	7.5163	7.0527	1.2089	1.3129	580.2	392	644	.7354	890
900	3.9078-4	1.9539-2	-1518.6	9.5200	8.8566	8.1932	7.5299	7.0662	1.2116	1.3120	583.2	395	651	.7352	900
910	3.8649-4	1.9324-2	-1506.5	9.5334	8.8700	8.2066	7.5433	7.0796	1.2143	1.3111	586.3	398	657	.7350	910
920	3.8229-4	1.9114-2	-1494.4	9.5467	8.8833	8.2199	7.5566	7.0929	1.2169	1.3102	589.3	401	664	.7348	920
930	3.7818-4	1.8909-2	-1482.2	9.5598	8.8965	8.2331	7.5697	7.1061	1.2195	1.3093	592.3	404	670	.7346	930
940	3.7415-4	1.8708-2	-1470.0	9.5729	8.9095	8.2462	7.5828	7.1191	1.2221	1.3085	595.3	407	677	.7344	940
950	3.7021-4	1.8511-2	-1457.7	9.5858	8.9225	8.2591	7.5957	7.1321	1.2247	1.3076	598.2	410	684	.7343	950
960	3.6636-4	1.8318-2	-1445.5	9.5987	8.9353	8.2719	7.6086	7.1449	1.2272	1.3068	601.2	413	690	.7341	960
970	3.6258-4	1.8129-2	-1433.2	9.6114	8.9480	8.2847	7.6213	7.1576	1.2297	1.3060	604.1	416	697	.7339	970
980	3.5888-4	1.7944-2	-1420.9	9.6240	8.9607	8.2973	7.6339	7.1702	1.2321	1.3052	607.0	419	703	.7337	980
990	3.5526-4	1.7763-2	-1408.6	9.6366	8.9732	8.3098	7.6464	7.1828	1.2346	1.3044	609.9	422	710	.7336	990

TABLE 14A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.050248; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7504; MW = 28.8596;
DRY AIR; GASEOUS COMPOSITION: CO2= .09804; H2O= .10262; N2= .74077; O2= .04968; AR= .00888

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.5170-4	1.7585-2	-1396.2	9.6490	8.9856	8.3222	7.6589	7.1952	1.2370	1.3036	612.8	425	716	.7334	1000
1050	3.3496-4	1.6748-2	-1334.1	9.7096	9.0462	8.3829	7.7195	7.2558	1.2482	1.3001	627.1	439	748	.7327	1050
1100	3.1973-4	1.5987-2	-1271.4	9.7679	9.1046	8.4412	7.7778	7.3141	1.2590	1.2967	641.1	453	779	.7321	1100
1150	3.0583-4	1.5291-2	-1208.2	9.8241	9.1607	8.4974	7.8340	7.3703	1.2692	1.2936	654.7	467	810	.7317	1150
1200	2.9309-4	1.4654-2	-1144.5	9.8783	9.2150	8.5516	7.8882	7.4245	1.2789	1.2908	668.0	481	840	.7312	1200
1250	2.8136-4	1.4068-2	-1080.3	9.9307	9.2674	8.6040	7.9406	7.4769	1.2882	1.2881	681.1	494	871	.7308	1250
1300	2.7054-4	1.3527-2	-1015.7	9.9814	9.3181	8.6547	7.9913	7.5276	1.2971	1.2855	693.9	507	900	.7304	1300
1350	2.6052-4	1.3026-2	-950.6	10.0305	9.3672	8.7038	8.0404	7.5768	1.3055	1.2832	706.4	520	930	.7301	1350
1400	2.5122-4	1.2561-2	-885.1	10.0782	9.4148	8.7514	8.0881	7.6244	1.3135	1.2810	718.8	533	959	.7297	1400
1450	2.4255-4	1.2128-2	-819.2	10.1244	9.4610	8.7977	8.1343	7.6706	1.3211	1.2789	730.9	545	988	.7293	1450
1500	2.3447-4	1.1723-2	-753.0	10.1693	9.5059	8.8426	8.1792	7.7155	1.3283	1.2770	742.9	558	1017	.7289	1500
1550	2.2691-4	1.1345-2	-686.4	10.2130	9.5496	8.8862	8.2229	7.7592	1.3352	1.2751	754.6	570	1045	.7283	1550
1600	2.1981-4	1.0991-2	-619.5	10.2555	9.5921	8.9287	8.2654	7.8017	1.3417	1.2734	766.2	582	1074	.7277	1600
1650	2.1315-4	1.0658-2	-552.3	10.2968	9.6335	8.9701	8.3067	7.8431	1.3478	1.2719	777.6	594	1102	.7271	1650
1700	2.0688-4	1.0344-2	-484.7	10.3372	9.6738	9.0104	8.3471	7.8834	1.3537	1.2704	788.8	606	1130	.7265	1700
1750	2.0097-4	1.0049-2	-416.9	10.3765	9.7131	9.0498	8.3864	7.9227	1.3593	1.2690	799.9	618	1157	.7258	1750
1800	1.9539-4	9.7695-3	-348.8	10.4149	9.7515	9.0881	8.4247	7.9611	1.3645	1.2676	810.8	630	1185	.7252	1800
1850	1.9011-4	9.5055-3	-280.4	10.4523	9.7889	9.1256	8.4622	7.9985	1.3695	1.2664	821.6	641	1212	.7245	1850
1900	1.8511-4	9.2553-3	-211.9	10.4889	9.8255	9.1622	8.4988	8.0351	1.3742	1.2653	832.2	653	1239	.7239	1900
1950	1.8036-4	9.0180-3	-143.0	10.5247	9.8613	9.1979	8.5345	8.0709	1.3787	1.2642	842.7	664	1265	.7232	1950
2000	1.7585-4	8.7926-3	-74.0	10.5596	9.8962	9.2329	8.5695	8.1058	1.3830	1.2631	853.1	675	1292	.7226	2000
2050	1.7156-4	8.5781-3	-4.7	10.5938	9.9304	9.2671	8.6037	8.1400	1.3870	1.2622	863.4	686	1318	.7221	2050
2100	1.6748-4	8.3739-3	64.7	10.6273	9.9639	9.3005	8.6372	8.1735	1.3908	1.2613	873.5	697	1343	.7215	2100
2150	1.6358-4	8.1791-3	134.3	10.6600	9.9967	9.3333	8.6699	8.2063	1.3944	1.2604	883.6	708	1369	.7210	2150
2200	1.5986-4	7.9933-3	204.1	10.6921	10.0288	9.3654	8.7020	8.2384	1.3978	1.2596	893.5	719	1394	.7204	2200
2250	1.5631-4	7.8156-3	274.1	10.7236	10.0602	9.3969	8.7335	8.2698	1.4010	1.2589	903.3	729	1419	.7199	2250
2300	1.5291-4	7.6457-3	344.2	10.7544	10.0911	9.4277	8.7643	8.3006	1.4041	1.2581	913.1	740	1444	.7193	2300
2350	1.4966-4	7.4830-3	414.5	10.7846	10.1213	9.4579	8.7945	8.3309	1.4070	1.2575	922.7	750	1469	.7187	2350
2400	1.4654-4	7.3271-3	484.9	10.8143	10.1509	9.4876	8.8242	8.3605	1.4098	1.2568	932.2	761	1493	.7181	2400
2450	1.4355-4	7.1776-3	555.5	10.8434	10.1800	9.5167	8.8533	8.3896	1.4124	1.2562	941.6	771	1518	.7175	2450
2500	1.4068-4	7.0341-3	626.2	10.8720	10.2086	9.5452	8.8818	8.4182	1.4150	1.2557	951.0	781	1542	.7168	2500
2550	1.3792-4	6.8961-3	697.0	10.9000	10.2366	9.5733	8.9099	8.4462	1.4174	1.2551	960.2	791	1566	.7161	2550
2600	1.3527-4	6.7635-3	767.9	10.9275	10.2642	9.6008	8.9374	8.4738	1.4196	1.2546	969.4	801	1590	.7153	2600
2650	1.3272-4	6.6359-3	839.0	10.9546	10.2912	9.6279	8.9645	8.5008	1.4218	1.2541	978.5	811	1614	.7145	2650
2700	1.3026-4	6.5130-3	910.1	10.9812	10.3178	9.6545	8.9911	8.5274	1.4239	1.2537	987.5	821	1638	.7138	2700
2750	1.2789-4	6.3946-3	981.3	11.0074	10.3440	9.6806	9.0172	8.5536	1.4259	1.2532	996.4	831	1662	.7130	2750
2800	1.2561-4	6.2804-3	1052.7	11.0331	10.3697	9.7063	9.0430	8.5793	1.4278	1.2528	1005.3	841	1685	.7123	2800
2850	1.2340-4	6.1702-3	1124.1	11.0583	10.3950	9.7316	9.0682	8.6046	1.4297	1.2524	1014.0	850	1708	.7116	2850
2900	1.2128-4	6.0638-3	1195.7	11.0832	10.4199	9.7565	9.0931	8.6294	1.4315	1.2520	1022.7	860	1732	.7109	2900
2950	1.1922-4	5.9611-3	1267.3	11.1077	10.4443	9.7810	9.1176	8.6539	1.4332	1.2516	1031.4	870	1755	.7103	2950
3000	1.1723-4	5.8617-3	1339.0	11.1318	10.4684	9.8051	9.1417	8.6780	1.4349	1.2512	1039.9	879	1777	.7096	3000

TABLE 14.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.050248; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9078-6	-1518.6	9.5200	28.860	395	1.0000	-1.0000	1.2118	1.3119	583.2	651	.735	1.2116	1.3120	583.2	651	.735
950	3.7021-6	-1457.7	9.5859	28.860	410	1.0000	-1.0000	1.2250	1.3075	598.2	684	.734	1.2247	1.3076	598.2	684	.734
1000	3.5170-6	-1396.1	9.6490	28.860	425	1.0000	-1.0000	1.2376	1.3034	612.8	717	.733	1.2370	1.3036	612.8	716	.733
1050	3.3496-6	-1334.0	9.7097	28.860	439	1.0000	-1.0000	1.2491	1.2998	627.0	748	.733	1.2482	1.3001	627.1	748	.733
1100	3.1973-6	-1271.2	9.7681	28.860	453	1.0000	-1.0000	1.2604	1.2963	640.9	780	.732	1.2590	1.2967	641.1	779	.732
1150	3.0583-6	-1207.9	9.8243	28.860	467	1.0000	-1.0000	1.2713	1.2930	654.5	811	.732	1.2692	1.2936	654.7	810	.732
1200	2.9309-6	-1144.1	9.8787	28.860	481	1.0000	-1.0000	1.2819	1.2899	667.8	842	.731	1.2789	1.2908	668.0	840	.731
1250	2.8136-6	-1079.8	9.9312	28.860	494	1.0001	-1.0000	1.2925	1.2869	680.8	874	.731	1.2882	1.2881	681.1	871	.731
1300	2.7054-6	-1014.9	9.9821	28.859	507	1.0001	-1.0000	1.3030	1.2839	693.5	905	.730	1.2971	1.2855	693.9	900	.730
1350	2.6052-6	-949.4	10.0315	28.859	520	1.0002	-1.0000	1.3138	1.2810	705.9	936	.730	1.3055	1.2832	706.5	930	.730
1400	2.5121-6	-883.5	10.0795	28.859	533	1.0003	-1.0000	1.3252	1.2780	718.0	969	.729	1.3135	1.2810	718.8	959	.730
1450	2.4254-6	-816.9	10.1262	28.859	545	1.0006	-1.0000	1.3376	1.2749	729.8	1003	.728	1.3211	1.2789	730.9	988	.729
1500	2.3445-6	-749.7	10.1718	28.858	558	1.0010	-1.0000	1.3518	1.2715	741.3	1038	.726	1.3283	1.2770	742.9	1017	.729
1550	2.2688-6	-681.7	10.2164	28.857	570	1.0017	-1.0000	1.3687	1.2677	752.4	1078	.724	1.3352	1.2752	754.7	1045	.728
1600	2.1978-6	-612.7	10.2601	28.855	582	1.0028	-1.0001	1.3901	1.2632	763.2	1124	.721	1.3417	1.2735	766.2	1074	.728
1650	2.1309-6	-542.6	10.3033	28.851	594	1.0045	-1.0001	1.4181	1.2578	773.4	1178	.716	1.3478	1.2720	777.7	1102	.727
1700	2.0679-6	-470.8	10.3462	28.846	606	1.0073	-1.0002	1.4558	1.2511	783.0	1246	.708	1.3537	1.2705	789.0	1130	.726
1750	2.0083-6	-396.8	10.3891	28.839	618	1.0115	-1.0003	1.5075	1.2428	791.9	1334	.698	1.3592	1.2692	800.2	1158	.726
1800	1.9517-6	-319.7	10.4325	28.827	630	1.0178	-1.0005	1.5786	1.2327	800.0	1452	.684	1.3644	1.2681	811.4	1185	.725
1850	1.8978-6	-238.5	10.4770	28.809	641	1.0270	-1.0007	1.6761	1.2208	807.3	1613	.666	1.3693	1.2671	822.5	1212	.724
1900	1.8462-6	-151.5	10.5234	28.784	652	1.0402	-1.0012	1.8079	1.2073	814.0	1832	.644	1.3739	1.2662	833.6	1239	.723
1950	1.7966-6	-56.9	10.5725	28.748	663	1.0585	-1.0017	1.9824	1.1929	820.2	2129	.617	1.3782	1.2656	844.9	1266	.722
2000	1.7486-6	47.6	10.6254	28.697	674	1.0831	-1.0025	2.2075	1.1784	826.4	2527	.589	1.3821	1.2652	856.2	1293	.720
2050	1.7018-6	164.7	10.6833	28.627	685	1.1150	-1.0036	2.4888	1.1648	832.8	3047	.559	1.3858	1.2652	867.9	1320	.719
2100	1.6559-6	297.4	10.7472	28.534	695	1.1550	-1.0050	2.8290	1.1526	839.8	3710	.530	1.3891	1.2654	880.0	1347	.717
2150	1.6106-6	448.6	10.8183	28.415	705	1.2034	-1.0068	3.2269	1.1422	847.7	4534	.502	1.3922	1.2661	892.5	1374	.714
2200	1.5657-6	621.0	10.8976	28.265	715	1.2601	-1.0090	3.6786	1.1338	856.6	5533	.475	1.3950	1.2672	905.6	1402	.711
2250	1.5209-6	817.3	10.9858	28.080	724	1.3249	-1.0115	4.1790	1.1272	866.6	6714	.451	1.3975	1.2688	919.4	1431	.707
2300	1.4761-6	1039.7	11.0835	27.858	733	1.3975	-1.0145	4.7230	1.1222	877.7	8076	.429	1.3999	1.2710	934.0	1462	.702
2350	1.4312-6	1290.2	11.1912	27.598	742	1.4774	-1.0180	5.3061	1.1185	889.9	9602	.410	1.4023	1.2736	949.6	1496	.695
2400	1.3861-6	1570.8	11.3094	27.297	750	1.5638	-1.0219	5.9230	1.1159	903.2	11254	.395	1.4046	1.2769	966.1	1532	.688
2450	1.3409-6	1882.9	11.4381	26.957	759	1.6553	-1.0262	6.5645	1.1143	917.6	12964	.384	1.4070	1.2808	983.8	1573	.679
2500	1.2955-6	2227.4	11.5772	26.577	767	1.7492	-1.0308	7.2133	1.1134	933.2	14632	.378	1.4096	1.2852	1002.6	1618	.668
2550	1.2503-6	2603.9	11.7263	26.162	775	1.8409	-1.0356	7.8392	1.1133	949.9	16128	.377	1.4124	1.2904	1022.6	1667	.656
2600	1.2054-6	3010.2	11.8841	25.717	783	1.9235	-1.0401	8.3973	1.1140	967.7	17303	.380	1.4154	1.2960	1043.8	1721	.644
2650	1.1613-6	3441.5	12.0484	25.252	791	1.9888	-1.0441	8.8299	1.1153	986.5	18016	.388	1.4186	1.3022	1066.0	1779	.631
2700	1.1184-6	3890.1	12.2161	24.779	799	2.0281	-1.0470	9.0763	1.1174	1006.1	18167	.399	1.4220	1.3088	1088.9	1840	.618
2750	1.0775-6	4345.3	12.3831	24.313	807	2.0348	-1.0485	9.0885	1.1202	1026.4	17726	.414	1.4255	1.3156	1112.3	1901	.605
2800	1.0389-6	4794.7	12.5451	23.869	816	2.0066	-1.0482	8.8481	1.1240	1047.0	16750	.431	1.4290	1.3223	1135.7	1962	.594
2850	1.0031-6	5226.2	12.6978	23.459	825	1.9465	-1.0464	8.3752	1.1286	1067.7	15373	.449	1.4324	1.3288	1158.5	2021	.585
2900	9.7041-7	5629.2	12.8381	23.092	834	1.8620	-1.0431	7.7240	1.1344	1088.3	13764	.468	1.4356	1.3348	1180.6	2076	.577
2950	9.4079-7	5996.8	12.9637	22.773	843	1.7628	-1.0390	6.9668	1.1414	1108.7	12090	.486	1.4385	1.3401	1201.4	2127	.570
3000	9.1412-7	6325.4	13.0742	22.503	853	1.6584	-1.0343	6.1755	1.1497	1128.9	10484	.502	1.4411	1.3448	1220.9	2175	.565

TABLE 14.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.050248; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9078-5	-1518.6	8.8566	28.860	395	1.0000	-1.0000	1.2118	1.3119	583.2	651	.735	1.2116	1.3120	583.2	651	.735
950	3.7021-5	-1457.7	8.9225	28.860	410	1.0000	-1.0000	1.2250	1.3075	598.2	684	.734	1.2247	1.3076	598.2	684	.734
1000	3.5170-5	-1396.1	8.9857	28.860	425	1.0000	-1.0000	1.2375	1.3034	612.8	717	.733	1.2370	1.3036	612.8	716	.733
1050	3.3496-5	-1334.0	9.0463	28.860	439	1.0000	-1.0000	1.2491	1.2998	627.0	748	.733	1.2482	1.3001	627.1	748	.733
1100	3.1973-5	-1271.2	9.1047	28.860	453	1.0000	-1.0000	1.2603	1.2963	641.0	780	.732	1.2590	1.2967	641.1	779	.732
1150	3.0583-5	-1208.0	9.1610	28.860	467	1.0000	-1.0000	1.2711	1.2931	654.5	811	.732	1.2692	1.2936	654.7	810	.732
1200	2.9309-5	-1144.1	9.2153	28.860	481	1.0000	-1.0000	1.2817	1.2900	667.8	842	.731	1.2789	1.2908	668.0	840	.731
1250	2.8136-5	-1079.8	9.2678	28.860	494	1.0000	-1.0000	1.2920	1.2870	680.8	873	.731	1.2882	1.2881	681.1	871	.731
1300	2.7054-5	-1014.9	9.3187	28.860	507	1.0001	-1.0000	1.3022	1.2841	693.5	904	.730	1.2971	1.2855	693.9	900	.730
1350	2.6052-5	-949.6	9.3680	28.859	520	1.0001	-1.0000	1.3123	1.2814	705.9	935	.730	1.3055	1.2832	706.5	930	.730
1400	2.5121-5	-883.7	9.4159	28.859	533	1.0002	-1.0000	1.3226	1.2786	718.1	966	.729	1.3135	1.2810	718.8	959	.730
1450	2.4255-5	-817.3	9.4625	28.859	545	1.0003	-1.0000	1.3331	1.2759	730.1	998	.729	1.3211	1.2789	730.9	988	.729
1500	2.3446-5	-750.4	9.5079	28.859	558	1.0005	-1.0000	1.3443	1.2731	741.7	1030	.728	1.3283	1.2770	742.9	1017	.729
1550	2.2689-5	-682.9	9.5522	28.858	570	1.0007	-1.0000	1.3564	1.2702	753.1	1064	.727	1.3352	1.2752	754.6	1045	.728
1600	2.1980-5	-614.7	9.5954	28.857	582	1.0012	-1.0000	1.3700	1.2671	764.3	1100	.725	1.3417	1.2735	766.2	1074	.728
1650	2.1313-5	-545.8	9.6378	28.856	594	1.0018	-1.0000	1.3859	1.2636	775.1	1139	.723	1.3478	1.2719	777.6	1102	.727
1700	2.0684-5	-476.1	9.6795	28.854	606	1.0029	-1.0001	1.4051	1.2597	785.6	1183	.720	1.3537	1.2704	788.9	1130	.726
1750	2.0091-5	-405.2	9.7205	28.851	618	1.0044	-1.0001	1.4289	1.2552	795.6	1233	.716	1.3592	1.2691	800.0	1157	.726
1800	1.9530-5	-333.1	9.7612	28.847	630	1.0066	-1.0002	1.4592	1.2499	805.3	1292	.711	1.3645	1.2678	811.0	1185	.725
1850	1.8998-5	-259.2	9.8017	28.840	641	1.0098	-1.0003	1.4983	1.2437	814.4	1363	.705	1.3694	1.2667	821.9	1212	.724
1900	1.8492-5	-183.0	9.8423	28.831	652	1.0143	-1.0004	1.5492	1.2363	823.0	1453	.696	1.3741	1.2656	832.7	1239	.724
1950	1.8010-5	-104.0	9.8834	28.818	664	1.0207	-1.0006	1.6152	1.2277	831.1	1567	.684	1.3785	1.2647	843.5	1266	.723
2000	1.7549-5	-21.2	9.9253	28.800	675	1.0294	-1.0009	1.7004	1.2181	838.6	1713	.670	1.3826	1.2639	854.3	1292	.722
2050	1.7106-5	66.4	9.9686	28.775	686	1.0411	-1.0013	1.8089	1.2075	845.7	1899	.653	1.3865	1.2633	865.0	1318	.721
2100	1.6679-5	160.2	10.0137	28.742	696	1.0563	-1.0018	1.9447	1.1965	852.5	2137	.634	1.3901	1.2628	875.9	1344	.720
2150	1.6266-5	261.4	10.0614	28.697	707	1.0757	-1.0025	2.1109	1.1853	859.3	2436	.612	1.3934	1.2625	886.8	1370	.719
2200	1.5865-5	371.8	10.1121	28.640	717	1.0998	-1.0033	2.3095	1.1747	866.2	2807	.590	1.3965	1.2624	897.9	1395	.718
2250	1.5473-5	492.9	10.1665	28.567	727	1.1287	-1.0044	2.5404	1.1649	873.4	3259	.567	1.3993	1.2626	909.3	1421	.716
2300	1.5088-5	626.3	10.2252	28.476	737	1.1625	-1.0057	2.8019	1.1562	881.2	3798	.544	1.4018	1.2631	921.0	1447	.714
2350	1.4709-5	773.5	10.2885	28.365	747	1.2011	-1.0073	3.0904	1.1488	889.6	4430	.521	1.4042	1.2638	933.0	1473	.712
2400	1.4336-5	935.8	10.3568	28.233	756	1.2440	-1.0091	3.4019	1.1427	898.7	5159	.499	1.4063	1.2649	945.5	1500	.709
2450	1.3966-5	1114.1	10.4303	28.077	766	1.2909	-1.0111	3.7322	1.1378	908.5	5986	.477	1.4082	1.2663	958.5	1527	.706
2500	1.3600-5	1309.2	10.5091	27.899	775	1.3416	-1.0134	4.0778	1.1339	919.1	6908	.457	1.4100	1.2680	972.0	1556	.702
2550	1.3236-5	1522.0	10.5934	27.696	784	1.3955	-1.0160	4.4359	1.1310	930.5	7922	.439	1.4117	1.2701	986.0	1587	.697
2600	1.2875-5	1753.0	10.6831	27.469	792	1.4526	-1.0188	4.8046	1.1288	942.5	9013	.422	1.4133	1.2725	1000.7	1619	.692
2650	1.2517-5	2002.6	10.7782	27.218	801	1.5123	-1.0219	5.1815	1.1273	955.3	10159	.408	1.4150	1.2753	1016.1	1654	.685
2700	1.2161-5	2271.2	10.8786	26.943	809	1.5740	-1.0252	5.5631	1.1265	968.8	11329	.397	1.4167	1.2785	1032.1	1691	.678
2750	1.1808-5	2558.9	10.9842	26.646	818	1.6367	-1.0287	5.9430	1.1261	983.0	12477	.389	1.4186	1.2820	1048.8	1731	.670
2800	1.1459-5	2865.4	11.0946	26.327	826	1.6985	-1.0322	6.3114	1.1263	998.0	13550	.385	1.4205	1.2859	1066.3	1775	.661
2850	1.1113-5	3189.6	11.2094	25.990	834	1.7571	-1.0358	6.6537	1.1269	1013.6	14487	.383	1.4226	1.2901	1084.6	1821	.652
2900	1.0774-5	3530.0	11.3277	25.638	843	1.8092	-1.0392	6.9514	1.1280	1030.0	15227	.385	1.4248	1.2947	1103.5	1871	.642
2950	1.0442-5	3883.7	11.4486	25.276	851	1.8515	-1.0423	7.1832	1.1296	1047.0	15713	.389	1.4271	1.2995	1123.0	1923	.632
3000	1.0119-5	4246.8	11.5707	24.911	859	1.8805	-1.0447	7.3282	1.1317	1064.5	15908	.396	1.4296	1.3046	1142.9	1977	.621

TABLE 14.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.050248; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9078-4	-1518.6	8.1933	28.860	395	1.0000	-1.0000	1.2118	1.3119	583.2	651	.735	1.2116	1.3120	583.2	651	.735
950	3.7021-4	-1457.7	8.2591	28.860	410	1.0000	-1.0000	1.2250	1.3075	598.2	684	.734	1.2247	1.3076	598.2	684	.734
1000	3.5170-4	-1396.1	8.3223	28.860	425	1.0000	-1.0000	1.2375	1.3034	612.8	717	.733	1.2370	1.3036	612.8	716	.733
1050	3.3496-4	-1334.0	8.3830	28.860	439	1.0000	-1.0000	1.2491	1.2998	627.0	748	.733	1.2482	1.3001	627.1	748	.733
1100	3.1973-4	-1271.2	8.4413	28.860	453	1.0000	-1.0000	1.2603	1.2963	641.0	780	.732	1.2590	1.2967	641.1	779	.732
1150	3.0583-4	-1208.0	8.4976	28.860	467	1.0000	-1.0000	1.2711	1.2931	654.5	811	.732	1.2692	1.2936	654.7	810	.732
1200	2.9309-4	-1144.1	8.5519	28.860	481	1.0000	-1.0000	1.2815	1.2900	667.8	842	.731	1.2789	1.2908	668.0	840	.731
1250	2.8136-4	-1079.8	8.6044	28.860	494	1.0000	-1.0000	1.2917	1.2871	680.8	873	.731	1.2882	1.2881	681.1	871	.731
1300	2.7054-4	-1015.0	8.6553	28.860	507	1.0000	-1.0000	1.3017	1.2842	693.5	904	.730	1.2971	1.2855	693.9	900	.730
1350	2.6052-4	-949.6	8.7046	28.860	520	1.0001	-1.0000	1.3116	1.2815	706.0	934	.730	1.3055	1.2832	706.4	930	.730
1400	2.5121-4	-883.8	8.7525	28.859	533	1.0001	-1.0000	1.3213	1.2789	718.2	965	.730	1.3135	1.2810	718.8	959	.730
1450	2.4255-4	-817.5	8.7990	28.859	545	1.0001	-1.0000	1.3311	1.2763	730.2	996	.729	1.3211	1.2789	730.9	988	.729
1500	2.3447-4	-750.7	8.8443	28.859	558	1.0002	-1.0000	1.3410	1.2738	741.9	1027	.728	1.3283	1.2770	742.9	1017	.729
1550	2.2690-4	-683.4	8.8884	28.859	570	1.0003	-1.0000	1.3512	1.2712	753.4	1059	.728	1.3352	1.2752	754.6	1045	.728
1600	2.1981-4	-615.6	8.9315	28.859	582	1.0005	-1.0000	1.3619	1.2687	764.7	1091	.727	1.3417	1.2735	766.2	1074	.728
1650	2.1314-4	-547.2	8.9736	28.858	594	1.0008	-1.0000	1.3734	1.2660	775.8	1125	.725	1.3478	1.2719	777.6	1102	.727
1700	2.0687-4	-478.2	9.0148	28.857	606	1.0012	-1.0000	1.3859	1.2632	786.6	1160	.724	1.3537	1.2704	788.8	1130	.726
1750	2.0095-4	-408.6	9.0551	28.856	618	1.0018	-1.0000	1.4000	1.2602	797.2	1198	.722	1.3592	1.2690	799.9	1157	.726
1800	1.9535-4	-338.2	9.0948	28.854	630	1.0026	-1.0001	1.4163	1.2570	807.5	1238	.720	1.3645	1.2677	810.9	1185	.725
1850	1.9006-4	-266.9	9.1339	28.852	641	1.0038	-1.0001	1.4356	1.2534	817.5	1283	.717	1.3695	1.2665	821.7	1212	.724
1900	1.8503-4	-194.6	9.1724	28.848	653	1.0055	-1.0001	1.4588	1.2494	827.1	1333	.714	1.3742	1.2654	832.4	1239	.724
1950	1.8026-4	-120.9	9.2107	28.843	664	1.0077	-1.0002	1.4870	1.2448	836.5	1391	.710	1.3786	1.2644	843.0	1266	.723
2000	1.7571-4	-45.7	9.2488	28.836	675	1.0108	-1.0003	1.5218	1.2396	845.5	1459	.704	1.3828	1.2634	853.6	1292	.722
2050	1.7137-4	31.4	9.2868	28.827	686	1.0149	-1.0004	1.5648	1.2337	854.1	1539	.697	1.3868	1.2626	864.0	1318	.722
2100	1.6722-4	110.9	9.3252	28.815	697	1.0203	-1.0006	1.6178	1.2271	862.3	1636	.689	1.3905	1.2618	874.4	1344	.721
2150	1.6324-4	193.4	9.3640	28.799	708	1.0274	-1.0009	1.6829	1.2198	870.1	1753	.679	1.3940	1.2612	884.8	1369	.720
2200	1.5941-4	279.4	9.4035	28.778	718	1.0364	-1.0012	1.7619	1.2120	877.7	1896	.667	1.3973	1.2607	895.2	1394	.720
2250	1.5572-4	369.8	9.4442	28.751	729	1.0477	-1.0016	1.8568	1.2039	885.1	2068	.654	1.4003	1.2603	905.5	1420	.719
2300	1.5216-4	465.4	9.4862	28.717	739	1.0615	-1.0021	1.9688	1.1956	892.3	2275	.639	1.4031	1.2600	916.0	1445	.718
2350	1.4870-4	567.0	9.5299	28.674	749	1.0781	-1.0028	2.0986	1.1874	899.5	2521	.624	1.4057	1.2599	926.6	1469	.717
2400	1.4533-4	675.6	9.5756	28.621	759	1.0976	-1.0035	2.2461	1.1796	906.9	2810	.607	1.4081	1.2599	937.2	1494	.715
2450	1.4205-4	791.9	9.6235	28.557	769	1.1200	-1.0045	2.4100	1.1724	914.5	3144	.589	1.4103	1.2601	948.1	1519	.714
2500	1.3883-4	916.8	9.6740	28.481	779	1.1451	-1.0055	2.5884	1.1660	922.5	3526	.572	1.4123	1.2606	959.2	1544	.712
2550	1.3569-4	1050.9	9.7271	28.391	788	1.1727	-1.0067	2.7788	1.1603	930.9	3956	.554	1.4142	1.2612	970.5	1569	.710
2600	1.3259-4	1194.8	9.7830	28.288	798	1.2025	-1.0081	2.9783	1.1555	939.7	4435	.536	1.4158	1.2620	982.0	1595	.708
2650	1.2955-4	1348.9	9.8417	28.171	807	1.2343	-1.0096	3.1841	1.1516	949.0	4963	.518	1.4173	1.2630	993.9	1621	.706
2700	1.2656-4	1513.3	9.9031	28.039	816	1.2676	-1.0112	3.3940	1.1483	958.8	5538	.500	1.4187	1.2642	1006.1	1647	.703
2750	1.2361-4	1688.3	9.9674	27.893	825	1.3024	-1.0130	3.6059	1.1458	969.1	6161	.483	1.4200	1.2657	1018.6	1674	.700
2800	1.2070-4	1873.9	10.0342	27.733	834	1.3384	-1.0149	3.8188	1.1438	979.9	6827	.466	1.4212	1.2673	1031.4	1702	.696
2850	1.1784-4	2070.2	10.1037	27.558	842	1.3754	-1.0169	4.0319	1.1424	991.1	7532	.451	1.4224	1.2692	1044.7	1732	.692
2900	1.1502-4	2277.1	10.1757	27.370	851	1.4135	-1.0191	4.2446	1.1414	1002.8	8268	.437	1.4236	1.2713	1058.3	1762	.688
2950	1.1223-4	2494.6	10.2500	27.168	860	1.4524	-1.0214	4.4564	1.1409	1014.9	9026	.424	1.4248	1.2736	1072.3	1795	.683
3000	1.0949-4	2722.7	10.3267	26.953	868	1.4919	-1.0238	4.6664	1.1406	1027.4	9792	.414	1.4260	1.2760	1086.7	1829	.677

TABLE 14.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.050248; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9078-3	-1518.6	7.5299	28.860	395	1.0000	-1.0000	1.2118	1.3119	583.2	651	.735	1.2116	1.3120	583.2	651	.735
950	3.7021-3	-1457.7	7.5958	28.860	410	1.0000	-1.0000	1.2250	1.3075	598.2	684	.734	1.2247	1.3076	598.2	684	.734
1000	3.5170-3	-1396.1	7.6589	28.860	425	1.0000	-1.0000	1.2375	1.3034	612.8	717	.733	1.2370	1.3036	612.8	716	.733
1050	3.3496-3	-1334.0	7.7196	28.860	439	1.0000	-1.0000	1.2491	1.2998	627.0	748	.733	1.2482	1.3001	627.1	748	.733
1100	3.1973-3	-1271.2	7.7780	28.860	453	1.0000	-1.0000	1.2602	1.2963	641.0	780	.732	1.2590	1.2967	641.1	779	.732
1150	3.0583-3	-1208.0	7.8342	28.860	467	1.0000	-1.0000	1.2710	1.2931	654.5	811	.732	1.2692	1.2936	654.7	810	.732
1200	2.9309-3	-1144.1	7.8885	28.860	481	1.0000	-1.0000	1.2815	1.2900	667.8	842	.731	1.2789	1.2908	668.0	840	.731
1250	2.8136-3	-1079.8	7.9410	28.860	494	1.0000	-1.0000	1.2916	1.2871	680.8	873	.731	1.2882	1.2881	681.1	871	.731
1300	2.7054-3	-1015.0	7.9919	28.860	507	1.0000	-1.0000	1.3015	1.2843	693.5	903	.730	1.2971	1.2855	693.9	900	.730
1350	2.6052-3	-949.7	8.0412	28.860	520	1.0000	-1.0000	1.3112	1.2816	706.0	934	.730	1.3055	1.2832	706.4	930	.730
1400	2.5122-3	-883.9	8.0891	28.860	533	1.0000	-1.0000	1.3207	1.2790	718.2	964	.730	1.3135	1.2810	718.8	959	.730
1450	2.4255-3	-817.6	8.1356	28.860	545	1.0001	-1.0000	1.3301	1.2765	730.2	995	.729	1.3211	1.2789	730.9	988	.729
1500	2.3447-3	-750.9	8.1808	28.859	558	1.0001	-1.0000	1.3395	1.2741	742.0	1025	.729	1.3283	1.2770	742.9	1017	.729
1550	2.2690-3	-683.7	8.2249	28.859	570	1.0002	-1.0000	1.3488	1.2717	753.6	1056	.728	1.3352	1.2752	754.6	1045	.728
1600	2.1981-3	-616.0	8.2679	28.859	582	1.0003	-1.0000	1.3583	1.2694	764.9	1088	.727	1.3417	1.2735	766.2	1074	.728
1650	2.1315-3	-547.8	8.3098	28.859	594	1.0004	-1.0000	1.3680	1.2670	776.1	1119	.726	1.3478	1.2719	777.6	1102	.727
1700	2.0688-3	-479.2	8.3508	28.858	606	1.0006	-1.0000	1.3780	1.2647	787.0	1152	.726	1.3537	1.2704	788.8	1130	.726
1750	2.0096-3	-410.0	8.3909	28.858	618	1.0008	-1.0000	1.3885	1.2623	797.8	1185	.724	1.3592	1.2690	799.9	1157	.726
1800	1.9537-3	-340.3	8.4302	28.857	630	1.0012	-1.0000	1.3998	1.2599	808.3	1219	.723	1.3645	1.2677	810.8	1185	.725
1850	1.9009-3	-270.0	8.4687	28.856	641	1.0016	-1.0000	1.4120	1.2574	818.7	1254	.722	1.3695	1.2665	821.6	1212	.725
1900	1.8507-3	-199.1	8.5065	28.855	653	1.0023	-1.0001	1.4254	1.2547	828.8	1292	.720	1.3742	1.2653	832.3	1239	.724
1950	1.8032-3	-127.4	8.5437	28.853	664	1.0031	-1.0001	1.4406	1.2519	838.7	1331	.718	1.3787	1.2643	842.9	1265	.723
2000	1.7579-3	-55.0	8.5804	28.850	675	1.0042	-1.0001	1.4579	1.2488	848.4	1375	.716	1.3829	1.2633	853.3	1292	.723
2050	1.7148-3	18.4	8.6166	28.846	686	1.0057	-1.0002	1.4779	1.2455	857.9	1421	.713	1.3869	1.2624	863.6	1318	.722
2100	1.6737-3	92.9	8.6525	28.842	697	1.0077	-1.0002	1.5013	1.2419	867.1	1474	.710	1.3906	1.2615	873.9	1344	.721
2150	1.6345-3	168.6	8.6882	28.836	708	1.0102	-1.0003	1.5288	1.2379	876.0	1532	.706	1.3942	1.2607	884.1	1369	.721
2200	1.5969-3	245.8	8.7237	28.828	718	1.0135	-1.0004	1.5612	1.2335	884.7	1599	.701	1.3976	1.2600	894.2	1394	.720
2250	1.5609-3	324.8	8.7592	28.818	729	1.0176	-1.0006	1.5996	1.2288	893.1	1676	.696	1.4007	1.2594	904.2	1419	.720
2300	1.5263-3	405.9	8.7948	28.805	740	1.0226	-1.0008	1.6446	1.2236	901.3	1764	.689	1.4037	1.2589	914.2	1444	.719
2350	1.4930-3	489.4	8.8307	28.789	750	1.0289	-1.0010	1.6974	1.2182	909.3	1867	.682	1.4065	1.2584	924.2	1469	.718
2400	1.4609-3	575.8	8.8671	28.770	760	1.0365	-1.0013	1.7587	1.2125	917.0	1986	.673	1.4091	1.2580	934.1	1493	.717
2450	1.4298-3	665.4	8.9041	28.745	770	1.0456	-1.0017	1.8292	1.2066	924.7	2122	.664	1.4115	1.2577	944.1	1518	.716
2500	1.3998-3	758.8	8.9418	28.716	780	1.0563	-1.0021	1.9091	1.2006	932.3	2279	.654	1.4138	1.2575	954.1	1542	.715
2550	1.3707-3	856.5	8.9805	28.680	790	1.0687	-1.0026	1.9985	1.1948	939.8	2459	.642	1.4159	1.2575	964.1	1566	.714
2600	1.3423-3	958.8	9.0202	28.638	800	1.0827	-1.0032	2.0971	1.1891	947.4	2661	.631	1.4178	1.2575	974.3	1591	.713
2650	1.3147-3	1066.3	9.0612	28.589	810	1.0984	-1.0039	2.2039	1.1838	955.2	2887	.618	1.4196	1.2576	984.5	1615	.712
2700	1.2878-3	1179.4	9.1034	28.532	819	1.1156	-1.0047	2.3178	1.1789	963.1	3136	.605	1.4213	1.2579	994.8	1639	.710
2750	1.2615-3	1298.2	9.1470	28.467	829	1.1342	-1.0056	2.4373	1.1745	971.3	3410	.592	1.4228	1.2583	1005.3	1663	.709
2800	1.2358-3	1423.1	9.1921	28.393	838	1.1540	-1.0066	2.5608	1.1706	979.7	3707	.579	1.4242	1.2588	1016.0	1687	.707
2850	1.2106-3	1554.3	9.2385	28.311	847	1.1748	-1.0076	2.6866	1.1672	988.4	4027	.565	1.4254	1.2595	1026.7	1712	.706
2900	1.1859-3	1691.8	9.2863	28.219	856	1.1963	-1.0087	2.8133	1.1644	997.4	4368	.552	1.4266	1.2603	1037.7	1736	.704
2950	1.1616-3	1835.6	9.3355	28.120	865	1.2185	-1.0099	2.9394	1.1620	1006.8	4732	.538	1.4277	1.2612	1048.9	1761	.702
3000	1.1379-3	1985.7	9.3859	28.011	874	1.2410	-1.0112	3.0639	1.1602	1016.4	5116	.524	1.4287	1.2622	1060.2	1786	.699

TABLE 14.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.050248; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9539-2	-1518.6	7.0662	28.860	395	1.0000	-1.0000	1.2118	1.3119	583.2	651	.735	1.2116	1.3120	583.2	651	.735
950	1.8511-2	-1457.7	7.1321	28.860	410	1.0000	-1.0000	1.2250	1.3075	598.2	684	.734	1.2247	1.3076	598.2	684	.734
1000	1.7585-2	-1396.1	7.1952	28.860	425	1.0000	-1.0000	1.2375	1.3034	612.8	717	.733	1.2370	1.3036	612.8	716	.733
1050	1.6748-2	-1334.0	7.2559	28.860	439	1.0000	-1.0000	1.2491	1.2998	627.0	748	.733	1.2482	1.3001	627.1	748	.733
1100	1.5987-2	-1271.2	7.3143	28.860	453	1.0000	-1.0000	1.2602	1.2963	641.0	780	.732	1.2590	1.2967	641.1	779	.732
1150	1.5291-2	-1208.0	7.3705	28.860	467	1.0000	-1.0000	1.2710	1.2931	654.5	811	.732	1.2692	1.2936	654.7	810	.732
1200	1.4654-2	-1144.1	7.4249	28.860	481	1.0000	-1.0000	1.2814	1.2900	667.8	842	.731	1.2789	1.2908	668.0	840	.731
1250	1.4068-2	-1079.8	7.4774	28.860	494	1.0000	-1.0000	1.2916	1.2871	680.8	873	.731	1.2882	1.2881	681.1	871	.731
1300	1.3527-2	-1015.0	7.5282	28.860	507	1.0000	-1.0000	1.3014	1.2843	693.5	903	.730	1.2971	1.2855	693.9	900	.730
1350	1.3026-2	-949.7	7.5775	28.860	520	1.0000	-1.0000	1.3110	1.2816	706.0	934	.730	1.3055	1.2832	706.4	930	.730
1400	1.2561-2	-883.9	7.6254	28.860	533	1.0000	-1.0000	1.3205	1.2791	718.3	964	.730	1.3135	1.2810	718.8	959	.730
1450	1.2128-2	-817.6	7.6719	28.860	545	1.0000	-1.0000	1.3297	1.2766	730.3	995	.729	1.3211	1.2789	730.9	988	.729
1500	1.1723-2	-750.9	7.7171	28.860	558	1.0001	-1.0000	1.3389	1.2742	742.1	1025	.729	1.3283	1.2770	742.9	1017	.729
1550	1.1345-2	-683.7	7.7611	28.860	570	1.0001	-1.0000	1.3479	1.2719	753.6	1056	.728	1.3352	1.2751	754.6	1045	.728
1600	1.0991-2	-616.1	7.8041	28.859	582	1.0001	-1.0000	1.3570	1.2696	765.0	1086	.727	1.3417	1.2735	766.2	1074	.728
1650	1.0658-2	-548.0	7.8460	28.859	594	1.0002	-1.0000	1.3661	1.2674	776.2	1117	.727	1.3478	1.2719	777.6	1102	.727
1700	1.0344-2	-479.5	7.8869	28.859	606	1.0003	-1.0000	1.3753	1.2652	787.2	1149	.726	1.3537	1.2704	788.8	1130	.726
1750	1.0048-2	-410.5	7.9269	28.859	618	1.0005	-1.0000	1.3847	1.2630	798.0	1180	.725	1.3592	1.2690	799.9	1157	.726
1800	9.7691-3	-341.0	7.9660	28.858	630	1.0007	-1.0000	1.3943	1.2609	808.6	1212	.724	1.3645	1.2677	810.8	1185	.725
1850	9.5048-3	-271.1	8.0044	28.858	641	1.0009	-1.0000	1.4044	1.2587	819.1	1245	.723	1.3695	1.2664	821.6	1212	.725
1900	9.2544-3	-200.6	8.0420	28.857	653	1.0013	-1.0000	1.4150	1.2564	829.3	1279	.722	1.3742	1.2653	832.3	1239	.724
1950	9.0168-3	-129.6	8.0789	28.856	664	1.0017	-1.0001	1.4264	1.2541	839.4	1314	.721	1.3787	1.2642	842.8	1265	.723
2000	8.7909-3	-57.9	8.1151	28.854	675	1.0023	-1.0001	1.4387	1.2518	849.4	1350	.719	1.3829	1.2632	853.2	1292	.723
2050	8.5760-3	14.3	8.1508	28.852	686	1.0031	-1.0001	1.4523	1.2493	859.1	1388	.718	1.3869	1.2623	863.5	1318	.722
2100	8.3710-3	87.3	8.1860	28.850	697	1.0041	-1.0001	1.4673	1.2467	868.6	1429	.716	1.3907	1.2614	873.7	1343	.721
2150	8.1755-3	161.1	8.2207	28.847	708	1.0053	-1.0002	1.4843	1.2439	878.0	1472	.714	1.3943	1.2606	883.8	1369	.721
2200	7.9885-3	235.8	8.2551	28.843	719	1.0069	-1.0002	1.5035	1.2410	887.1	1519	.711	1.3976	1.2598	893.9	1394	.720
2250	7.8096-3	311.5	8.2891	28.837	729	1.0090	-1.0003	1.5254	1.2378	896.1	1571	.708	1.4008	1.2592	903.8	1419	.720
2300	7.6381-3	388.4	8.3229	28.831	740	1.0115	-1.0004	1.5504	1.2344	904.9	1628	.705	1.4038	1.2585	913.7	1444	.719
2350	7.4735-3	466.6	8.3565	28.823	750	1.0146	-1.0005	1.5792	1.2308	913.4	1691	.701	1.4067	1.2580	923.5	1469	.718
2400	7.3153-3	546.4	8.3901	28.813	761	1.0183	-1.0007	1.6123	1.2269	921.8	1762	.696	1.4094	1.2575	933.2	1493	.718
2450	7.1630-3	627.9	8.4237	28.801	771	1.0229	-1.0008	1.6501	1.2228	930.0	1841	.691	1.4119	1.2570	942.9	1518	.717
2500	7.0161-3	711.5	8.4575	28.786	781	1.0283	-1.0011	1.6932	1.2185	938.0	1931	.685	1.4143	1.2566	952.6	1542	.716
2550	6.8743-3	797.3	8.4915	28.768	791	1.0347	-1.0013	1.7419	1.2141	945.9	2032	.678	1.4165	1.2563	962.2	1566	.715
2600	6.7371-3	885.7	8.5258	28.747	801	1.0421	-1.0016	1.7965	1.2095	953.7	2145	.671	1.4186	1.2561	971.9	1590	.714
2650	6.6041-3	977.1	8.5606	28.721	811	1.0507	-1.0020	1.8571	1.2049	961.4	2271	.663	1.4205	1.2559	981.6	1614	.713
2700	6.4751-3	1071.6	8.5960	28.692	820	1.0604	-1.0024	1.9238	1.2004	969.1	2412	.654	1.4223	1.2559	991.3	1638	.712
2750	6.3497-3	1169.5	8.6319	28.657	830	1.0713	-1.0029	1.9960	1.1960	976.9	2567	.646	1.4240	1.2559	1001.0	1662	.711
2800	6.2277-3	1271.2	8.6686	28.617	840	1.0832	-1.0035	2.0734	1.1918	984.6	2736	.636	1.4256	1.2560	1010.8	1686	.710
2850	6.1087-3	1376.9	8.7060	28.572	849	1.0962	-1.0041	2.1551	1.1878	992.5	2920	.627	1.4271	1.2561	1020.7	1709	.709
2900	5.9926-3	1486.8	8.7442	28.521	858	1.1101	-1.0048	2.2402	1.1842	1000.6	3119	.617	1.4284	1.2564	1030.6	1733	.708
2950	5.8792-3	1601.0	8.7832	28.464	868	1.1249	-1.0056	2.3278	1.1809	1008.8	3331	.606	1.4297	1.2568	1040.7	1756	.706
3000	5.7684-3	1719.6	8.8231	28.400	877	1.1402	-1.0064	2.4167	1.1780	1017.2	3557	.596	1.4309	1.2572	1050.8	1779	.705

TABLE 14C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.050248; EQUIV.RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7504;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.959-5	-2480.3	7.1323	28.860	1.0582	1.834-5	30.098	130	1.000	-1.000	0.9820	1.3914	277	174	.734	200
220	1.777-5	-2455.9	7.2483	28.860	1.5602	1.666-5	30.068	141	1.000	-1.000	0.9853	1.3901	291	190	.731	220
240	1.589-5	-2395.5	7.5084	28.860	5.8501	1.512-5	29.776	149	1.000	-1.000	1.0003	1.3872	305	202	.735	240
						PRESSURE = 0.10 ATM										
200	1.960-4	-2480.5	6.5359	28.860	1.0232	1.834-4	30.100	130	1.000	-1.000	0.9819	1.3914	277	174	.734	200
220	1.781-4	-2459.6	6.6354	28.860	1.0832	1.667-4	30.097	141	1.000	-1.000	0.9841	1.3903	291	190	.730	220
240	1.629-4	-2435.0	6.7421	28.860	1.5000	1.527-4	30.067	151	1.000	-1.000	0.9876	1.3889	304	206	.727	240
260	1.478-4	-2387.1	6.9325	28.860	3.9464	1.400-4	29.867	160	1.000	-1.000	0.9989	1.3863	317	219	.730	260
280	1.263-4	-2224.5	7.5310	28.860	12.4968	1.259-4	28.922	161	1.000	-1.000	1.0445	1.3798	333	225	.751	280
						PRESSURE = 1.00 ATM										
200	1.959-3	-2480.5	5.9405	28.860	1.0197	1.834-3	30.100	130	1.000	-1.000	0.9819	1.3914	277	174	.734	200
220	1.781-3	-2460.0	6.0383	28.860	1.0358	1.667-3	30.099	141	1.000	-1.000	0.9839	1.3903	291	190	.730	220
240	1.632-3	-2438.9	6.1301	28.860	1.0878	1.528-3	30.097	152	1.000	-1.000	0.9864	1.3890	303	206	.727	240
260	1.504-3	-2415.3	6.2245	28.860	1.3337	1.410-3	30.076	162	1.000	-1.000	0.9899	1.3875	316	221	.724	260
280	1.386-3	-2361.1	6.4238	28.860	2.1350	1.305-3	29.982	171	1.000	-1.000	0.9969	1.3854	328	236	.725	280
298	1.274-3	-2309.1	6.6032	28.860	3.8587	1.215-3	29.724	178	1.000	-1.000	1.0110	1.3825	340	246	.731	298
300	1.261-3	-2301.8	6.6279	28.860	4.1410	1.206-3	29.680	178	1.000	-1.000	1.0133	1.3821	341	247	.732	300
320	1.099-3	-2173.6	7.0396	28.860	1.0542	1.099-3	28.860	180	1.000	-1.000	1.0542	1.3760	356	253	.751	320
						PRESSURE = 10.00 ATM										
200	1.957-2	-2480.5	5.3452	28.860	1.0193	1.834-2	30.100	130	1.000	-1.000	0.9819	1.3914	277	174	.734	200
220	1.779-2	-2460.0	5.4428	28.860	1.0310	1.667-2	30.100	141	1.000	-1.000	0.9839	1.3903	291	190	.730	220
240	1.631-2	-2439.3	5.5332	28.860	1.0468	1.528-2	30.099	152	1.000	-1.000	0.9863	1.3890	303	206	.727	240
260	1.506-2	-2418.0	5.6181	28.860	1.0823	1.411-2	30.097	162	1.000	-1.000	0.9890	1.3876	316	222	.724	260
280	1.397-2	-2373.5	5.7821	28.860	1.2897	1.310-2	30.088	172	1.000	-1.000	0.9923	1.3860	327	237	.722	280
298	1.309-2	-2348.8	5.8674	28.860	1.4500	1.229-2	30.062	181	1.000	-1.000	0.9962	1.3843	338	250	.722	298
300	1.301-2	-2346.1	5.8764	28.860	1.4749	1.221-2	30.058	182	1.000	-1.000	0.9967	1.3841	339	251	.722	300
320	1.211-2	-2312.9	5.9836	28.860	1.9042	1.142-2	29.975	191	1.000	-1.000	1.0037	1.3819	350	264	.725	320
340	1.121-2	-2266.9	6.1226	28.860	2.7907	1.067-2	29.779	198	1.000	-1.000	1.0160	1.3789	362	276	.730	340
360	1.023-2	-2195.7	6.3256	28.860	4.5213	9.942-3	29.369	203	1.000	-1.000	1.0384	1.3748	374	286	.740	360
380	9.255-3	-2110.0	6.5584	28.860	1.0664	9.255-3	28.860	208	1.000	-1.000	1.0664	1.3701	387	296	.750	380
						PRESSURE = 50.00 ATM										
200	9.731-2	-2480.5	4.9291	28.860	1.0193	9.170-2	30.100	130	1.000	-1.000	0.9819	1.3914	277	174	.734	200
220	8.852-2	-2460.0	5.0267	28.860	1.0306	8.337-2	30.100	141	1.000	-1.000	0.9839	1.3903	291	190	.730	220
240	8.119-2	-2439.3	5.1169	28.860	1.0431	7.642-2	30.100	152	1.000	-1.000	0.9863	1.3890	303	206	.727	240
260	7.497-2	-2418.3	5.2010	28.860	1.0600	7.054-2	30.099	162	1.000	-1.000	0.9889	1.3876	316	222	.724	260
280	6.966-2	-2374.6	5.3619	28.860	1.2160	6.550-2	30.097	172	1.000	-1.000	0.9919	1.3860	327	237	.722	280
298	6.541-2	-2352.3	5.4392	28.860	1.2488	6.150-2	30.092	181	1.000	-1.000	0.9949	1.3845	338	250	.722	298
300	6.500-2	-2349.9	5.4469	28.860	1.2539	6.112-2	30.091	182	1.000	-1.000	0.9953	1.3843	339	251	.722	300
320	6.087-2	-2324.1	5.5303	28.860	1.3400	5.727-2	30.075	192	1.000	-1.000	0.9994	1.3824	350	265	.722	320
340	5.713-2	-2295.8	5.6161	28.860	1.5092	5.383-2	30.036	200	1.000	-1.000	1.0047	1.3803	360	278	.724	340
360	5.361-2	-2262.9	5.7100	28.860	1.8087	5.070-2	29.954	209	1.000	-1.000	1.0122	1.3779	371	291	.726	360
380	5.015-2	-2222.2	5.8200	28.860	2.2998	4.778-2	29.799	216	1.000	-1.000	1.0231	1.3750	382	303	.730	380
400	4.660-2	-2169.0	5.9561	28.860	3.0686	4.499-2	29.532	223	1.000	-1.000	1.0395	1.3714	393	315	.735	400
420	4.278-2	-2096.7	6.1324	28.860	4.2543	4.222-2	29.102	227	1.000	-1.000	1.0641	1.3670	405	325	.744	420

TABLE 15A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.066997; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.8269;
DRY AIR; GASEOUS COMPOSITION: CO2= .12842; H2O= .13453; N2= .72832; O2= .00000; AR= .00874

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7565-3	8.7826-2	-2985.0	7.8576	7.1935	6.5294	5.8652	5.4010	1.0467	1.3804	282.2	114	151	.7857	200
210	1.6729-3	8.3644-2	-2974.6	7.9087	7.2446	6.5805	5.9164	5.4522	1.0482	1.3796	289.1	119	160	.7811	210
220	1.5968-3	7.9842-2	-2964.1	7.9575	7.2934	6.6293	5.9652	5.5009	1.0498	1.3788	295.8	125	168	.7770	220
230	1.5274-3	7.6370-2	-2953.6	8.0042	7.3401	6.6760	6.0119	5.5477	1.0515	1.3780	302.3	130	177	.7735	230
240	1.4638-3	7.3188-2	-2943.0	8.0490	7.3849	6.7208	6.0566	5.5924	1.0532	1.3771	308.8	135	185	.7705	240
250	1.4052-3	7.0261-2	-2932.5	8.0920	7.4279	6.7638	6.0997	5.6355	1.0550	1.3763	315.0	140	193	.7679	250
260	1.3512-3	6.7558-2	-2921.9	8.1335	7.4693	6.8052	6.1411	5.6769	1.0569	1.3753	321.2	146	201	.7657	260
270	1.3011-3	6.5056-2	-2911.4	8.1734	7.5093	6.8451	6.1810	5.7168	1.0588	1.3744	327.2	151	209	.7640	270
280	1.2547-3	6.2733-2	-2900.8	8.2119	7.5478	6.8837	6.2195	5.7553	1.0608	1.3734	333.0	156	217	.7627	280
290	1.2114-3	6.0570-2	-2890.1	8.2492	7.5851	6.9209	6.2568	5.7926	1.0628	1.3724	338.8	161	224	.7617	290
298	1.1783-3	5.8914-2	-2881.5	8.2787	7.6145	6.9504	6.2863	5.8221	1.0646	1.3716	343.4	165	230	.7611	298
300	1.1710-3	5.8551-2	-2879.5	8.2853	7.6211	6.9570	6.2929	5.8287	1.0650	1.3714	344.5	166	232	.7610	300
310	1.1332-3	5.6662-2	-2868.8	8.3202	7.6561	6.9920	6.3278	5.8636	1.0671	1.3704	350.0	171	239	.7610	310
320	1.0978-3	5.4891-2	-2858.2	8.3541	7.6900	7.0259	6.3617	5.8975	1.0694	1.3693	355.5	175	246	.7611	320
330	1.0646-3	5.3228-2	-2847.5	8.3871	7.7229	7.0588	6.3947	5.9305	1.0716	1.3683	360.9	180	253	.7612	330
340	1.0332-3	5.1662-2	-2836.7	8.4191	7.7550	7.0908	6.4267	5.9625	1.0740	1.3672	366.2	185	261	.7614	340
350	1.0037-3	5.0186-2	-2826.0	8.4503	7.7861	7.1220	6.4579	5.9937	1.0764	1.3661	371.4	189	268	.7616	350
360	9.7584-4	4.8792-2	-2815.2	8.4806	7.8165	7.1524	6.4882	6.0240	1.0788	1.3649	376.5	194	275	.7610	360
370	9.4947-4	4.7473-2	-2804.4	8.5102	7.8461	7.1820	6.5178	6.0536	1.0813	1.3638	381.5	199	282	.7604	370
380	9.2448-4	4.6224-2	-2793.6	8.5391	7.8749	7.2108	6.5467	6.0825	1.0838	1.3626	386.5	203	290	.7596	380
390	9.0078-4	4.5039-2	-2782.7	8.5673	7.9031	7.2390	6.5749	6.1107	1.0864	1.3615	391.3	208	297	.7588	390
400	8.7826-4	4.3913-2	-2771.8	8.5948	7.9307	7.2665	6.6024	6.1382	1.0890	1.3603	396.2	212	304	.7580	400
410	8.5684-4	4.2842-2	-2760.9	8.6217	7.9576	7.2935	6.6293	6.1651	1.0916	1.3591	400.9	216	312	.7577	410
420	8.3644-4	4.1822-2	-2750.0	8.6481	7.9839	7.3198	6.6557	6.1915	1.0943	1.3579	405.6	220	319	.7574	420
430	8.1698-4	4.0849-2	-2739.1	8.6738	8.0097	7.3456	6.6815	6.2173	1.0971	1.3567	410.2	225	326	.7572	430
440	7.9842-4	3.9921-2	-2728.1	8.6991	8.0350	7.3708	6.7067	6.2425	1.0998	1.3555	414.8	229	333	.7570	440
450	7.8067-4	3.9034-2	-2717.1	8.7238	8.0597	7.3956	6.7315	6.2673	1.1026	1.3542	419.2	233	339	.7570	450
460	7.6370-4	3.8185-2	-2706.0	8.7481	8.0840	7.4199	6.7557	6.2915	1.1054	1.3530	423.7	237	346	.7569	460
470	7.4745-4	3.7373-2	-2695.0	8.7719	8.1078	7.4437	6.7795	6.3153	1.1083	1.3518	428.1	241	353	.7569	470
480	7.3188-4	3.6594-2	-2683.9	8.7953	8.1311	7.4670	6.8029	6.3387	1.1112	1.3506	432.4	245	360	.7570	480
490	7.1695-4	3.5847-2	-2672.7	8.8182	8.1541	7.4900	6.8258	6.3616	1.1141	1.3493	436.7	249	367	.7570	490
500	7.0261-4	3.5130-2	-2661.6	8.8408	8.1766	7.5125	6.8484	6.3842	1.1171	1.3481	440.9	253	373	.7571	500
510	6.8883-4	3.4442-2	-2650.4	8.8629	8.1988	7.5347	6.8705	6.4063	1.1200	1.3468	445.1	257	380	.7569	510
520	6.7558-4	3.3779-2	-2639.2	8.8847	8.2206	7.5564	6.8923	6.4281	1.1230	1.3456	449.2	261	387	.7566	520
530	6.6284-4	3.3142-2	-2627.9	8.9061	8.2420	7.5778	6.9137	6.4495	1.1260	1.3443	453.3	265	394	.7564	530
540	6.5056-4	3.2528-2	-2616.7	8.9272	8.2630	7.5989	6.9348	6.4706	1.1291	1.3431	457.4	269	401	.7561	540
550	6.3873-4	3.1937-2	-2605.3	8.9479	8.2838	7.6197	6.9555	6.4913	1.1321	1.3419	461.4	272	408	.7557	550
560	6.2733-4	3.1366-2	-2594.0	8.9683	8.3042	7.6401	6.9760	6.5118	1.1352	1.3406	465.3	276	415	.7554	560
570	6.1632-4	3.0816-2	-2582.6	8.9885	8.3243	7.6602	6.9961	6.5319	1.1383	1.3394	469.3	280	422	.7550	570
580	6.0570-4	3.0285-2	-2571.2	9.0083	8.3442	7.6800	7.0159	6.5517	1.1413	1.3382	473.1	284	429	.7546	580
590	5.9543-4	2.9771-2	-2559.8	9.0278	8.3637	7.6996	7.0355	6.5712	1.1445	1.3369	477.0	287	436	.7542	590

TABLE 15A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.066997; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.8269;
DRY AIR; GASEOUS COMPOSITION: CO2= .12842; H2O= .13453; N2= .72832; O2= .00000; AR= .00874

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8551-4	2.9275-2	-2548.4	9.0471	8.3830	7.7188	7.0547	6.5905	1.1476	1.3357	480.8	291	443	.7538	600
610	5.7591-4	2.8795-2	-2536.9	9.0661	8.4020	7.7378	7.0737	6.6095	1.1507	1.3345	484.6	295	450	.7533	610
620	5.6662-4	2.8331-2	-2525.3	9.0848	8.4207	7.7566	7.0924	6.6282	1.1538	1.3333	488.3	298	457	.7528	620
630	5.5762-4	2.7881-2	-2513.8	9.1033	8.4392	7.7751	7.1109	6.6467	1.1570	1.3321	492.0	302	465	.7524	630
640	5.4891-4	2.7446-2	-2502.2	9.1216	8.4574	7.7933	7.1292	6.6650	1.1601	1.3309	495.7	306	472	.7519	640
650	5.4047-4	2.7023-2	-2490.6	9.1396	8.4754	7.8113	7.1472	6.6830	1.1633	1.3297	499.3	309	479	.7514	650
660	5.3228-4	2.6614-2	-2478.9	9.1573	8.4932	7.8291	7.1650	6.7008	1.1664	1.3285	502.9	313	486	.7509	660
670	5.2433-4	2.6217-2	-2467.3	9.1749	8.5108	7.8467	7.1825	6.7183	1.1696	1.3273	506.5	316	493	.7504	670
680	5.1662-4	2.5831-2	-2455.5	9.1923	8.5281	7.8640	7.1999	6.7357	1.1728	1.3261	510.0	320	500	.7499	680
690	5.0914-4	2.5457-2	-2443.8	9.2094	8.5453	7.8812	7.2170	6.7528	1.1759	1.3250	513.5	323	507	.7494	690
700	5.0186-4	2.5093-2	-2432.0	9.2263	8.5622	7.8981	7.2340	6.7698	1.1791	1.3238	517.0	327	514	.7489	700
710	4.9479-4	2.4740-2	-2420.2	9.2431	8.5790	7.9148	7.2507	6.7865	1.1822	1.3227	520.4	330	521	.7484	710
720	4.8792-4	2.4396-2	-2408.4	9.2597	8.5955	7.9314	7.2673	6.8031	1.1854	1.3216	523.9	334	529	.7479	720
730	4.8124-4	2.4062-2	-2396.5	9.2760	8.6119	7.9478	7.2836	6.8194	1.1885	1.3204	527.3	337	536	.7474	730
740	4.7473-4	2.3737-2	-2384.6	9.2922	8.6281	7.9640	7.2998	6.8356	1.1917	1.3193	530.7	340	543	.7470	740
750	4.6840-4	2.3420-2	-2372.7	9.3082	8.6441	7.9800	7.3159	6.8517	1.1948	1.3182	534.0	344	550	.7465	750
760	4.6224-4	2.3112-2	-2360.7	9.3241	8.6600	7.9958	7.3317	6.8675	1.1979	1.3171	537.3	347	557	.7461	760
770	4.5624-4	2.2812-2	-2348.7	9.3398	8.6756	8.0115	7.3474	6.8832	1.2010	1.3161	540.6	350	564	.7456	770
780	4.5039-4	2.2519-2	-2336.7	9.3553	8.6912	8.0270	7.3629	6.8987	1.2041	1.3150	543.9	354	571	.7452	780
790	4.4469-4	2.2234-2	-2324.6	9.3706	8.7065	8.0424	7.3783	6.9141	1.2072	1.3139	547.2	357	578	.7448	790
800	4.3913-4	2.1956-2	-2312.5	9.3858	8.7217	8.0576	7.3935	6.9293	1.2102	1.3129	550.4	360	586	.7444	800
810	4.3371-4	2.1685-2	-2300.4	9.4009	8.7368	8.0726	7.4085	6.9443	1.2133	1.3119	553.6	363	593	.7440	810
820	4.2842-4	2.1421-2	-2288.3	9.4158	8.7517	8.0875	7.4234	6.9592	1.2163	1.3108	556.8	367	600	.7437	820
830	4.2326-4	2.1163-2	-2276.1	9.4306	8.7664	8.1023	7.4382	6.9740	1.2193	1.3098	560.0	370	607	.7434	830
840	4.1822-4	2.0911-2	-2263.9	9.4452	8.7811	8.1169	7.4528	6.9886	1.2223	1.3088	563.1	373	614	.7431	840
850	4.1330-4	2.0665-2	-2251.7	9.4597	8.7955	8.1314	7.4673	7.0031	1.2253	1.3079	566.2	376	621	.7428	850
860	4.0849-4	2.0425-2	-2239.4	9.4740	8.8099	8.1458	7.4816	7.0174	1.2283	1.3069	569.4	379	628	.7425	860
870	4.0380-4	2.0190-2	-2227.1	9.4882	8.8241	8.1600	7.4959	7.0317	1.2312	1.3059	572.4	383	635	.7423	870
880	3.9921-4	1.9960-2	-2214.8	9.5023	8.8382	8.1741	7.5099	7.0457	1.2341	1.3050	575.5	386	641	.7420	880
890	3.9472-4	1.9736-2	-2202.4	9.5163	8.8522	8.1880	7.5239	7.0597	1.2370	1.3041	578.6	389	648	.7417	890
900	3.9034-4	1.9517-2	-2190.0	9.5301	8.8660	8.2019	7.5377	7.0735	1.2399	1.3031	581.6	392	655	.7415	900
910	3.8605-4	1.9302-2	-2177.6	9.5438	8.8797	8.2156	7.5515	7.0873	1.2427	1.3022	584.6	395	662	.7412	910
920	3.8185-4	1.9093-2	-2165.2	9.5574	8.8933	8.2292	7.5651	7.1009	1.2455	1.3014	587.6	398	669	.7410	920
930	3.7775-4	1.8887-2	-2152.7	9.5709	8.9068	8.2427	7.5785	7.1143	1.2483	1.3005	590.6	401	676	.7407	930
940	3.7373-4	1.8686-2	-2140.2	9.5843	8.9202	8.2560	7.5919	7.1277	1.2511	1.2996	593.6	404	683	.7405	940
950	3.6979-4	1.8490-2	-2127.7	9.5975	8.9334	8.2693	7.6052	7.1410	1.2538	1.2988	596.5	407	690	.7403	950
960	3.6594-4	1.8297-2	-2115.1	9.6107	8.9465	8.2824	7.6183	7.1541	1.2565	1.2979	599.5	410	696	.7401	960
970	3.6217-4	1.8108-2	-2102.6	9.6237	8.9596	8.2955	7.6313	7.1671	1.2592	1.2971	602.4	413	703	.7399	970
980	3.5847-4	1.7924-2	-2089.9	9.6366	8.9725	8.3084	7.6443	7.1801	1.2618	1.2963	605.3	416	710	.7397	980
990	3.5485-4	1.7743-2	-2077.3	9.6495	8.9853	8.3212	7.6571	7.1929	1.2644	1.2955	608.2	419	717	.7395	990

TABLE 15A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.066997; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.8269;
DRY AIR; GASEOUS COMPOSITION: CO2= .12842; H2O= .13453; N2= .72832; O2= .00000; AR= .00874

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
1000	3.5130-4	1.7565-2	-2064.7	9.6622	8.9981	8.3339	7.6698	7.2056	1.2669	1.2948	611.1	422	723	.7393	1000
1050	3.3457-4	1.6729-2	-2001.0	9.7243	9.0602	8.3960	7.7319	7.2677	1.2791	1.2912	625.3	437	757	.7383	1050
1100	3.1937-4	1.5968-2	-1936.8	9.7841	9.1199	8.4558	7.7917	7.3275	1.2906	1.2878	639.2	451	789	.7375	1100
1150	3.0548-4	1.5274-2	-1872.0	9.8417	9.1776	8.5134	7.8493	7.3851	1.3017	1.2847	652.8	465	822	.7367	1150
1200	2.9275-4	1.4638-2	-1806.6	9.8973	9.2332	8.5690	7.9049	7.4407	1.3122	1.2817	666.1	479	854	.7360	1200
1250	2.8104-4	1.4052-2	-1740.7	9.9511	9.2869	8.6228	7.9587	7.4945	1.3222	1.2790	679.1	492	885	.7354	1250
1300	2.7023-4	1.3512-2	-1674.4	10.0031	9.3390	8.6749	8.0107	7.5465	1.3317	1.2765	691.8	506	917	.7348	1300
1350	2.6022-4	1.3011-2	-1607.6	10.0535	9.3894	8.7253	8.0612	7.5970	1.3407	1.2741	704.3	519	948	.7342	1350
1400	2.5093-4	1.2547-2	-1540.3	10.1025	9.4383	8.7742	8.1101	7.6459	1.3493	1.2719	716.6	532	978	.7336	1400
1450	2.4228-4	1.2114-2	-1472.7	10.1500	9.4858	8.8217	8.1576	7.6934	1.3575	1.2698	728.7	545	1009	.7330	1450
1500	2.3420-4	1.1710-2	-1404.6	10.1961	9.5320	8.8679	8.2037	7.7395	1.3653	1.2678	740.6	557	1039	.7323	1500
1550	2.2665-4	1.1332-2	-1336.1	10.2410	9.5769	8.9127	8.2486	7.7844	1.3727	1.2660	752.3	570	1069	.7316	1550
1600	2.1956-4	1.0978-2	-1267.3	10.2847	9.6206	8.9564	8.2923	7.8281	1.3797	1.2643	763.8	582	1099	.7309	1600
1650	2.1291-4	1.0646-2	-1198.2	10.3272	9.6631	8.9990	8.3349	7.8707	1.3863	1.2627	775.2	595	1129	.7302	1650
1700	2.0665-4	1.0332-2	-1128.7	10.3687	9.7046	9.0405	8.3764	7.9121	1.3926	1.2612	786.4	607	1158	.7294	1700
1750	2.0074-4	1.0037-2	-1058.9	10.4092	9.7451	9.0809	8.4168	7.9526	1.3986	1.2598	797.4	619	1188	.7287	1750
1800	1.9517-4	9.7584-3	-988.8	10.4487	9.7845	9.1204	8.4563	7.9921	1.4042	1.2585	808.3	631	1216	.7279	1800
1850	1.8989-4	9.4947-3	-918.5	10.4872	9.8231	9.1590	8.4948	8.0306	1.4096	1.2573	819.1	642	1245	.7271	1850
1900	1.8490-4	9.2448-3	-847.9	10.5249	9.8607	9.1966	8.5325	8.0683	1.4147	1.2561	829.7	654	1274	.7263	1900
1950	1.8016-4	9.0078-3	-777.0	10.5617	9.8975	9.2334	8.5693	8.1051	1.4195	1.2550	840.2	665	1302	.7255	1950
2000	1.7565-4	8.7826-3	-705.9	10.5977	9.9335	9.2694	8.6053	8.1411	1.4240	1.2540	850.5	677	1330	.7247	2000
2050	1.7137-4	8.5684-3	-634.6	10.6329	9.9688	9.3046	8.6405	8.1763	1.4283	1.2530	860.7	688	1357	.7240	2050
2100	1.6729-4	8.3644-3	-563.1	10.6674	10.0032	9.3391	8.6750	8.2108	1.4324	1.2521	870.9	699	1384	.7232	2100
2150	1.6340-4	8.1698-3	-491.4	10.7011	10.0370	9.3729	8.7087	8.2445	1.4362	1.2513	880.9	710	1412	.7225	2150
2200	1.5968-4	7.9842-3	-419.5	10.7342	10.0700	9.4059	8.7418	8.2776	1.4399	1.2505	890.8	721	1438	.7217	2200
2250	1.5613-4	7.8067-3	-347.4	10.7666	10.1024	9.4383	8.7742	8.3100	1.4433	1.2497	900.6	732	1465	.7209	2250
2300	1.5274-4	7.6370-3	-275.2	10.7983	10.1342	9.4701	8.8059	8.3417	1.4466	1.2490	910.3	743	1492	.7201	2300
2350	1.4949-4	7.4745-3	-202.8	10.8295	10.1653	9.5012	8.8371	8.3729	1.4497	1.2484	919.9	753	1518	.7192	2350
2400	1.4638-4	7.3188-3	-130.2	10.8600	10.1959	9.5318	8.8676	8.4034	1.4527	1.2477	929.4	764	1544	.7184	2400
2450	1.4339-4	7.1695-3	-57.5	10.8900	10.2259	9.5618	8.8976	8.4334	1.4555	1.2471	938.8	774	1570	.7175	2450
2500	1.4052-4	7.0261-3	15.3	10.9194	10.2553	9.5912	8.9271	8.4629	1.4581	1.2466	948.1	784	1596	.7166	2500
2550	1.3777-4	6.8883-3	88.3	10.9483	10.2842	9.6201	8.9560	8.4918	1.4607	1.2460	957.3	795	1622	.7155	2550
2600	1.3512-4	6.7558-3	161.4	10.9767	10.3126	9.6485	8.9843	8.5201	1.4631	1.2455	966.5	805	1648	.7145	2600
2650	1.3257-4	6.6284-3	234.6	11.0046	10.3405	9.6764	9.0122	8.5480	1.4654	1.2451	975.5	815	1674	.7135	2650
2700	1.3011-4	6.5056-3	308.0	11.0320	10.3679	9.7038	9.0397	8.5754	1.4676	1.2446	984.5	825	1699	.7125	2700
2750	1.2775-4	6.3873-3	381.4	11.0590	10.3948	9.7307	9.0666	8.6024	1.4697	1.2442	993.4	835	1724	.7116	2750
2800	1.2547-4	6.2733-3	454.9	11.0855	10.4213	9.7572	9.0931	8.6289	1.4717	1.2438	1002.2	845	1749	.7106	2800
2850	1.2326-4	6.1632-3	528.6	11.1115	10.4474	9.7833	9.1192	8.6550	1.4736	1.2434	1011.0	855	1774	.7098	2850
2900	1.2114-4	6.0570-3	602.3	11.1372	10.4731	9.8089	9.1448	8.6806	1.4755	1.2430	1019.6	864	1799	.7089	2900
2950	1.1909-4	5.9543-3	676.1	11.1624	10.4983	9.8342	9.1700	8.7058	1.4773	1.2426	1028.2	874	1823	.7080	2950
3000	1.1710-4	5.8551-3	750.0	11.1873	10.5231	9.8590	9.1949	8.7307	1.4790	1.2423	1036.8	884	1848	.7072	3000

TABLE 15.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.066997; EQUIV. RATIO ◘ 1.000; CHEM. EQUIV. RATIO ◘ 1.0000; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S	
900	3.9034-6	-2190.0	9.5301	28.827	392	1.0000	-1.0000	1.2399	1.3031	581.6	655 .741	1.2399	1.3031	581.6	655 .741
950	3.6979-6	-2127.7	9.5975	28.827	407	1.0000	-1.0000	1.2538	1.2988	596.5	690 .740	1.2538	1.2988	596.5	690 .740
1000	3.5130-6	-2064.7	9.6622	28.827	422	1.0000	-1.0000	1.2670	1.2947	611.1	724 .739	1.2669	1.2948	611.1	723 .739
1050	3.3458-6	-2001.0	9.7243	28.827	437	1.0000	-1.0000	1.2793	1.2911	625.3	757 .738	1.2791	1.2911	625.3	757 .738
1100	3.1937-6	-1936.8	9.7841	28.827	451	1.0000	-1.0000	1.2911	1.2877	639.2	790 .737	1.2906	1.2878	639.2	789 .737
1150	3.0548-6	-1871.9	9.8417	28.827	465	1.0001	-1.0000	1.3028	1.2844	652.7	823 .736	1.3017	1.2847	652.8	822 .737
1200	2.9275-6	-1806.5	9.8974	28.827	479	1.0001	-1.0000	1.3144	1.2812	665.9	856 .736	1.3122	1.2817	666.1	854 .736
1250	2.8104-6	-1740.4	9.9513	28.826	492	1.0003	-1.0000	1.3264	1.2781	678.8	889 .735	1.3222	1.2790	679.1	885 .735
1300	2.7023-6	-1673.8	10.0036	28.826	506	1.0005	-1.0000	1.3395	1.2748	691.4	924 .733	1.3317	1.2765	691.8	917 .735
1350	2.6021-6	-1606.5	10.0544	28.825	519	1.0009	-1.0000	1.3542	1.2713	703.6	960 .732	1.3407	1.2741	704.4	948 .734
1400	2.5091-6	-1538.3	10.1040	28.824	532	1.0016	-1.0000	1.3719	1.2673	715.4	999 .730	1.3493	1.2719	716.7	978 .734
1450	2.4224-6	-1469.2	10.1525	28.822	545	1.0027	-1.0001	1.3937	1.2627	726.8	1043 .728	1.3575	1.2698	728.8	1009 .733
1500	2.3413-6	-1398.9	10.2002	28.818	557	1.0043	-1.0001	1.4216	1.2572	737.6	1093 .725	1.3653	1.2679	740.8	1039 .732
1550	2.2654-6	-1326.9	10.2474	28.813	570	1.0067	-1.0002	1.4578	1.2507	747.9	1153 .721	1.3726	1.2662	752.6	1070 .731
1600	2.1940-6	-1252.9	10.2944	28.806	582	1.0102	-1.0002	1.5048	1.2430	757.7	1225 .715	1.3795	1.2646	764.2	1099 .731
1650	2.1267-6	-1176.2	10.3415	28.794	594	1.0151	-1.0004	1.5657	1.2341	766.8	1314 .708	1.3861	1.2631	775.8	1129 .730
1700	2.0630-6	-1096.0	10.3894	28.779	606	1.0219	-1.0006	1.6441	1.2239	775.3	1426 .699	1.3923	1.2618	787.2	1159 .729
1750	2.0026-6	-1011.4	10.4384	28.757	618	1.0309	-1.0008	1.7439	1.2127	783.3	1568 .688	1.3981	1.2607	798.7	1188 .728
1800	1.9449-6	-921.2	10.4893	28.727	630	1.0429	-1.0012	1.8691	1.2008	790.9	1747 .674	1.4035	1.2598	810.1	1217 .726
1850	1.8898-6	-824.0	10.5425	28.688	641	1.0583	-1.0016	2.0239	1.1887	798.3	1975 .657	1.4085	1.2591	821.6	1246 .725
1900	1.8367-6	-718.3	10.5989	28.636	652	1.0778	-1.0022	2.2126	1.1768	805.7	2265 .637	1.4132	1.2586	833.2	1274 .724
1950	1.7855-6	-602.1	10.6592	28.570	663	1.1021	-1.0030	2.4390	1.1654	813.2	2631 .615	1.4175	1.2583	845.0	1303 .722
2000	1.7357-6	-473.7	10.7243	28.485	674	1.1319	-1.0040	2.7064	1.1550	821.1	3091 .590	1.4215	1.2584	857.1	1332 .720
2050	1.6871-6	-330.8	10.7948	28.381	685	1.1678	-1.0053	3.0176	1.1456	829.5	3665 .564	1.4251	1.2588	869.5	1360 .717
2100	1.6395-6	-171.2	10.8717	28.252	695	1.2103	-1.0068	3.3745	1.1376	838.5	4376 .536	1.4284	1.2595	882.3	1389 .714
2150	1.5926-6	7.5	10.9558	28.097	705	1.2599	-1.0087	3.7784	1.1308	848.2	5246 .507	1.4314	1.2606	895.6	1419 .711
2200	1.5461-6	207.5	11.0477	27.911	714	1.3171	-1.0109	4.2302	1.1252	858.7	6300 .480	1.4341	1.2622	909.5	1450 .706
2250	1.5000-6	431.3	11.1483	27.693	723	1.3822	-1.0135	4.7308	1.1207	870.1	7556 .453	1.4367	1.2642	924.1	1482 .701
2300	1.4539-6	681.4	11.2582	27.440	732	1.4555	-1.0166	5.2808	1.1172	882.4	9023 .429	1.4391	1.2667	939.6	1517 .695
2350	1.4079-6	960.2	11.3781	27.149	741	1.5370	-1.0202	5.8799	1.1146	895.6	10695 .407	1.4415	1.2698	955.9	1555 .687
2400	1.3618-6	1270.1	11.5086	26.819	749	1.6264	-1.0243	6.5252	1.1128	909.9	12541 .390	1.4440	1.2734	973.4	1597 .677
2450	1.3156-6	1613.3	11.6501	26.449	757	1.7221	-1.0289	7.2077	1.1116	925.3	14494 .377	1.4466	1.2776	992.0	1644 .666
2500	1.2694-6	1991.2	11.8028	26.040	765	1.8212	-1.0339	7.9082	1.1112	941.8	16450 .368	1.4493	1.2825	1011.8	1695 .654
2550	1.2232-6	2403.9	11.9662	25.596	773	1.9186	-1.0390	8.5922	1.1114	959.5	18261 .364	1.4524	1.2881	1032.9	1753 .640
2600	1.1775-6	2849.3	12.1391	25.121	781	2.0067	-1.0439	9.2078	1.1122	978.3	19752 .364	1.4557	1.2943	1055.3	1816 .626
2650	1.1325-6	3322.4	12.3194	24.627	788	2.0761	-1.0481	9.6881	1.1137	998.2	20739 .368	1.4593	1.3010	1078.9	1883 .611
2700	1.0889-6	3814.7	12.5034	24.126	796	2.1171	-1.0512	9.9606	1.1159	1019.0	21076 .376	1.4631	1.3081	1103.3	1954 .596
2750	1.0473-6	4314.0	12.6866	23.634	804	2.1218	-1.0527	9.9654	1.1188	1040.4	20690 .387	1.4670	1.3155	1128.1	2026 .582
2800	1.0083-6	4806.3	12.8640	23.167	812	2.0871	-1.0523	9.6762	1.1227	1062.2	19621 .401	1.4709	1.3228	1152.9	2097 .570
2850	9.7231-7	5277.1	13.0307	22.739	821	2.0162	-1.0500	9.1136	1.1275	1084.0	18012 .415	1.4746	1.3297	1177.2	2166 .559
2900	9.3958-7	5714.2	13.1828	22.359	829	1.9177	-1.0461	8.3431	1.1335	1105.6	16075 .430	1.4782	1.3361	1200.4	2230 .550
2950	9.1015-7	6109.4	13.3179	22.032	838	1.8036	-1.0413	7.4552	1.1407	1126.9	14033 .445	1.4814	1.3418	1222.2	2290 .542
3000	8.8385-7	6459.2	13.4355	21.758	848	1.6855	-1.0360	6.5408	1.1494	1147.9	12068 .459	1.4843	1.3467	1242.5	2346 .536

TABLE 15.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.066997; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9034-5	-2190.0	8.8660	28.827	392	1.0000	-1.0000	1.2399	1.3031	581.6	655	.741	1.2399	1.3031	581.6	655	.741
950	3.6979-5	-2127.7	8.9334	28.827	407	1.0000	-1.0000	1.2538	1.2988	596.5	690	.740	1.2538	1.2988	596.5	690	.740
1000	3.5130-5	-2064.7	8.9981	28.827	422	1.0000	-1.0000	1.2670	1.2948	611.1	723	.739	1.2669	1.2948	611.1	723	.739
1050	3.3458-5	-2001.0	9.0602	28.827	437	1.0000	-1.0000	1.2792	1.2911	625.3	757	.738	1.2791	1.2911	625.3	757	.738
1100	3.1937-5	-1936.8	9.1200	28.827	451	1.0000	-1.0000	1.2909	1.2877	639.2	790	.737	1.2906	1.2878	639.2	789	.737
1150	3.0548-5	-1871.9	9.1776	28.827	465	1.0000	-1.0000	1.3022	1.2845	652.7	822	.737	1.3017	1.2847	652.8	822	.737
1200	2.9275-5	-1806.5	9.2332	28.827	479	1.0001	-1.0000	1.3132	1.2815	666.0	854	.736	1.3122	1.2817	666.1	854	.736
1250	2.8104-5	-1740.6	9.2871	28.827	492	1.0001	-1.0000	1.3242	1.2786	678.9	887	.735	1.3222	1.2790	679.1	885	.735
1300	2.7023-5	-1674.1	9.3392	28.826	506	1.0002	-1.0000	1.3354	1.2757	691.6	920	.734	1.3317	1.2765	691.8	917	.735
1350	2.6022-5	-1607.1	9.3898	28.826	519	1.0004	-1.0000	1.3471	1.2727	704.0	953	.733	1.3407	1.2741	704.4	948	.734
1400	2.5092-5	-1539.4	9.4390	28.825	532	1.0008	-1.0000	1.3600	1.2697	716.0	988	.732	1.3493	1.2719	716.7	978	.734
1450	2.4226-5	-1471.0	9.4870	28.824	545	1.0013	-1.0000	1.3747	1.2664	727.8	1025	.731	1.3575	1.2698	728.8	1009	.733
1500	2.3417-5	-1401.9	9.5339	28.823	557	1.0020	-1.0000	1.3919	1.2627	739.2	1064	.729	1.3653	1.2679	740.7	1039	.732
1550	2.2660-5	-1331.8	9.5799	28.820	570	1.0032	-1.0001	1.4129	1.2585	750.2	1108	.727	1.3726	1.2661	752.4	1069	.732
1600	2.1949-5	-1260.5	9.6251	28.817	582	1.0048	-1.0001	1.4387	1.2537	760.8	1157	.724	1.3796	1.2644	764.0	1099	.731
1650	2.1280-5	-1187.8	9.6699	28.812	595	1.0070	-1.0002	1.4708	1.2481	770.9	1214	.720	1.3862	1.2629	775.5	1129	.730
1700	2.0649-5	-1113.3	9.7144	28.804	607	1.0102	-1.0003	1.5109	1.2418	780.6	1280	.716	1.3924	1.2615	786.8	1158	.729
1750	2.0052-5	-1036.5	9.7588	28.794	618	1.0144	-1.0004	1.5608	1.2345	789.8	1358	.711	1.3983	1.2602	798.0	1188	.728
1800	1.9485-5	-957.0	9.8036	28.780	630	1.0199	-1.0005	1.6224	1.2265	798.6	1452	.704	1.4039	1.2591	809.2	1217	.727
1850	1.8947-5	-874.1	9.8491	28.762	642	1.0270	-1.0007	1.6978	1.2178	807.0	1565	.696	1.4091	1.2581	820.3	1245	.726
1900	1.8433-5	-787.0	9.8955	28.738	653	1.0360	-1.0010	1.7891	1.2085	815.1	1701	.687	1.4139	1.2573	831.3	1274	.725
1950	1.7941-5	-694.9	9.9434	28.707	664	1.0473	-1.0014	1.8982	1.1990	822.9	1867	.676	1.4185	1.2566	842.4	1302	.724
2000	1.7468-5	-596.8	9.9930	28.668	676	1.0611	-1.0018	2.0270	1.1895	830.6	2067	.663	1.4227	1.2561	853.6	1330	.723
2050	1.7013-5	-491.8	10.0449	28.619	686	1.0779	-1.0024	2.1770	1.1801	838.4	2307	.648	1.4266	1.2557	864.8	1358	.721
2100	1.6573-5	-378.7	10.0994	28.559	697	1.0978	-1.0031	2.3495	1.1713	846.2	2597	.631	1.4302	1.2556	876.2	1385	.720
2150	1.6146-5	-256.5	10.1569	28.486	708	1.1211	-1.0039	2.5451	1.1631	854.3	2942	.612	1.4335	1.2557	887.7	1412	.718
2200	1.5731-5	-123.8	10.2179	28.398	718	1.1481	-1.0049	2.7641	1.1557	862.8	3353	.592	1.4365	1.2560	899.5	1440	.716
2250	1.5325-5	20.3	10.2827	28.294	728	1.1789	-1.0061	3.0061	1.1491	871.6	3839	.570	1.4392	1.2566	911.5	1468	.714
2300	1.4927-5	177.1	10.3516	28.172	738	1.2136	-1.0075	3.2704	1.1434	881.0	4409	.547	1.4417	1.2574	923.9	1496	.711
2350	1.4537-5	347.7	10.4249	28.032	747	1.2522	-1.0091	3.5560	1.1385	890.8	5074	.524	1.4439	1.2585	936.6	1524	.708
2400	1.4152-5	533.1	10.5030	27.871	756	1.2948	-1.0110	3.8619	1.1345	901.2	5841	.500	1.4459	1.2599	949.8	1554	.704
2450	1.3773-5	734.2	10.5859	27.689	766	1.3413	-1.0130	4.1870	1.1312	912.2	6720	.477	1.4478	1.2617	963.4	1584	.700
2500	1.3398-5	952.1	10.6739	27.485	774	1.3918	-1.0154	4.5308	1.1286	923.9	7712	.455	1.4496	1.2637	977.6	1616	.695
2550	1.3027-5	1187.6	10.7672	27.258	783	1.4462	-1.0180	4.8927	1.1266	936.1	8817	.435	1.4514	1.2661	992.4	1651	.688
2600	1.2659-5	1441.6	10.8658	27.008	792	1.5045	-1.0210	5.2717	1.1252	949.0	10025	.416	1.4531	1.2688	1007.8	1688	.682
2650	1.2294-5	1715.0	10.9700	26.734	800	1.5663	-1.0242	5.6660	1.1242	962.6	11314	.401	1.4549	1.2719	1023.8	1727	.674
2700	1.1932-5	2008.4	11.0797	26.437	808	1.6308	-1.0277	6.0714	1.1237	976.8	12653	.388	1.4567	1.2753	1040.7	1770	.665
2750	1.1574-5	2322.2	11.1948	26.117	816	1.6968	-1.0314	6.4805	1.1237	991.8	13993	.378	1.4587	1.2792	1058.2	1816	.656
2800	1.1219-5	2656.3	11.3152	25.776	824	1.7623	-1.0352	6.8812	1.1240	1007.6	15274	.371	1.4608	1.2834	1076.6	1866	.645
2850	1.0868-5	3009.9	11.4404	25.416	832	1.8245	-1.0391	7.2567	1.1248	1024.1	16426	.368	1.4631	1.2880	1095.8	1919	.634
2900	1.0523-5	3381.2	11.5695	25.042	840	1.8799	-1.0427	7.5851	1.1261	1041.3	17373	.367	1.4655	1.2929	1115.7	1976	.623
2950	1.0187-5	3767.2	11.7015	24.658	848	1.9247	-1.0460	7.8417	1.1278	1059.2	18041	.369	1.4681	1.2981	1136.3	2036	.612
3000	9.8595-6	4163.8	11.8347	24.271	856	1.9549	-1.0486	8.0015	1.1300	1077.6	18374	.373	1.4708	1.3036	1157.5	2099	.600

TABLE 15.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.066997; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.9034-4	-2190.0	8.2019	28.827	392	1.0000	-1.0000	1.2399	1.3031	581.6	655	.741	1.2399	1.3031	581.6	655	.741
950	3.6979-4	-2127.7	8.2693	28.827	407	1.0000	-1.0000	1.2538	1.2988	596.5	690	.740	1.2538	1.2988	596.5	690	.740
1000	3.5130-4	-2064.7	8.3339	28.827	422	1.0000	-1.0000	1.2670	1.2948	611.1	723	.739	1.2669	1.2948	611.1	723	.739
1050	3.3458-4	-2001.0	8.3960	28.827	437	1.0000	-1.0000	1.2791	1.2911	625.3	757	.738	1.2791	1.2911	625.3	757	.738
1100	3.1937-4	-1936.8	8.4558	28.827	451	1.0000	-1.0000	1.2907	1.2878	639.2	789	.737	1.2906	1.2878	639.2	789	.737
1150	3.0548-4	-1871.9	8.5134	28.827	465	1.0000	-1.0000	1.3019	1.2846	652.8	822	.737	1.3017	1.2847	652.8	822	.737
1200	2.9275-4	-1806.6	8.5691	28.827	479	1.0000	-1.0000	1.3127	1.2816	666.0	854	.736	1.3122	1.2817	666.1	854	.736
1250	2.8104-4	-1740.7	8.6229	28.827	492	1.0001	-1.0000	1.3231	1.2788	679.0	886	.735	1.3222	1.2790	679.1	885	.735
1300	2.7023-4	-1674.3	8.6750	28.827	506	1.0001	-1.0000	1.3334	1.2761	691.7	918	.734	1.3317	1.2765	691.8	917	.735
1350	2.6022-4	-1607.3	8.7255	28.826	519	1.0002	-1.0000	1.3438	1.2734	704.2	950	.734	1.3407	1.2741	704.3	948	.734
1400	2.5093-4	-1539.9	8.7745	28.826	532	1.0004	-1.0000	1.3544	1.2708	716.4	983	.733	1.3493	1.2719	716.7	978	.734
1450	2.4227-4	-1471.9	8.8223	28.826	545	1.0006	-1.0000	1.3657	1.2681	728.3	1017	.732	1.3575	1.2698	728.7	1009	.733
1500	2.3419-4	-1403.3	8.8688	28.825	557	1.0010	-1.0000	1.3780	1.2653	739.9	1051	.731	1.3653	1.2679	740.6	1039	.732
1550	2.2662-4	-1334.0	8.9142	28.824	570	1.0015	-1.0000	1.3919	1.2624	751.3	1088	.729	1.3727	1.2661	752.4	1069	.732
1600	2.1953-4	-1264.1	8.9586	28.822	582	1.0022	-1.0001	1.4078	1.2591	762.3	1127	.728	1.3796	1.2644	763.9	1099	.731
1650	2.1286-4	-1193.2	9.0022	28.820	595	1.0033	-1.0001	1.4266	1.2555	773.1	1169	.726	1.3863	1.2628	775.3	1129	.730
1700	2.0657-4	-1121.3	9.0451	28.816	607	1.0048	-1.0001	1.4490	1.2514	783.5	1215	.723	1.3925	1.2614	786.6	1158	.729
1750	2.0064-4	-1048.2	9.0875	28.812	619	1.0067	-1.0002	1.4758	1.2469	793.5	1267	.721	1.3985	1.2600	797.7	1188	.728
1800	1.9502-4	-973.7	9.1295	28.805	630	1.0093	-1.0002	1.5081	1.2418	803.2	1325	.717	1.4041	1.2588	808.7	1217	.728
1850	1.8969-4	-897.3	9.1713	28.796	642	1.0126	-1.0003	1.5468	1.2362	812.6	1392	.714	1.4093	1.2577	819.6	1245	.727
1900	1.8463-4	-818.9	9.2132	28.785	654	1.0169	-1.0005	1.5929	1.2301	821.6	1468	.709	1.4143	1.2566	830.5	1274	.726
1950	1.7980-4	-737.9	9.2553	28.771	665	1.0222	-1.0006	1.6475	1.2235	830.3	1557	.704	1.4190	1.2557	841.2	1302	.725
2000	1.7520-4	-654.0	9.2978	28.752	676	1.0287	-1.0008	1.7115	1.2165	838.8	1659	.697	1.4234	1.2550	851.9	1330	.724
2050	1.7079-4	-566.6	9.3409	28.729	687	1.0366	-1.0011	1.7860	1.2092	847.0	1778	.690	1.4275	1.2543	862.6	1357	.723
2100	1.6655-4	-475.2	9.3850	28.701	698	1.0461	-1.0014	1.8717	1.2018	855.1	1916	.682	1.4313	1.2538	873.3	1384	.722
2150	1.6248-4	-379.2	9.4301	28.666	709	1.0573	-1.0018	1.9693	1.1945	863.1	2075	.673	1.4348	1.2534	884.1	1411	.721
2200	1.5856-4	-278.1	9.4766	28.624	719	1.0703	-1.0023	2.0791	1.1873	871.1	2260	.662	1.4381	1.2531	894.9	1438	.719
2250	1.5477-4	-171.1	9.5247	28.574	730	1.0854	-1.0029	2.2014	1.1804	879.1	2472	.650	1.4411	1.2530	905.7	1465	.718
2300	1.5109-4	-57.7	9.5745	28.515	740	1.1024	-1.0035	2.3361	1.1740	887.3	2715	.637	1.4439	1.2530	916.7	1492	.716
2350	1.4752-4	62.7	9.6263	28.447	750	1.1216	-1.0043	2.4827	1.1680	895.7	2992	.622	1.4464	1.2532	927.8	1518	.715
2400	1.4405-4	190.7	9.6802	28.368	760	1.1429	-1.0051	2.6405	1.1626	904.3	3308	.607	1.4488	1.2536	939.1	1545	.713
2450	1.4066-4	326.9	9.7364	28.278	770	1.1663	-1.0061	2.8087	1.1577	913.2	3665	.590	1.4509	1.2542	950.5	1572	.711
2500	1.3735-4	471.8	9.7949	28.176	780	1.1917	-1.0072	2.9861	1.1535	922.5	4066	.573	1.4528	1.2549	962.2	1599	.709
2550	1.3411-4	625.7	9.8558	28.061	789	1.2190	-1.0085	3.1715	1.1499	932.1	4517	.554	1.4545	1.2558	974.1	1626	.706
2600	1.3093-4	789.0	9.9193	27.935	798	1.2482	-1.0099	3.3638	1.1468	942.0	5019	.535	1.4561	1.2569	986.2	1654	.703
2650	1.2782-4	962.2	9.9852	27.795	807	1.2791	-1.0114	3.5619	1.1442	952.4	5575	.516	1.4575	1.2582	998.7	1683	.699
2700	1.2476-4	1145.3	10.0537	27.642	816	1.3117	-1.0130	3.7650	1.1421	963.1	6188	.497	1.4589	1.2597	1011.5	1712	.696
2750	1.2176-4	1338.7	10.1247	27.476	825	1.3460	-1.0148	3.9725	1.1405	974.2	6857	.478	1.4602	1.2614	1024.6	1742	.692
2800	1.1880-4	1542.6	10.1981	27.296	834	1.3819	-1.0167	4.1840	1.1393	985.7	7582	.460	1.4614	1.2633	1038.0	1774	.687
2850	1.1589-4	1757.2	10.2741	27.103	842	1.4193	-1.0188	4.3994	1.1384	997.7	8360	.443	1.4627	1.2654	1051.8	1806	.682
2900	1.1303-4	1982.6	10.3525	26.897	851	1.4582	-1.0211	4.6181	1.1379	1010.0	9182	.428	1.4639	1.2677	1066.0	1841	.677
2950	1.1021-4	2219.1	10.4333	26.678	859	1.4984	-1.0235	4.8396	1.1377	1022.7	10040	.414	1.4652	1.2702	1080.6	1877	.671
3000	1.0743-4	2466.6	10.5165	26.447	867	1.5396	-1.0261	5.0623	1.1378	1035.9	10917	.402	1.4665	1.2729	1095.7	1916	.664

TABLE 15.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.066997; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.9034-3	-2190.0	7.5377	28.827	392	1.0000	-1.0000	1.2399	1.3031	581.6	655	.741	1.2399	1.3031	581.6	655	.741
950	3.6979-3	-2127.7	7.6051	28.827	407	1.0000	-1.0000	1.2538	1.2988	596.5	690	.740	1.2538	1.2988	596.5	690	.740
1000	3.5130-3	-2064.7	7.6698	28.827	422	1.0000	-1.0000	1.2669	1.2948	611.1	723	.739	1.2669	1.2948	611.1	723	.739
1050	3.3457-3	-2001.0	7.7319	28.827	437	1.0000	-1.0000	1.2791	1.2911	625.3	757	.738	1.2791	1.2911	625.3	757	.738
1100	3.1937-3	-1936.8	7.7917	28.827	451	1.0000	-1.0000	1.2907	1.2878	639.2	789	.737	1.2906	1.2878	639.2	789	.737
1150	3.0548-3	-1871.9	7.8493	28.827	465	1.0000	-1.0000	1.3018	1.2846	652.8	822	.737	1.3017	1.2847	652.8	822	.737
1200	2.9275-3	-1806.6	7.9049	28.827	479	1.0000	-1.0000	1.3124	1.2817	666.0	854	.736	1.3122	1.2817	666.1	854	.736
1250	2.8104-3	-1740.7	7.9587	28.827	492	1.0000	-1.0000	1.3226	1.2789	679.0	886	.735	1.3222	1.2790	679.1	885	.735
1300	2.7023-3	-1674.3	8.0108	28.827	506	1.0001	-1.0000	1.3325	1.2763	691.8	917	.735	1.3317	1.2765	691.8	917	.735
1350	2.6022-3	-1607.5	8.0613	28.827	519	1.0001	-1.0000	1.3422	1.2738	704.3	949	.734	1.3407	1.2741	704.3	948	.734
1400	2.5093-3	-1540.1	8.1102	28.827	532	1.0002	-1.0000	1.3518	1.2713	716.5	981	.733	1.3493	1.2719	716.6	978	.734
1450	2.4227-3	-1472.3	8.1578	28.826	545	1.0003	-1.0000	1.3615	1.2690	728.5	1013	.732	1.3575	1.2698	728.7	1009	.733
1500	2.3419-3	-1404.0	8.2042	28.826	557	1.0005	-1.0000	1.3715	1.2666	740.3	1045	.732	1.3653	1.2678	740.6	1039	.732
1550	2.2664-3	-1335.1	8.2493	28.825	570	1.0007	-1.0000	1.3819	1.2642	751.8	1078	.731	1.3727	1.2660	752.3	1069	.732
1600	2.1955-3	-1265.7	8.2934	28.825	582	1.0011	-1.0000	1.3933	1.2617	763.1	1112	.729	1.3797	1.2643	763.9	1099	.731
1650	2.1289-3	-1195.8	8.3364	28.823	595	1.0016	-1.0000	1.4058	1.2591	774.1	1148	.728	1.3863	1.2628	775.3	1129	.730
1700	2.0661-3	-1125.1	8.3786	28.822	607	1.0023	-1.0001	1.4198	1.2563	784.9	1185	.727	1.3926	1.2613	786.5	1158	.729
1750	2.0069-3	-1053.8	8.4200	28.820	619	1.0032	-1.0001	1.4359	1.2533	795.5	1225	.725	1.3985	1.2599	797.6	1188	.729
1800	1.9510-3	-981.5	8.4607	28.816	630	1.0044	-1.0001	1.4543	1.2501	805.7	1268	.723	1.4041	1.2586	808.5	1216	.728
1850	1.8980-3	-908.3	8.5008	28.812	642	1.0060	-1.0002	1.4758	1.2465	815.7	1314	.721	1.4095	1.2574	819.3	1245	.727
1900	1.8477-3	-833.9	8.5405	28.807	654	1.0080	-1.0002	1.5006	1.2426	825.5	1365	.719	1.4145	1.2564	830.0	1274	.726
1950	1.7999-3	-758.1	8.5798	28.800	665	1.0105	-1.0003	1.5295	1.2383	834.9	1421	.716	1.4192	1.2554	840.7	1302	.725
2000	1.7544-3	-680.9	8.6190	28.791	676	1.0136	-1.0004	1.5628	1.2337	844.1	1484	.713	1.4237	1.2545	851.2	1330	.724
2050	1.7109-3	-601.8	8.6580	28.780	688	1.0174	-1.0005	1.6012	1.2288	853.1	1553	.709	1.4279	1.2536	861.6	1357	.723
2100	1.6694-3	-520.6	8.6971	28.767	699	1.0219	-1.0007	1.6451	1.2237	861.8	1630	.705	1.4318	1.2529	872.0	1384	.723
2150	1.6296-3	-437.2	8.7364	28.750	709	1.0273	-1.0009	1.6949	1.2183	870.4	1716	.701	1.4355	1.2523	882.4	1411	.722
2200	1.5915-3	-351.1	8.7760	28.730	720	1.0336	-1.0011	1.7509	1.2129	878.7	1813	.695	1.4390	1.2517	892.7	1438	.721
2250	1.5548-3	-262.0	8.8160	28.706	731	1.0409	-1.0013	1.8135	1.2073	887.0	1922	.690	1.4422	1.2513	903.0	1465	.720
2300	1.5195-3	-169.6	8.8566	28.678	741	1.0493	-1.0017	1.8829	1.2018	895.2	2043	.683	1.4452	1.2509	913.3	1491	.719
2350	1.4855-3	-73.6	8.8979	28.645	752	1.0589	-1.0020	1.9589	1.1963	903.3	2178	.676	1.4480	1.2507	923.6	1518	.717
2400	1.4525-3	26.4	8.9400	28.606	762	1.0696	-1.0024	2.0417	1.1910	911.5	2328	.668	1.4506	1.2506	934.0	1544	.716
2450	1.4207-3	130.7	8.9830	28.562	772	1.0815	-1.0029	2.1309	1.1860	919.7	2495	.660	1.4530	1.2505	944.4	1570	.715
2500	1.3898-3	239.6	9.0270	28.511	782	1.0946	-1.0035	2.2262	1.1813	928.0	2678	.650	1.4552	1.2506	954.9	1596	.713
2550	1.3598-3	353.4	9.0721	28.454	792	1.1088	-1.0041	2.3271	1.1769	936.4	2881	.640	1.4572	1.2508	965.4	1622	.712
2600	1.3307-3	472.4	9.1183	28.389	802	1.1243	-1.0048	2.4329	1.1728	945.0	3102	.629	1.4591	1.2511	976.1	1648	.710
2650	1.3023-3	596.8	9.1657	28.318	811	1.1408	-1.0055	2.5429	1.1692	953.8	3345	.617	1.4608	1.2516	986.8	1674	.708
2700	1.2746-3	726.7	9.2143	28.239	821	1.1583	-1.0064	2.6562	1.1660	962.8	3608	.604	1.4624	1.2521	997.7	1700	.706
2750	1.2476-3	862.4	9.2641	28.152	830	1.1767	-1.0073	2.7722	1.1631	971.9	3894	.591	1.4638	1.2528	1008.7	1726	.704
2800	1.2212-3	1004.0	9.3151	28.058	839	1.1959	-1.0082	2.8898	1.1607	981.3	4203	.577	1.4651	1.2535	1019.9	1752	.702
2850	1.1954-3	1151.4	9.3673	27.956	849	1.2159	-1.0093	3.0084	1.1586	991.0	4535	.563	1.4663	1.2544	1031.2	1778	.700
2900	1.1702-3	1304.8	9.4206	27.846	858	1.2365	-1.0104	3.1272	1.1569	1000.9	4893	.548	1.4674	1.2555	1042.6	1805	.697
2950	1.1455-3	1464.2	9.4751	27.729	867	1.2577	-1.0116	3.2458	1.1555	1011.0	5276	.533	1.4684	1.2566	1054.3	1832	.694
3000	1.1213-3	1629.4	9.5306	27.604	875	1.2794	-1.0128	3.3638	1.1544	1021.3	5685	.518	1.4694	1.2578	1066.1	1860	.692

TABLE 15.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.066997; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9517-2	-2190.0	7.0735	28.827	392	1.0000	-1.0000	1.2399	1.3031	581.6	655	.741	1.2399	1.3031	581.6	655	.741
950	1.8490-2	-2127.7	7.1409	28.827	407	1.0000	-1.0000	1.2538	1.2988	596.5	690	.740	1.2538	1.2988	596.5	690	.740
1000	1.7565-2	-2064.7	7.2056	28.827	422	1.0000	-1.0000	1.2669	1.2948	611.1	723	.739	1.2669	1.2948	611.1	723	.739
1050	1.6729-2	-2001.0	7.2677	28.827	437	1.0000	-1.0000	1.2791	1.2911	625.3	757	.738	1.2791	1.2912	625.3	757	.738
1100	1.5968-2	-1936.8	7.3275	28.827	451	1.0000	-1.0000	1.2907	1.2878	639.2	789	.737	1.2906	1.2878	639.2	789	.737
1150	1.5274-2	-1872.0	7.3851	28.827	465	1.0000	-1.0000	1.3017	1.2846	652.8	822	.737	1.3017	1.2847	652.8	822	.737
1200	1.4638-2	-1806.6	7.4407	28.827	479	1.0000	-1.0000	1.3123	1.2817	666.0	854	.736	1.3122	1.2817	666.1	854	.736
1250	1.4052-2	-1740.7	7.4945	28.827	492	1.0000	-1.0000	1.3224	1.2789	679.0	885	.735	1.3222	1.2790	679.1	885	.735
1300	1.3512-2	-1674.4	7.5466	28.827	506	1.0000	-1.0000	1.3322	1.2764	691.8	917	.735	1.3317	1.2765	691.8	917	.735
1350	1.3011-2	-1607.5	7.5970	28.827	519	1.0001	-1.0000	1.3416	1.2739	704.3	948	.734	1.3407	1.2741	704.3	948	.734
1400	1.2546-2	-1540.2	7.6460	28.827	532	1.0001	-1.0000	1.3508	1.2715	716.6	980	.733	1.3493	1.2719	716.6	978	.734
1450	1.2114-2	-1472.4	7.6935	28.827	545	1.0002	-1.0000	1.3599	1.2693	728.6	1011	.733	1.3575	1.2698	728.7	1009	.733
1500	1.1710-2	-1404.2	7.7398	28.826	557	1.0003	-1.0000	1.3690	1.2671	740.4	1043	.732	1.3653	1.2678	740.6	1039	.732
1550	1.1332-2	-1335.5	7.7848	28.826	570	1.0004	-1.0000	1.3783	1.2649	752.0	1075	.731	1.3727	1.2660	752.3	1069	.732
1600	1.0978-2	-1266.4	7.8287	28.826	582	1.0006	-1.0000	1.3879	1.2627	763.4	1107	.730	1.3797	1.2643	763.9	1099	.731
1650	1.0645-2	-1196.7	7.8716	28.825	595	1.0009	-1.0000	1.3981	1.2605	774.5	1140	.729	1.3863	1.2627	775.2	1129	.730
1700	1.0331-2	-1126.5	7.9135	28.824	607	1.0014	-1.0000	1.4091	1.2582	785.5	1175	.728	1.3926	1.2613	786.4	1158	.729
1750	1.0036-2	-1055.8	7.9545	28.822	619	1.0019	-1.0000	1.4212	1.2558	796.2	1210	.727	1.3985	1.2599	797.5	1188	.729
1800	9.7563-3	-984.4	7.9947	28.821	631	1.0026	-1.0001	1.4346	1.2533	806.7	1247	.725	1.4042	1.2586	808.4	1216	.728
1850	9.4918-3	-912.3	8.0343	28.818	642	1.0036	-1.0001	1.4497	1.2505	817.0	1287	.724	1.4095	1.2574	819.2	1245	.727
1900	9.2410-3	-839.4	8.0731	28.815	654	1.0048	-1.0001	1.4668	1.2476	827.0	1329	.722	1.4146	1.2563	829.9	1274	.726
1950	9.0028-3	-765.6	8.1115	28.811	665	1.0063	-1.0002	1.4861	1.2445	836.9	1373	.720	1.4193	1.2552	840.5	1302	.725
2000	8.7761-3	-690.7	8.1494	28.806	677	1.0081	-1.0002	1.5082	1.2411	846.4	1422	.718	1.4238	1.2543	850.9	1330	.724
2050	8.5601-3	-614.7	8.1869	28.799	688	1.0104	-1.0003	1.5332	1.2375	855.8	1474	.715	1.4281	1.2534	861.3	1357	.724
2100	8.3540-3	-537.4	8.2242	28.791	699	1.0131	-1.0004	1.5614	1.2337	865.0	1531	.713	1.4321	1.2526	871.6	1384	.723
2150	8.1569-3	-458.5	8.2613	28.781	710	1.0163	-1.0005	1.5933	1.2297	873.9	1593	.710	1.4358	1.2519	881.8	1411	.722
2200	7.9682-3	-378.0	8.2983	28.769	721	1.0201	-1.0006	1.6290	1.2255	882.7	1661	.707	1.4393	1.2512	891.9	1438	.721
2250	7.7872-3	-295.5	8.3354	28.755	731	1.0245	-1.0008	1.6688	1.2211	891.3	1735	.703	1.4427	1.2507	902.0	1465	.720
2300	7.6134-3	-211.0	8.3725	28.738	742	1.0296	-1.0010	1.7128	1.2167	899.8	1817	.699	1.4458	1.2502	912.1	1491	.719
2350	7.4462-3	-124.2	8.4099	28.718	752	1.0355	-1.0012	1.7611	1.2122	908.2	1907	.695	1.4487	1.2498	922.1	1518	.718
2400	7.2851-3	-34.8	8.4475	28.694	763	1.0420	-1.0015	1.8139	1.2077	916.4	2005	.690	1.4514	1.2494	932.1	1544	.717
2450	7.1297-3	57.3	8.4855	28.667	773	1.0494	-1.0018	1.8710	1.2033	924.7	2112	.685	1.4539	1.2492	942.1	1570	.716
2500	6.9796-3	152.3	8.5239	28.636	783	1.0575	-1.0021	1.9324	1.1990	932.9	2228	.679	1.4563	1.2490	952.2	1595	.715
2550	6.8344-3	250.6	8.5628	28.601	793	1.0665	-1.0025	1.9979	1.1948	941.1	2355	.673	1.4585	1.2489	962.2	1621	.713
2600	6.6937-3	352.2	8.6023	28.562	803	1.0763	-1.0029	2.0673	1.1908	949.4	2492	.666	1.4605	1.2489	972.3	1647	.712
2650	6.5572-3	457.4	8.6423	28.517	813	1.0869	-1.0034	2.1401	1.1870	957.7	2641	.659	1.4624	1.2490	982.4	1673	.711
2700	6.4246-3	566.3	8.6830	28.468	822	1.0982	-1.0039	2.2161	1.1835	966.1	2800	.651	1.4642	1.2492	992.5	1698	.709
2750	6.2958-3	679.0	8.7244	28.414	832	1.1103	-1.0044	2.2946	1.1803	974.6	2972	.642	1.4658	1.2494	1002.7	1724	.708
2800	6.1704-3	795.8	8.7665	28.354	842	1.1230	-1.0051	2.3752	1.1774	983.2	3155	.634	1.4673	1.2498	1013.0	1749	.706
2850	6.0482-3	916.6	8.8092	28.289	851	1.1364	-1.0057	2.4574	1.1747	992.0	3350	.624	1.4686	1.2502	1023.3	1774	.704
2900	5.9292-3	1041.5	8.8527	28.219	860	1.1503	-1.0064	2.5404	1.1724	1000.9	3558	.614	1.4699	1.2507	1033.8	1799	.703
2950	5.8130-3	1170.6	8.8968	28.143	869	1.1646	-1.0072	2.6238	1.1703	1009.9	3778	.604	1.4711	1.2513	1044.3	1824	.701
3000	5.6996-3	1303.9	8.9416	28.062	879	1.1794	-1.0080	2.7071	1.1685	1019.2	4012	.593	1.4721	1.2520	1054.9	1850	.699

TABLE 15C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.066997; EQUIV.RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000;
DRY AIR

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.029-5	-3223.0	6.8929	28.827	1.0605	1.859-5	30.505	129	1.000	-1.000	0.9731	1.3891	275	170	.735	200
220	1.840-5	-3198.7	7.0088	28.827	1.5495	1.688-5	30.475	139	1.000	-1.000	0.9777	1.3871	289	186	.731	220
240	1.646-5	-3139.5	7.2639	28.827	5.6961	1.532-5	30.173	147	1.000	-1.000	0.9938	1.3837	303	199	.736	240
						PRESSURE = 0.10 ATM										
200	2.029-4	-3223.3	6.3170	28.827	1.0266	1.859-4	30.507	129	1.000	-1.000	0.9730	1.3891	275	170	.734	200
220	1.845-4	-3202.3	6.4170	28.827	1.0890	1.690-4	30.504	140	1.000	-1.000	0.9765	1.3872	288	187	.730	220
240	1.687-4	-3177.6	6.5240	28.827	1.4959	1.547-4	30.474	150	1.000	-1.000	0.9812	1.3851	301	203	.728	240
260	1.531-4	-3130.4	6.7118	28.827	3.8624	1.419-4	30.267	159	1.000	-1.000	0.9936	1.3821	314	216	.730	260
280	1.308-4	-2964.6	7.3220	28.827	12.1678	1.275-4	29.290	160	1.000	-1.000	1.0397	1.3755	331	221	.752	280
						PRESSURE = 1.00 ATM										
200	2.029-3	-3223.3	5.7421	28.827	1.0232	1.859-3	30.507	129	1.000	-1.000	0.9730	1.3891	275	170	.734	200
220	1.845-3	-3202.6	5.8405	28.827	1.0432	1.690-3	30.507	140	1.000	-1.000	0.9764	1.3872	288	187	.730	220
240	1.691-3	-3181.3	5.9331	28.827	1.0978	1.549-3	30.504	151	1.000	-1.000	0.9800	1.3853	301	203	.727	240
260	1.558-3	-3157.6	6.0282	28.827	1.3397	1.429-3	30.483	161	1.000	-1.000	0.9846	1.3832	313	219	.725	260
280	1.435-3	-3096.5	6.2529	28.827	2.1631	1.322-3	30.386	170	1.000	-1.000	0.9925	1.3806	325	233	.726	280
298	1.319-3	-3044.4	6.4325	28.827	3.8277	1.231-3	30.119	177	1.000	-1.000	1.0074	1.3775	337	243	.731	298
300	1.306-3	-3037.1	6.4570	28.827	4.1003	1.222-3	30.074	177	1.000	-1.000	1.0097	1.3770	338	244	.732	300
320	1.137-3	-2910.2	6.8647	28.827	9.5390	1.113-3	29.217	179	1.000	-1.000	1.0515	1.3710	353	250	.752	320
						PRESSURE = 10.00 ATM										
200	2.026-2	-3223.3	5.1673	28.827	1.0229	1.859-2	30.507	129	1.000	-1.000	0.9730	1.3891	275	170	.734	200
220	1.842-2	-3202.7	5.2655	28.827	1.0386	1.690-2	30.507	140	1.000	-1.000	0.9763	1.3872	288	187	.730	220
240	1.689-2	-3181.7	5.3567	28.827	1.0582	1.549-2	30.507	151	1.000	-1.000	0.9799	1.3853	301	203	.727	240
260	1.559-2	-3160.2	5.4427	28.827	1.0969	1.430-2	30.505	161	1.000	-1.000	0.9837	1.3833	313	219	.724	260
280	1.447-2	-3108.4	5.6334	28.827	1.3468	1.327-2	30.495	171	1.000	-1.000	0.9880	1.3812	325	234	.723	280
298	1.356-2	-3082.7	5.7221	28.827	1.5019	1.245-2	30.469	180	1.000	-1.000	0.9928	1.3791	335	247	.723	298
300	1.347-2	-3079.9	5.7314	28.827	1.5261	1.238-2	30.464	181	1.000	-1.000	0.9933	1.3788	336	248	.723	300
320	1.254-2	-3045.8	5.8415	28.827	1.9413	1.157-2	30.378	190	1.000	-1.000	1.0012	1.3762	347	261	.726	320
340	1.161-2	-2999.4	5.9819	28.827	2.7982	1.082-2	30.176	197	1.000	-1.000	1.0141	1.3731	359	273	.731	340
360	1.059-2	-2928.5	6.1840	28.827	4.4703	1.007-2	29.752	202	1.000	-1.000	1.0370	1.3689	371	283	.741	360
380	9.352-3	-2809.9	6.5039	28.827	7.7895	9.285-3	28.953	204	1.000	-1.000	1.0779	1.3632	386	291	.757	380
						PRESSURE = 50.00 ATM										
200	1.005-1	-3223.3	4.7656	28.827	1.0229	9.295-2	30.507	129	1.000	-1.000	0.9730	1.3891	275	170	.734	200
220	9.148-2	-3202.7	4.8638	28.827	1.0382	8.450-2	30.507	140	1.000	-1.000	0.9763	1.3872	288	187	.730	220
240	8.391-2	-3181.7	4.9548	28.827	1.0547	7.745-2	30.507	151	1.000	-1.000	0.9799	1.3853	301	203	.727	240
260	7.750-2	-3160.5	5.0400	28.827	1.0755	7.150-2	30.507	161	1.000	-1.000	0.9836	1.3833	313	219	.724	260
280	7.203-2	-3109.4	5.2277	28.827	1.2757	6.638-2	30.505	171	1.000	-1.000	0.9876	1.3812	325	234	.723	280
298	6.764-2	-3086.0	5.3086	28.827	1.3077	6.233-2	30.500	180	1.000	-1.000	0.9915	1.3792	335	247	.722	298
300	6.722-2	-3083.6	5.3167	28.827	1.3127	6.195-2	30.499	181	1.000	-1.000	0.9919	1.3790	336	249	.722	300
320	6.296-2	-3056.6	5.4038	28.827	1.3965	5.804-2	30.482	191	1.000	-1.000	0.9969	1.3767	347	263	.723	320
340	5.908-2	-3027.2	5.4929	28.827	1.5609	5.456-2	30.441	199	1.000	-1.000	1.0030	1.3742	357	276	.725	340
360	5.545-2	-2993.4	5.5896	28.827	1.8511	5.138-2	30.356	208	1.000	-1.000	1.0111	1.3715	368	289	.728	360
380	5.188-2	-2952.0	5.7014	28.827	2.3265	4.842-2	30.197	215	1.000	-1.000	1.0226	1.3685	378	301	.732	380
400	4.821-2	-2898.5	5.8383	28.827	3.0702	4.558-2	29.920	221	1.000	-1.000	1.0394	1.3649	390	312	.737	400
420	4.426-2	-2826.5	6.0138	28.827	4.2166	4.276-2	29.476	226	1.000	-1.000	1.0643	1.3606	401	323	.746	420

TABLE 16.1D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	1.7546-5	-2979.9	7.8912	28.795	114	1.0000	-1.0000	1.0483	1.3802	282.3	154 .779	1.0483	1.3802	282.3	154 .779
210	1.6710-5	-2969.4	7.9424	28.795	120	1.0000	-1.0000	1.0502	1.3792	289.2	162 .774	1.0501	1.3792	289.2	162 .774
220	1.5951-5	-2958.9	7.9913	28.795	125	1.0000	-1.0000	1.0521	1.3783	295.9	171 .771	1.0521	1.3783	295.9	171 .771
230	1.5257-5	-2948.3	8.0381	28.795	130	1.0000	-1.0000	1.0542	1.3772	302.4	179 .767	1.0541	1.3773	302.4	179 .767
240	1.4622-5	-2937.8	8.0830	28.795	136	1.0000	-1.0000	1.0563	1.3762	308.8	187 .764	1.0562	1.3762	308.8	187 .765
250	1.4037-5	-2927.2	8.1262	28.795	141	1.0000	-1.0000	1.0585	1.3751	315.1	196 .762	1.0584	1.3751	315.1	196 .762
260	1.3497-5	-2916.6	8.1678	28.795	146	1.0000	-1.0000	1.0609	1.3740	321.2	204 .760	1.0607	1.3740	321.2	204 .760
270	1.2997-5	-2906.0	8.2078	28.795	151	1.0000	-1.0000	1.0634	1.3728	327.1	212 .758	1.0630	1.3729	327.2	212 .759
280	1.2533-5	-2895.4	8.2466	28.795	156	1.0001	-1.0000	1.0662	1.3715	333.0	220 .756	1.0654	1.3718	333.0	220 .757
290	1.2100-5	-2884.7	8.2840	28.795	161	1.0001	-1.0000	1.0692	1.3701	338.7	228 .754	1.0679	1.3706	338.8	227 .757
298	1.1770-5	-2876.0	8.3137	28.795	165	1.0002	-1.0000	1.0719	1.3689	343.3	235 .753	1.0700	1.3696	343.4	234 .756
300	1.1697-5	-2874.0	8.3203	28.795	166	1.0002	-1.0000	1.0725	1.3686	344.3	237 .752	1.0705	1.3694	344.4	235 .756
310	1.1320-5	-2863.2	8.3556	28.795	171	1.0004	-1.0000	1.0764	1.3669	349.8	245 .750	1.0731	1.3682	350.0	242 .756
320	1.0966-5	-2852.4	8.3898	28.794	176	1.0006	-1.0000	1.0809	1.3650	355.1	254 .748	1.0757	1.3669	355.4	250 .756
330	1.0633-5	-2841.6	8.4231	28.793	180	1.0009	-1.0000	1.0864	1.3629	360.4	263 .744	1.0785	1.3656	360.7	257 .756
340	1.0320-5	-2830.7	8.4557	28.792	185	1.0014	-1.0000	1.0930	1.3603	365.5	274 .738	1.0813	1.3644	366.0	264 .756
350	1.0025-5	-2819.7	8.4875	28.791	189	1.0020	-1.0001	1.1011	1.3574	370.4	286 .730	1.0842	1.3631	371.2	272 .756
360	9.7457-6	-2808.7	8.5186	28.789	194	1.0029	-1.0001	1.1110	1.3539	375.2	299 .720	1.0871	1.3618	376.3	279 .756
370	9.4813-6	-2797.5	8.5492	28.786	199	1.0042	-1.0002	1.1234	1.3497	379.8	315 .707	1.0901	1.3605	381.3	287 .755
380	9.2306-6	-2786.2	8.5794	28.782	203	1.0059	-1.0002	1.1387	1.3449	384.2	334 .692	1.0932	1.3591	386.3	294 .754
390	8.9923-6	-2774.7	8.6092	28.777	207	1.0081	-1.0003	1.1574	1.3393	388.5	356 .674	1.0964	1.3578	391.1	302 .753
400	8.7654-6	-2763.0	8.6388	28.770	212	1.0109	-1.0004	1.1802	1.3330	392.5	382 .654	1.0997	1.3565	396.0	310 .752
410	8.5490-6	-2751.1	8.6682	28.762	216	1.0145	-1.0006	1.2078	1.3258	396.4	412 .633	1.1031	1.3551	400.8	318 .751
420	8.3421-6	-2738.9	8.6977	28.750	220	1.0189	-1.0008	1.2409	1.3178	400.1	448 .611	1.1066	1.3538	405.5	325 .750
430	8.1439-6	-2726.3	8.7274	28.735	225	1.0244	-1.0010	1.2801	1.3092	403.6	489 .589	1.1102	1.3525	410.2	333 .748
440	7.9538-6	-2713.2	8.7573	28.717	229	1.0310	-1.0013	1.3260	1.3000	407.0	535 .567	1.1139	1.3512	414.9	341 .747
450	7.7710-6	-2699.7	8.7877	28.695	233	1.0389	-1.0017	1.3791	1.2905	410.2	587 .547	1.1178	1.3499	419.5	349 .745
460	7.5948-6	-2685.6	8.8187	28.667	237	1.0481	-1.0021	1.4395	1.2807	413.4	645 .529	1.1218	1.3487	424.2	358 .743
470	7.4247-6	-2670.9	8.8503	28.635	241	1.0586	-1.0026	1.5074	1.2711	416.5	707 .514	1.1261	1.3474	428.8	366 .741
480	7.2602-6	-2655.5	8.8828	28.596	245	1.0705	-1.0032	1.5823	1.2616	419.6	773 .502	1.1305	1.3463	433.5	375 .738
490	7.1007-6	-2639.2	8.9163	28.550	249	1.0836	-1.0039	1.6636	1.2526	422.8	840 .493	1.1350	1.3451	438.1	385 .735
500	6.9460-6	-2622.2	8.9508	28.498	253	1.0978	-1.0046	1.7502	1.2442	426.0	907 .489	1.1398	1.3440	442.8	394 .732
510	6.7956-6	-2604.2	8.9863	28.439	257	1.1126	-1.0054	1.8403	1.2365	429.4	971 .487	1.1447	1.3430	447.5	404 .728
520	6.6494-6	-2585.4	9.0229	28.373	261	1.1277	-1.0062	1.9318	1.2296	432.9	1029 .490	1.1498	1.3420	452.2	415 .723
530	6.5072-6	-2565.6	9.0606	28.300	265	1.1426	-1.0070	2.0218	1.2235	436.5	1081 .496	1.1551	1.3411	457.0	426 .719
540	6.3688-6	-2544.9	9.0992	28.221	269	1.1565	-1.0078	2.1069	1.2184	440.3	1121 .505	1.1605	1.3403	461.8	437 .714
550	6.2344-6	-2523.5	9.1386	28.137	273	1.1686	-1.0085	2.1827	1.2142	444.2	1149 .518	1.1660	1.3395	466.6	449 .709
560	6.1039-6	-2501.3	9.1785	28.049	277	1.1779	-1.0090	2.2438	1.2110	448.4	1162 .534	1.1715	1.3388	471.4	460 .704
570	5.9777-6	-2478.7	9.2186	27.959	280	1.1830	-1.0093	2.2833	1.2091	452.7	1157 .553	1.1769	1.3381	476.3	472 .699
580	5.8559-6	-2455.8	9.2584	27.870	284	1.1825	-1.0094	2.2925	1.2086	457.3	1132 .575	1.1823	1.3375	481.1	484 .694
590	5.7391-6	-2433.0	9.2974	27.785	288	1.1749	-1.0090	2.2619	1.2101	462.2	1086 .599	1.1875	1.3369	485.8	495 .690

TABLE 16.1D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.6275-6	-2410.7	9.3348	27.707	291	1.1590	-1.0082	2.1840	1.2141	467.5	1019	.624	1.1924	1.3363	490.5	506	.686
610	5.5218-6	-2389.4	9.3700	27.639	295	1.1350	-1.0070	2.0591	1.2213	473.4	937	.648	1.1969	1.3357	495.1	517	.683
620	5.4221-6	-2369.6	9.4022	27.585	298	1.1057	-1.0055	1.9019	1.2319	479.8	850	.667	1.2011	1.3350	499.5	526	.681
630	5.3283-6	-2351.4	9.4313	27.545	302	1.0759	-1.0040	1.7404	1.2450	486.6	773	.680	1.2049	1.3343	503.7	535	.680
640	5.2398-6	-2334.7	9.4576	27.518	305	1.0504	-1.0027	1.6026	1.2585	493.3	714	.685	1.2083	1.3334	507.8	543	.679
650	5.1560-6	-2319.2	9.4816	27.500	309	1.0316	-1.0017	1.5020	1.2699	499.6	676	.686	1.2115	1.3325	511.7	551	.679
660	5.0759-6	-2304.6	9.5040	27.490	312	1.0191	-1.0010	1.4369	1.2781	505.1	654	.685	1.2146	1.3316	515.6	558	.679
670	4.9991-6	-2290.4	9.5253	27.484	315	1.0113	-1.0006	1.3984	1.2831	510.0	645	.684	1.2175	1.3306	519.3	565	.679
680	4.9249-6	-2276.5	9.5458	27.480	319	1.0066	-1.0004	1.3772	1.2858	514.3	642	.683	1.2203	1.3297	523.0	572	.680
690	4.8532-6	-2262.8	9.5659	27.478	322	1.0039	-1.0002	1.3664	1.2869	518.4	644	.683	1.2231	1.3287	526.7	579	.680
700	4.7836-6	-2249.2	9.5855	27.477	325	1.0023	-1.0001	1.3617	1.2872	522.2	649	.683	1.2259	1.3277	530.3	586	.681
710	4.7161-6	-2235.6	9.6048	27.476	329	1.0014	-1.0001	1.3602	1.2870	525.8	655	.683	1.2287	1.3268	533.9	593	.681
720	4.6506-6	-2222.0	9.6238	27.476	332	1.0008	-1.0000	1.3606	1.2866	529.4	661	.683	1.2315	1.3258	537.5	599	.682
730	4.5868-6	-2208.4	9.6426	27.476	335	1.0005	-1.0000	1.3619	1.2860	533.0	668	.683	1.2342	1.3248	541.0	606	.683
740	4.5248-6	-2194.7	9.6611	27.476	338	1.0003	-1.0000	1.3636	1.2854	536.5	675	.683	1.2369	1.3239	544.5	612	.683
750	4.4645-6	-2181.1	9.6794	27.475	341	1.0002	-1.0000	1.3655	1.2848	540.0	682	.683	1.2397	1.3229	548.0	619	.684
760	4.4057-6	-2167.4	9.6975	27.475	345	1.0001	-1.0000	1.3674	1.2843	543.5	689	.683	1.2424	1.3220	551.4	626	.684
770	4.3485-6	-2153.8	9.7154	27.475	348	1.0001	-1.0000	1.3692	1.2838	546.9	696	.684	1.2451	1.3211	554.8	632	.685
780	4.2927-6	-2140.1	9.7331	27.475	351	1.0001	-1.0000	1.3709	1.2833	550.4	703	.684	1.2478	1.3202	558.2	639	.686
790	4.2384-6	-2126.3	9.7506	27.475	354	1.0000	-1.0000	1.3724	1.2829	553.8	710	.684	1.2504	1.3193	561.6	645	.686
800	4.1854-6	-2112.6	9.7679	27.475	357	1.0000	-1.0000	1.3738	1.2825	557.2	717	.684	1.2531	1.3184	564.9	652	.687
810	4.1337-6	-2098.9	9.7849	27.475	360	1.0000	-1.0000	1.3751	1.2822	560.6	723	.685	1.2558	1.3175	568.3	658	.687
820	4.0833-6	-2085.1	9.8018	27.475	363	1.0000	-1.0000	1.3763	1.2819	564.0	730	.685	1.2584	1.3166	571.6	664	.688
830	4.0341-6	-2071.3	9.8185	27.475	366	1.0000	-1.0000	1.3774	1.2816	567.4	736	.685	1.2611	1.3157	574.9	671	.689
840	3.9861-6	-2057.6	9.8350	27.475	369	1.0000	-1.0000	1.3783	1.2813	570.7	743	.686	1.2637	1.3149	578.1	677	.689
850	3.9392-6	-2043.8	9.8513	27.475	372	1.0000	-1.0000	1.3792	1.2811	574.0	749	.686	1.2663	1.3140	581.4	684	.690
860	3.8934-6	-2030.0	9.8675	27.475	376	1.0000	-1.0000	1.3800	1.2809	577.4	755	.686	1.2689	1.3132	584.6	690	.691
870	3.8486-6	-2016.2	9.8834	27.475	379	1.0000	-1.0000	1.3807	1.2807	580.7	761	.687	1.2715	1.3123	587.8	696	.691
880	3.8049-6	-2002.4	9.8992	27.475	382	1.0000	-1.0000	1.3814	1.2805	584.0	767	.687	1.2740	1.3115	591.0	703	.692
890	3.7622-6	-1988.5	9.9148	27.475	384	1.0000	-1.0000	1.3820	1.2804	587.2	773	.687	1.2766	1.3107	594.1	709	.692
900	3.7204-6	-1974.7	9.9303	27.475	387	1.0000	-1.0000	1.3825	1.2802	590.5	779	.688	1.2791	1.3099	597.3	715	.693
910	3.6795-6	-1960.9	9.9455	27.475	390	1.0000	-1.0000	1.3831	1.2801	593.7	785	.688	1.2816	1.3091	600.4	722	.693
920	3.6395-6	-1947.1	9.9607	27.475	393	1.0000	-1.0000	1.3836	1.2800	596.9	791	.688	1.2841	1.3083	603.5	728	.694
930	3.6003-6	-1933.2	9.9756	27.475	396	1.0000	-1.0000	1.3840	1.2798	600.2	796	.689	1.2865	1.3076	606.6	734	.695
940	3.5620-6	-1919.4	9.9904	27.475	399	1.0000	-1.0000	1.3845	1.2797	603.3	802	.689	1.2890	1.3068	609.7	740	.695
950	3.5246-6	-1905.5	10.0051	27.475	402	1.0000	-1.0000	1.3849	1.2796	606.5	808	.689	1.2914	1.3061	612.8	747	.696
960	3.4878-6	-1891.7	10.0196	27.475	405	1.0000	-1.0000	1.3853	1.2795	609.7	813	.690	1.2938	1.3053	615.8	753	.696
970	3.4519-6	-1877.8	10.0339	27.475	408	1.0000	-1.0000	1.3857	1.2794	612.8	819	.690	1.2961	1.3046	618.8	759	.697
980	3.4167-6	-1864.0	10.0481	27.475	411	1.0000	-1.0000	1.3861	1.2793	615.9	825	.691	1.2984	1.3039	621.8	765	.697
990	3.3821-6	-1850.1	10.0622	27.475	414	1.0000	-1.0000	1.3865	1.2792	619.1	830	.691	1.3007	1.3032	624.8	771	.697

TABLE 16.1D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K				J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
1000	3.3483-6	-1836.2	10.0762	27.475	417	1.0000 -1.0000	1.3868	1.2791	622.2	836	.691	1.3030	1.3025	627.8	778 .698
1050	3.1889-6	-1766.9	10.1439	27.475	431	1.0000 -1.0000	1.3886	1.2786	637.4	863	.693	1.3139	1.2992	642.5	809 .700
1100	3.0439-6	-1697.4	10.2085	27.475	444	1.0000 -1.0000	1.3909	1.2781	652.3	890	.694	1.3244	1.2962	656.9	839 .701
1150	2.9116-6	-1627.8	10.2704	27.475	458	1.0000 -1.0000	1.3936	1.2774	666.7	917	.696	1.3345	1.2933	670.9	870 .703
1200	2.7903-6	-1558.0	10.3298	27.475	471	1.0000 -1.0000	1.3967	1.2766	680.9	944	.697	1.3443	1.2905	684.6	900 .704
1250	2.6787-6	-1488.1	10.3869	27.475	485	1.0000 -1.0000	1.4003	1.2757	694.7	972	.698	1.3536	1.2879	698.0	930 .705
1300	2.5756-6	-1418.0	10.4419	27.475	498	1.0000 -1.0000	1.4043	1.2747	708.1	999	.699	1.3625	1.2855	711.1	960 .706
1350	2.4802-6	-1347.6	10.4949	27.475	511	1.0000 -1.0000	1.4087	1.2736	721.3	1027	.700	1.3711	1.2832	724.0	990 .707
1400	2.3916-6	-1277.1	10.5462	27.475	523	1.0001 -1.0000	1.4134	1.2725	734.2	1056	.700	1.3793	1.2811	736.7	1020 .707
1450	2.3092-6	-1206.3	10.5959	27.475	536	1.0002 -1.0000	1.4187	1.2712	746.9	1087	.699	1.3872	1.2790	749.2	1050 .708
1500	2.2322-6	-1135.2	10.6441	27.475	548	1.0003 -1.0000	1.4247	1.2699	759.2	1120	.698	1.3947	1.2771	761.4	1080 .708
1550	2.1601-6	-1063.8	10.6910	27.474	561	1.0006 -1.0000	1.4318	1.2684	771.3	1156	.695	1.4018	1.2753	773.4	1109 .708
1600	2.0926-6	-992.0	10.7366	27.474	573	1.0010 -1.0000	1.4405	1.2666	783.1	1197	.689	1.4087	1.2736	785.3	1139 .709
1650	2.0291-6	-919.7	10.7810	27.473	585	1.0016 -1.0000	1.4515	1.2644	794.6	1245	.682	1.4152	1.2720	797.0	1169 .708
1700	1.9693-6	-846.8	10.8246	27.471	597	1.0026 -1.0001	1.4664	1.2617	805.7	1304	.671	1.4214	1.2705	808.5	1198 .708
1750	1.9128-6	-773.0	10.8674	27.468	609	1.0043 -1.0001	1.4869	1.2582	816.4	1378	.657	1.4273	1.2692	819.9	1227 .708
1800	1.8594-6	-698.0	10.9096	27.464	621	1.0068 -1.0002	1.5161	1.2534	826.5	1473	.639	1.4329	1.2679	831.2	1257 .708
1850	1.8087-6	-621.1	10.9517	27.458	632	1.0108 -1.0003	1.5591	1.2470	835.8	1598	.617	1.4383	1.2667	842.4	1286 .707
1900	1.7605-6	-541.7	10.9941	27.448	644	1.0171 -1.0005	1.6237	1.2383	844.2	1765	.592	1.4434	1.2656	853.5	1316 .706
1950	1.7144-6	-458.2	11.0375	27.432	655	1.0270 -1.0009	1.7226	1.2266	851.4	1994	.566	1.4483	1.2647	864.6	1346 .705
2000	1.6701-6	-368.5	11.0829	27.408	666	1.0429 -1.0014	1.8754	1.2115	857.3	2312	.540	1.4529	1.2639	875.7	1376 .704
2050	1.6272-6	-269.3	11.1318	27.371	677	1.0679 -1.0022	2.1090	1.1934	862.0	2762	.517	1.4573	1.2633	887.0	1406 .702
2100	1.5851-6	-155.8	11.1866	27.315	688	1.1058 -1.0035	2.4526	1.1740	866.3	3396	.497	1.4614	1.2631	898.5	1437 .700
2150	1.5435-6	-21.9	11.2495	27.231	699	1.1595 -1.0054	2.9240	1.1560	871.1	4271	.478	1.4652	1.2632	910.6	1470 .697
2200	1.5018-6	138.6	11.3233	27.110	709	1.2290 -1.0080	3.5154	1.1412	877.5	5425	.459	1.4688	1.2639	923.5	1503 .693
2250	1.4595-6	331.1	11.4098	26.947	719	1.3117 -1.0112	4.1970	1.1303	885.8	6868	.439	1.4721	1.2652	937.2	1539 .687
2300	1.4166-6	559.3	11.5101	26.736	728	1.4045 -1.0149	4.9364	1.1227	896.1	8586	.419	1.4752	1.2671	952.0	1578 .681
2350	1.3730-6	825.4	11.6245	26.476	737	1.5049 -1.0192	5.7139	1.1177	908.2	10553	.399	1.4782	1.2697	968.0	1620 .672
2400	1.3287-6	1131.1	11.7532	26.167	746	1.6114 -1.0239	6.5201	1.1144	921.8	12726	.382	1.4812	1.2731	985.3	1667 .662
2450	1.2838-6	1477.7	11.8961	25.810	754	1.7225 -1.0291	7.3462	1.1124	937.0	15033	.368	1.4843	1.2772	1004.0	1719 .651
2500	1.2385-6	1865.8	12.0529	25.407	762	1.8352 -1.0346	8.1748	1.1114	953.5	17367	.359	1.4875	1.2820	1024.1	1777 .637
2550	1.1930-6	2294.7	12.2227	24.963	769	1.9444 -1.0402	8.9728	1.1113	971.5	19569	.353	1.4910	1.2876	1045.8	1842 .623
2600	1.1477-6	2761.7	12.4041	24.486	777	2.0426 -1.0456	9.6870	1.1119	990.8	21442	.351	1.4947	1.2939	1068.8	1912 .607
2650	1.1030-6	3260.9	12.5942	23.986	785	2.1199 -1.0503	10.2470	1.1133	1011.3	22773	.353	1.4987	1.3009	1093.1	1988 .591
2700	1.0597-6	3782.5	12.7892	23.477	792	2.1662 -1.0537	10.5745	1.1154	1032.8	23375	.358	1.5029	1.3083	1118.5	2067 .576
2750	1.0183-6	4313.3	12.9840	22.978	800	2.1730 -1.0553	10.6028	1.1184	1054.9	23141	.367	1.5072	1.3159	1144.3	2148 .561
2800	9.7941-7	4837.3	13.1728	22.503	808	2.1368 -1.0549	10.3004	1.1222	1077.5	22085	.377	1.5115	1.3235	1170.2	2228 .548
2850	9.4364-7	5338.2	13.3502	22.068	816	2.0608 -1.0524	9.6885	1.1271	1100.1	20355	.389	1.5156	1.3308	1195.4	2306 .537
2900	9.1123-7	5802.2	13.5116	21.684	825	1.9546 -1.0482	8.8404	1.1332	1122.5	18192	.401	1.5195	1.3375	1219.5	2379 .527
2950	8.8220-7	6220.0	13.6545	21.355	834	1.8314 -1.0429	7.8607	1.1406	1144.6	15866	.413	1.5230	1.3434	1242.2	2447 .519
3000	8.5637-7	6587.8	13.7781	21.081	843	1.7045 -1.0371	6.8552	1.1495	1166.2	13605	.425	1.5261	1.3485	1263.1	2509 .513

TABLE 16.2D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
200	1.7546-4	-2979.9	7.2264	28.795	114	1.0000	-1.0000	1.0483	1.3802	282.3	154	.779	1.0483	1.3802	282.3	154	.779
210	1.6710-4	-2969.4	7.2776	28.795	120	1.0000	-1.0000	1.0501	1.3792	289.2	162	.774	1.0501	1.3792	289.2	162	.774
220	1.5951-4	-2958.9	7.3264	28.795	125	1.0000	-1.0000	1.0521	1.3783	295.9	171	.771	1.0521	1.3783	295.9	171	.771
230	1.5257-4	-2948.3	7.3733	28.795	130	1.0000	-1.0000	1.0541	1.3772	302.4	179	.767	1.0541	1.3773	302.4	179	.767
240	1.4622-4	-2937.8	7.4182	28.795	136	1.0000	-1.0000	1.0563	1.3762	308.8	187	.764	1.0562	1.3762	308.8	187	.765
250	1.4037-4	-2927.2	7.4613	28.795	141	1.0000	-1.0000	1.0585	1.3751	315.1	196	.762	1.0584	1.3751	315.1	196	.762
260	1.3497-4	-2916.6	7.5029	28.795	146	1.0000	-1.0000	1.0608	1.3740	321.2	204	.760	1.0607	1.3740	321.2	204	.760
270	1.2997-4	-2906.0	7.5430	28.795	151	1.0000	-1.0000	1.0632	1.3729	327.2	212	.758	1.0630	1.3729	327.2	212	.759
280	1.2533-4	-2895.4	7.5817	28.795	156	1.0000	-1.0000	1.0657	1.3717	333.0	220	.757	1.0654	1.3718	333.0	220	.757
290	1.2101-4	-2884.7	7.6191	28.795	161	1.0000	-1.0000	1.0683	1.3704	338.8	228	.756	1.0679	1.3706	338.8	227	.757
298	1.1770-4	-2876.0	7.6488	28.795	165	1.0001	-1.0000	1.0706	1.3694	343.3	234	.755	1.0700	1.3696	343.4	234	.756
300	1.1697-4	-2874.0	7.6554	28.795	166	1.0001	-1.0000	1.0711	1.3691	344.4	235	.755	1.0704	1.3694	344.4	235	.756
310	1.1320-4	-2863.3	7.6906	28.795	171	1.0001	-1.0000	1.0741	1.3678	349.9	243	.754	1.0731	1.3682	349.9	242	.756
320	1.0966-4	-2852.5	7.7247	28.795	176	1.0002	-1.0000	1.0774	1.3663	355.3	251	.753	1.0757	1.3669	355.4	250	.756
330	1.0634-4	-2841.7	7.7579	28.795	180	1.0003	-1.0000	1.0810	1.3647	360.6	259	.752	1.0785	1.3656	360.7	257	.756
340	1.0321-4	-2830.9	7.7902	28.794	185	1.0004	-1.0000	1.0850	1.3631	365.8	267	.750	1.0812	1.3644	366.0	264	.756
350	1.0026-4	-2820.0	7.8218	28.794	189	1.0006	-1.0000	1.0895	1.3612	370.9	276	.748	1.0841	1.3631	371.2	271	.757
360	9.7470-5	-2809.1	7.8525	28.793	194	1.0009	-1.0000	1.0946	1.3592	375.9	285	.744	1.0870	1.3618	376.2	279	.756
370	9.4833-5	-2798.1	7.8826	28.792	199	1.0013	-1.0000	1.1005	1.3569	380.8	296	.739	1.0900	1.3604	381.3	286	.755
380	9.2334-5	-2787.1	7.9120	28.791	203	1.0019	-1.0001	1.1075	1.3544	385.5	307	.733	1.0930	1.3591	386.2	294	.755
390	8.9961-5	-2776.0	7.9409	28.790	207	1.0026	-1.0001	1.1155	1.3516	390.2	319	.725	1.0961	1.3578	391.1	302	.754
400	8.7705-5	-2764.8	7.9693	28.787	212	1.0035	-1.0001	1.1250	1.3484	394.7	333	.716	1.0992	1.3564	395.9	309	.753
410	8.5558-5	-2753.5	7.9972	28.784	216	1.0046	-1.0002	1.1361	1.3449	399.1	348	.706	1.1024	1.3550	400.6	317	.753
420	8.3510-5	-2742.0	8.0247	28.781	220	1.0061	-1.0002	1.1491	1.3409	403.4	365	.695	1.1057	1.3537	405.3	324	.752
430	8.1554-5	-2730.5	8.0519	28.776	225	1.0079	-1.0003	1.1643	1.3365	407.5	384	.681	1.1090	1.3523	409.9	331	.752
440	7.9684-5	-2718.7	8.0789	28.770	229	1.0102	-1.0004	1.1820	1.3317	411.5	405	.667	1.1124	1.3510	414.5	339	.751
450	7.7893-5	-2706.8	8.1057	28.763	233	1.0129	-1.0006	1.2026	1.3264	415.4	430	.651	1.1159	1.3496	419.0	346	.750
460	7.6176-5	-2694.7	8.1323	28.753	237	1.0162	-1.0007	1.2263	1.3207	419.1	457	.635	1.1194	1.3483	423.5	354	.750
470	7.4526-5	-2682.3	8.1590	28.742	241	1.0201	-1.0009	1.2534	1.3145	422.8	488	.619	1.1230	1.3469	427.9	361	.749
480	7.2939-5	-2669.6	8.1857	28.729	245	1.0247	-1.0011	1.2842	1.3080	426.3	522	.602	1.1268	1.3456	432.4	369	.748
490	7.1410-5	-2656.6	8.2125	28.713	249	1.0300	-1.0014	1.3191	1.3013	429.7	560	.586	1.1306	1.3443	436.7	377	.747
500	6.9935-5	-2643.2	8.2396	28.693	253	1.0361	-1.0017	1.3582	1.2942	433.0	602	.571	1.1345	1.3430	441.1	385	.745
510	6.8510-5	-2629.4	8.2669	28.671	257	1.0431	-1.0021	1.4017	1.2871	436.3	646	.557	1.1385	1.3418	445.5	393	.744
520	6.7132-5	-2615.2	8.2946	28.645	261	1.0509	-1.0025	1.4497	1.2798	439.5	694	.544	1.1426	1.3406	449.8	401	.742
530	6.5796-5	-2600.4	8.3227	28.615	264	1.0596	-1.0029	1.5022	1.2726	442.7	745	.534	1.1468	1.3394	454.2	410	.740
540	6.4500-5	-2585.1	8.3513	28.580	268	1.0691	-1.0035	1.5592	1.2655	445.9	797	.525	1.1511	1.3382	458.5	419	.737
550	6.3241-5	-2569.2	8.3804	28.542	272	1.0794	-1.0040	1.6204	1.2585	449.0	850	.519	1.1555	1.3371	462.8	428	.734
560	6.2017-5	-2552.7	8.4102	28.498	276	1.0904	-1.0046	1.6856	1.2518	452.2	903	.515	1.1600	1.3360	467.2	438	.731
570	6.0825-5	-2535.5	8.4407	28.450	280	1.1020	-1.0053	1.7542	1.2454	455.5	955	.514	1.1646	1.3350	471.6	447	.728
580	5.9665-5	-2517.6	8.4718	28.396	283	1.1140	-1.0060	1.8257	1.2393	458.8	1005	.515	1.1693	1.3340	476.0	457	.725
590	5.8533-5	-2499.0	8.5036	28.338	287	1.1262	-1.0067	1.8989	1.2335	462.1	1052	.518	1.1741	1.3331	480.4	467	.721

TABLE 16.2D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.7430-5	-2479.6	8.5361	28.275	291	1.1383	-1.0073	1.9727	1.2282	465.5	1095	.524	1.1789	1.3323	484.8	478	.718
610	5.6354-5	-2459.5	8.5694	28.208	294	1.1499	-1.0080	2.0452	1.2233	469.0	1132	.532	1.1838	1.3315	489.3	488	.714
620	5.5305-5	-2438.7	8.6032	28.137	298	1.1605	-1.0086	2.1137	1.2190	472.6	1161	.542	1.1887	1.3308	493.8	499	.710
630	5.4284-5	-2417.3	8.6375	28.062	302	1.1694	-1.0091	2.1746	1.2153	476.3	1181	.555	1.1935	1.3302	498.3	510	.706
640	5.3290-5	-2395.3	8.6721	27.986	305	1.1757	-1.0095	2.2227	1.2125	480.1	1189	.570	1.1983	1.3296	502.8	521	.702
650	5.2326-5	-2372.9	8.7069	27.909	309	1.1783	-1.0097	2.2517	1.2107	484.2	1182	.588	1.2031	1.3291	507.3	532	.698
660	5.1394-5	-2350.3	8.7413	27.834	312	1.1760	-1.0096	2.2540	1.2102	488.5	1159	.607	1.2077	1.3286	511.8	542	.695
670	5.0496-5	-2327.9	8.7750	27.762	315	1.1676	-1.0091	2.2223	1.2115	493.1	1118	.627	1.2121	1.3282	516.2	553	.692
680	4.9635-5	-2306.0	8.8074	27.696	319	1.1525	-1.0083	2.1524	1.2149	498.0	1061	.647	1.2163	1.3277	520.6	562	.689
690	4.8814-5	-2285.0	8.8381	27.638	322	1.1313	-1.0072	2.0471	1.2208	503.4	992	.664	1.2203	1.3272	524.9	572	.687
700	4.8034-5	-2265.1	8.8667	27.591	325	1.1063	-1.0058	1.9184	1.2291	509.2	920	.678	1.2240	1.3266	529.0	581	.686
710	4.7295-5	-2246.6	8.8929	27.554	329	1.0807	-1.0045	1.7851	1.2391	515.2	854	.687	1.2274	1.3260	533.0	589	.685
720	4.6593-5	-2229.4	8.9171	27.528	332	1.0579	-1.0032	1.6656	1.2496	521.3	800	.691	1.2306	1.3253	536.8	597	.684
730	4.5924-5	-2213.2	8.9393	27.509	335	1.0397	-1.0022	1.5705	1.2591	527.1	761	.691	1.2337	1.3245	540.6	604	.684
740	4.5284-5	-2197.9	8.9602	27.497	338	1.0263	-1.0015	1.5015	1.2668	532.4	736	.690	1.2366	1.3237	544.2	612	.684
750	4.4667-5	-2183.1	8.9800	27.489	341	1.0171	-1.0010	1.4548	1.2725	537.3	722	.688	1.2395	1.3228	547.8	618	.684
760	4.4071-5	-2168.7	8.9991	27.484	345	1.0110	-1.0006	1.4246	1.2762	541.7	714	.687	1.2422	1.3219	551.3	625	.685
770	4.3494-5	-2154.6	9.0176	27.481	348	1.0071	-1.0004	1.4057	1.2786	545.8	712	.686	1.2450	1.3210	554.8	632	.685
780	4.2933-5	-2140.6	9.0356	27.479	351	1.0046	-1.0003	1.3942	1.2800	549.6	714	.686	1.2477	1.3201	558.2	638	.686
790	4.2388-5	-2126.7	9.0534	27.478	354	1.0030	-1.0002	1.3874	1.2808	553.3	717	.685	1.2504	1.3192	561.6	645	.686
800	4.1856-5	-2112.8	9.0708	27.477	357	1.0019	-1.0001	1.3835	1.2811	556.9	721	.685	1.2531	1.3184	564.9	652	.687
810	4.1339-5	-2099.0	9.0879	27.476	360	1.0013	-1.0001	1.3814	1.2813	560.4	726	.685	1.2558	1.3175	568.3	658	.688
820	4.0834-5	-2085.2	9.1049	27.476	363	1.0008	-1.0001	1.3804	1.2813	563.9	732	.685	1.2584	1.3166	571.6	664	.688
830	4.0342-5	-2071.4	9.1216	27.476	366	1.0006	-1.0000	1.3801	1.2812	567.3	738	.686	1.2611	1.3157	574.9	671	.689
840	3.9861-5	-2057.6	9.1382	27.476	369	1.0004	-1.0000	1.3801	1.2811	570.6	743	.686	1.2637	1.3149	578.1	677	.689
850	3.9392-5	-2043.8	9.1545	27.476	372	1.0003	-1.0000	1.3804	1.2809	574.0	749	.686	1.2663	1.3140	581.4	684	.690
860	3.8934-5	-2030.0	9.1706	27.475	376	1.0002	-1.0000	1.3808	1.2808	577.3	755	.686	1.2689	1.3132	584.6	690	.691
870	3.8487-5	-2016.2	9.1866	27.475	379	1.0001	-1.0000	1.3813	1.2806	580.6	761	.687	1.2715	1.3123	587.8	696	.691
880	3.8049-5	-2002.4	9.2024	27.475	382	1.0001	-1.0000	1.3818	1.2805	583.9	767	.687	1.2740	1.3115	591.0	703	.692
890	3.7622-5	-1988.6	9.2180	27.475	384	1.0001	-1.0000	1.3822	1.2803	587.2	773	.687	1.2766	1.3107	594.1	709	.692
900	3.7204-5	-1974.7	9.2335	27.475	387	1.0000	-1.0000	1.3827	1.2802	590.5	779	.688	1.2791	1.3099	597.3	715	.693
910	3.6795-5	-1960.9	9.2487	27.475	390	1.0000	-1.0000	1.3832	1.2801	593.7	785	.688	1.2816	1.3091	600.4	722	.693
920	3.6395-5	-1947.1	9.2639	27.475	393	1.0000	-1.0000	1.3837	1.2799	596.9	791	.688	1.2841	1.3083	603.5	728	.694
930	3.6004-5	-1933.2	9.2788	27.475	396	1.0000	-1.0000	1.3841	1.2798	600.2	796	.689	1.2865	1.3076	606.6	734	.695
940	3.5620-5	-1919.4	9.2936	27.475	399	1.0000	-1.0000	1.3845	1.2797	603.3	802	.689	1.2890	1.3068	609.7	740	.695
950	3.5246-5	-1905.5	9.3083	27.475	402	1.0000	-1.0000	1.3849	1.2796	606.5	808	.689	1.2914	1.3061	612.8	747	.696
960	3.4878-5	-1891.7	9.3228	27.475	405	1.0000	-1.0000	1.3853	1.2795	609.7	813	.690	1.2938	1.3053	615.8	753	.696
970	3.4519-5	-1877.8	9.3371	27.475	408	1.0000	-1.0000	1.3857	1.2794	612.8	819	.690	1.2961	1.3046	618.8	759	.697
980	3.4167-5	-1864.0	9.3513	27.475	411	1.0000	-1.0000	1.3861	1.2793	615.9	825	.691	1.2984	1.3039	621.8	765	.697
990	3.3821-5	-1850.1	9.3654	27.475	414	1.0000	-1.0000	1.3865	1.2792	619.1	830	.691	1.3007	1.3032	624.8	771	.697

TABLE 16.2D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3483-5	-1836.2	9.3794	27.475	417	1.0000	-1.0000	1.3868	1.2791	622.2	836	.691	1.3030	1.3025	627.8	778	.698
1050	3.1889-5	-1766.9	9.4471	27.475	431	1.0000	-1.0000	1.3886	1.2786	637.4	863	.693	1.3139	1.2992	642.5	809	.700
1100	3.0439-5	-1697.4	9.5117	27.475	444	1.0000	-1.0000	1.3909	1.2781	652.3	890	.694	1.3244	1.2962	656.9	839	.701
1150	2.9116-5	-1627.8	9.5736	27.475	458	1.0000	-1.0000	1.3936	1.2774	666.7	917	.696	1.3345	1.2933	670.9	870	.703
1200	2.7903-5	-1558.0	9.6330	27.475	471	1.0000	-1.0000	1.3967	1.2766	680.9	944	.697	1.3443	1.2905	684.6	900	.704
1250	2.6787-5	-1488.1	9.6901	27.475	485	1.0000	-1.0000	1.4002	1.2757	694.7	971	.699	1.3536	1.2879	698.0	930	.705
1300	2.5756-5	-1418.0	9.7451	27.475	498	1.0000	-1.0000	1.4041	1.2747	708.2	999	.700	1.3625	1.2855	711.1	960	.706
1350	2.4802-5	-1347.7	9.7981	27.475	511	1.0000	-1.0000	1.4083	1.2737	721.4	1026	.701	1.3711	1.2832	724.0	990	.707
1400	2.3917-5	-1277.1	9.8494	27.475	523	1.0000	-1.0000	1.4127	1.2726	734.3	1054	.701	1.3793	1.2811	736.7	1020	.707
1450	2.3092-5	-1206.4	9.8991	27.475	536	1.0001	-1.0000	1.4174	1.2715	746.9	1082	.702	1.3872	1.2790	749.1	1050	.708
1500	2.2322-5	-1135.4	9.9472	27.475	548	1.0001	-1.0000	1.4223	1.2703	759.4	1111	.702	1.3947	1.2771	761.4	1080	.708
1550	2.1602-5	-1064.2	9.9939	27.475	561	1.0002	-1.0000	1.4276	1.2691	771.5	1142	.701	1.4018	1.2753	773.4	1109	.708
1600	2.0927-5	-992.6	10.0393	27.475	573	1.0003	-1.0000	1.4334	1.2678	783.5	1174	.700	1.4087	1.2736	785.3	1139	.709
1650	2.0292-5	-920.8	10.0835	27.474	585	1.0005	-1.0000	1.4399	1.2664	795.2	1208	.697	1.4152	1.2720	797.0	1168	.709
1700	1.9695-5	-848.6	10.1266	27.474	597	1.0008	-1.0000	1.4474	1.2649	806.7	1245	.694	1.4213	1.2705	808.5	1198	.709
1750	1.9132-5	-776.0	10.1687	27.473	609	1.0013	-1.0000	1.4566	1.2631	817.9	1288	.689	1.4272	1.2691	819.8	1227	.708
1800	1.8599-5	-702.9	10.2099	27.472	621	1.0021	-1.0001	1.4682	1.2609	828.8	1336	.682	1.4328	1.2678	831.1	1256	.708
1850	1.8095-5	-629.2	10.2503	27.470	632	1.0032	-1.0001	1.4833	1.2583	839.4	1394	.673	1.4382	1.2666	842.1	1285	.708
1900	1.7617-5	-554.5	10.2901	27.467	644	1.0049	-1.0002	1.5036	1.2549	849.6	1463	.661	1.4433	1.2654	853.1	1314	.707
1950	1.7163-5	-478.7	10.3295	27.463	655	1.0075	-1.0002	1.5316	1.2506	859.3	1549	.648	1.4481	1.2643	864.0	1343	.707
2000	1.6730-5	-401.2	10.3688	27.456	667	1.0113	-1.0004	1.5709	1.2450	868.3	1658	.632	1.4527	1.2634	874.7	1372	.706
2050	1.6316-5	-321.3	10.4082	27.447	678	1.0170	-1.0006	1.6271	1.2376	876.7	1797	.614	1.4570	1.2625	885.4	1401	.705
2100	1.5920-5	-238.1	10.4483	27.433	689	1.0255	-1.0009	1.7079	1.2282	884.1	1979	.595	1.4612	1.2617	896.1	1429	.704
2150	1.5538-5	-149.9	10.4898	27.412	700	1.0383	-1.0013	1.8241	1.2165	890.7	2219	.575	1.4651	1.2611	906.8	1459	.703
2200	1.5168-5	-54.8	10.5335	27.383	711	1.0569	-1.0020	1.9890	1.2027	896.3	2541	.556	1.4688	1.2606	917.6	1488	.701
2250	1.4808-5	50.0	10.5806	27.340	721	1.0833	-1.0029	2.2158	1.1878	901.5	2969	.538	1.4722	1.2603	928.6	1518	.700
2300	1.4455-5	167.9	10.6325	27.280	732	1.1189	-1.0043	2.5127	1.1732	906.8	3530	.521	1.4755	1.2603	939.9	1548	.697
2350	1.4104-5	302.4	10.6903	27.198	742	1.1642	-1.0060	2.8775	1.1600	912.9	4244	.503	1.4784	1.2607	951.7	1580	.694
2400	1.3755-5	456.6	10.7552	27.089	752	1.2179	-1.0082	3.2966	1.1493	920.1	5117	.484	1.4812	1.2614	963.9	1612	.691
2450	1.3406-5	632.7	10.8278	26.951	761	1.2782	-1.0107	3.7515	1.1411	928.7	6146	.465	1.4837	1.2625	976.8	1646	.686
2500	1.3056-5	832.1	10.9083	26.783	770	1.3432	-1.0136	4.2262	1.1350	938.5	7322	.445	1.4861	1.2641	990.5	1682	.681
2550	1.2704-5	1055.5	10.9968	26.583	779	1.4117	-1.0167	4.7112	1.1307	949.6	8632	.425	1.4883	1.2661	1004.9	1720	.674
2600	1.2352-5	1303.3	11.0930	26.354	788	1.4829	-1.0202	5.2022	1.1276	961.8	10060	.408	1.4905	1.2685	1020.1	1762	.667
2650	1.2000-5	1575.8	11.1968	26.094	797	1.5565	-1.0239	5.6971	1.1257	974.9	11583	.392	1.4927	1.2714	1036.1	1806	.658
2700	1.1648-5	1873.0	11.3079	25.806	805	1.6317	-1.0278	6.1927	1.1245	989.0	13166	.379	1.4949	1.2747	1053.0	1854	.649
2750	1.1296-5	2194.9	11.4261	25.491	813	1.7072	-1.0320	6.6826	1.1240	1004.1	14760	.368	1.4973	1.2785	1070.9	1905	.639
2800	1.0947-5	2541.0	11.5508	25.152	821	1.7811	-1.0362	7.1555	1.1240	1020.0	16303	.360	1.4997	1.2827	1089.6	1961	.628
2850	1.0601-5	2909.9	11.6813	24.791	829	1.8506	-1.0404	7.5945	1.1246	1036.8	17716	.355	1.5023	1.2874	1109.3	2021	.616
2900	1.0259-5	3299.5	11.8168	24.413	837	1.9121	-1.0444	7.9775	1.1257	1054.4	18912	.353	1.5050	1.2925	1129.8	2084	.604
2950	9.9249-6	3706.3	11.9559	24.025	844	1.9618	-1.0479	8.2784	1.1274	1072.8	19808	.353	1.5079	1.2979	1151.1	2151	.592
3000	9.6001-6	4125.5	12.0968	23.633	852	1.9956	-1.0508	8.4709	1.1295	1091.9	20328	.355	1.5109	1.3035	1173.0	2221	.580

TABLE 16.3D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	1.7546-3	-2979.9	6.5615	28.795	114	1.0000	-1.0000	1.0483	1.3802	282.3	154 .779	1.0483	1.3802	282.3	154 .779
210	1.6710-3	-2969.4	6.6127	28.795	120	1.0000	-1.0000	1.0501	1.3792	289.2	162 .774	1.0501	1.3792	289.2	162 .774
220	1.5951-3	-2958.9	6.6616	28.795	125	1.0000	-1.0000	1.0521	1.3783	295.9	171 .771	1.0521	1.3783	295.9	171 .771
230	1.5257-3	-2948.3	6.7084	28.795	130	1.0000	-1.0000	1.0541	1.3772	302.4	179 .767	1.0541	1.3773	302.4	179 .767
240	1.4622-3	-2937.8	6.7533	28.795	136	1.0000	-1.0000	1.0562	1.3762	308.8	187 .765	1.0562	1.3762	308.8	187 .765
250	1.4037-3	-2927.2	6.7965	28.795	141	1.0000	-1.0000	1.0584	1.3751	315.1	196 .762	1.0584	1.3751	315.1	196 .762
260	1.3497-3	-2916.6	6.8380	28.795	146	1.0000	-1.0000	1.0607	1.3740	321.2	204 .760	1.0607	1.3740	321.2	204 .760
270	1.2997-3	-2906.0	6.8781	28.795	151	1.0000	-1.0000	1.0631	1.3729	327.2	212 .759	1.0630	1.3729	327.2	212 .759
280	1.2533-3	-2895.4	6.9168	28.795	156	1.0000	-1.0000	1.0655	1.3717	333.0	220 .757	1.0654	1.3718	333.0	220 .757
290	1.2101-3	-2884.7	6.9543	28.795	161	1.0000	-1.0000	1.0681	1.3705	338.8	227 .756	1.0679	1.3706	338.8	227 .757
298	1.1770-3	-2876.0	6.9839	28.795	165	1.0000	-1.0000	1.0702	1.3695	343.4	234 .756	1.0700	1.3696	343.4	234 .756
300	1.1697-3	-2874.0	6.9905	28.795	166	1.0000	-1.0000	1.0707	1.3693	344.4	235 .756	1.0704	1.3694	344.4	235 .756
310	1.1320-3	-2863.3	7.0257	28.795	171	1.0000	-1.0000	1.0734	1.3680	349.9	243 .755	1.0730	1.3682	349.9	242 .756
320	1.0966-3	-2852.5	7.0598	28.795	176	1.0001	-1.0000	1.0763	1.3667	355.4	250 .755	1.0757	1.3669	355.4	250 .756
330	1.0634-3	-2841.8	7.0929	28.795	180	1.0001	-1.0000	1.0793	1.3653	360.7	258 .755	1.0784	1.3656	360.7	257 .756
340	1.0321-3	-2830.9	7.1252	28.795	185	1.0001	-1.0000	1.0824	1.3639	365.9	265 .755	1.0812	1.3644	366.0	264 .756
350	1.0026-3	-2820.1	7.1566	28.795	189	1.0002	-1.0000	1.0858	1.3624	371.1	273 .754	1.0841	1.3631	371.2	271 .757
360	9.7475-4	-2809.2	7.1873	28.795	194	1.0003	-1.0000	1.0894	1.3609	376.1	281 .752	1.0870	1.3617	376.2	279 .756
370	9.4840-4	-2798.3	7.2172	28.794	199	1.0004	-1.0000	1.0933	1.3593	381.1	289 .750	1.0899	1.3604	381.2	286 .756
380	9.2343-4	-2787.4	7.2464	28.794	203	1.0006	-1.0000	1.0975	1.3575	386.0	298 .748	1.0929	1.3591	386.2	294 .755
390	8.9973-4	-2776.4	7.2750	28.793	207	1.0008	-1.0000	1.1022	1.3557	390.7	307 .745	1.0959	1.3577	391.0	301 .754
400	8.7722-4	-2765.3	7.3029	28.793	212	1.0011	-1.0000	1.1073	1.3538	395.4	316 .741	1.0990	1.3564	395.8	309 .754
410	8.5580-4	-2754.2	7.3303	28.792	216	1.0015	-1.0001	1.1130	1.3517	400.0	326 .737	1.1022	1.3550	400.5	316 .753
420	8.3539-4	-2743.1	7.3572	28.791	220	1.0019	-1.0001	1.1193	1.3494	404.6	337 .733	1.1054	1.3537	405.2	323 .753
430	8.1592-4	-2731.8	7.3836	28.789	224	1.0025	-1.0001	1.1263	1.3470	409.0	348 .727	1.1086	1.3523	409.8	331 .753
440	7.9732-4	-2720.5	7.4096	28.787	229	1.0032	-1.0001	1.1343	1.3444	413.3	360 .721	1.1119	1.3509	414.3	338 .752
450	7.7954-4	-2709.1	7.4352	28.785	233	1.0041	-1.0002	1.1432	1.3415	417.6	372 .714	1.1152	1.3495	418.8	345 .752
460	7.6251-4	-2697.7	7.4605	28.782	237	1.0052	-1.0002	1.1531	1.3385	421.7	387 .706	1.1186	1.3482	423.3	352 .752
470	7.4620-4	-2686.1	7.4854	28.778	241	1.0065	-1.0003	1.1644	1.3352	425.8	402 .698	1.1220	1.3468	427.6	360 .751
480	7.3054-4	-2674.4	7.5100	28.774	245	1.0081	-1.0004	1.1770	1.3318	429.8	419 .688	1.1255	1.3454	432.0	367 .751
490	7.1550-4	-2662.5	7.5344	28.769	249	1.0099	-1.0005	1.1911	1.3280	433.7	437 .678	1.1290	1.3440	436.3	374 .751
500	7.0103-4	-2650.5	7.5586	28.762	253	1.0120	-1.0006	1.2069	1.3240	437.5	457 .667	1.1326	1.3427	440.5	381 .750
510	6.8711-4	-2638.4	7.5827	28.755	257	1.0145	-1.0007	1.2245	1.3198	441.2	480 .655	1.1362	1.3413	444.8	389 .750
520	6.7369-4	-2626.0	7.6067	28.746	260	1.0173	-1.0008	1.2441	1.3154	444.8	504 .643	1.1399	1.3400	448.9	396 .749
530	6.6074-4	-2613.5	7.6306	28.736	264	1.0206	-1.0010	1.2659	1.3107	448.3	530 .631	1.1436	1.3387	453.1	404 .748
540	6.4823-4	-2600.7	7.6545	28.724	268	1.0243	-1.0012	1.2899	1.3058	451.8	558 .619	1.1474	1.3374	457.2	412 .747
550	6.3614-4	-2587.7	7.6784	28.710	272	1.0285	-1.0014	1.3165	1.3008	455.2	589 .608	1.1512	1.3361	461.3	420 .746
560	6.2443-4	-2574.4	7.7023	28.694	276	1.0332	-1.0017	1.3457	1.2956	458.5	622 .597	1.1551	1.3349	465.4	428 .744
570	6.1309-4	-2560.8	7.7264	28.676	279	1.0384	-1.0020	1.3778	1.2902	461.8	657 .586	1.1591	1.3336	469.5	436 .743
580	6.0209-4	-2546.8	7.7507	28.655	283	1.0442	-1.0023	1.4128	1.2847	465.0	694 .577	1.1630	1.3324	473.5	444 .741
590	5.9140-4	-2532.5	7.7752	28.632	287	1.0506	-1.0027	1.4509	1.2791	468.1	732 .568	1.1671	1.3312	477.6	453 .740

TABLE 16.3D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO ◘ 1.250; CHEM. EQUIV. RATIO ◘ 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
600	5.8102-4	-2517.8	7.7999	28.606	290	1.0575	-1.0031	1.4922	1.2735	471.3	773 .561	1.1712	1.3301	481.6	461 .738
610	5.7091-4	-2502.6	7.8249	28.577	294	1.0651	-1.0035	1.5369	1.2678	474.3	814 .555	1.1753	1.3290	485.7	470 .736
620	5.6108-4	-2487.0	7.8503	28.545	298	1.0733	-1.0040	1.5849	1.2621	477.4	857 .550	1.1795	1.3279	489.7	479 .733
630	5.5148-4	-2470.9	7.8761	28.509	301	1.0820	-1.0045	1.6364	1.2565	480.5	901 .547	1.1837	1.3269	493.8	488 .731
640	5.4213-4	-2454.3	7.9023	28.471	305	1.0913	-1.0051	1.6912	1.2509	483.5	945 .545	1.1880	1.3260	497.8	497 .729
650	5.3299-4	-2437.1	7.9289	28.428	308	1.1011	-1.0056	1.7492	1.2454	486.6	989 .545	1.1923	1.3250	501.9	506 .726
660	5.2407-4	-2419.3	7.9561	28.382	312	1.1112	-1.0062	1.8101	1.2401	489.7	1032 .547	1.1966	1.3242	506.0	516 .723
670	5.1534-4	-2400.9	7.9838	28.333	315	1.1217	-1.0068	1.8731	1.2350	492.8	1074 .550	1.2009	1.3234	510.1	525 .721
680	5.0681-4	-2381.8	8.0120	28.279	319	1.1322	-1.0075	1.9374	1.2301	495.9	1114 .554	1.2052	1.3227	514.2	535 .718
690	4.9846-4	-2362.1	8.0408	28.223	322	1.1426	-1.0081	2.0017	1.2256	499.1	1151 .560	1.2096	1.3220	518.4	545 .715
700	4.9030-4	-2341.8	8.0700	28.163	325	1.1524	-1.0087	2.0640	1.2215	502.4	1183 .568	1.2139	1.3214	522.6	555 .712
710	4.8232-4	-2320.9	8.0997	28.100	329	1.1613	-1.0092	2.1217	1.2179	505.8	1208 .577	1.2181	1.3208	526.8	565 .709
720	4.7452-4	-2299.4	8.1297	28.035	332	1.1685	-1.0096	2.1714	1.2149	509.3	1226 .588	1.2223	1.3204	531.0	575 .706
730	4.6692-4	-2277.5	8.1600	27.969	335	1.1735	-1.0099	2.2088	1.2127	513.0	1234 .600	1.2264	1.3199	535.2	585 .704
740	4.5952-4	-2255.3	8.1902	27.903	339	1.1752	-1.0100	2.2292	1.2115	516.9	1229 .614	1.2305	1.3195	539.4	594 .701
750	4.5233-4	-2233.0	8.2201	27.838	342	1.1729	-1.0099	2.2278	1.2114	520.9	1211 .629	1.2344	1.3192	543.6	604 .699
760	4.4538-4	-2210.8	8.2495	27.775	345	1.1660	-1.0096	2.2006	1.2127	525.3	1179 .644	1.2382	1.3188	547.8	613 .696
770	4.3867-4	-2189.1	8.2779	27.717	348	1.1540	-1.0089	2.1459	1.2155	529.9	1134 .659	1.2419	1.3185	551.9	622 .694
780	4.3223-4	-2168.0	8.3051	27.665	351	1.1375	-1.0080	2.0658	1.2199	534.8	1079 .672	1.2454	1.3181	555.9	631 .693
790	4.2607-4	-2147.8	8.3308	27.620	354	1.1176	-1.0069	1.9670	1.2259	539.9	1020 .683	1.2487	1.3177	559.8	639 .692
800	4.2017-4	-2128.7	8.3549	27.583	357	1.0962	-1.0056	1.8597	1.2332	545.3	962 .691	1.2519	1.3172	563.6	647 .691
810	4.1455-4	-2110.6	8.3773	27.553	360	1.0754	-1.0044	1.7551	1.2413	550.8	910 .695	1.2549	1.3166	567.3	655 .690
820	4.0916-4	-2093.5	8.3983	27.531	363	1.0570	-1.0034	1.6623	1.2494	556.2	867 .696	1.2578	1.3160	570.9	662 .690
830	4.0399-4	-2077.3	8.4180	27.514	366	1.0418	-1.0025	1.5861	1.2567	561.4	835 .696	1.2607	1.3153	574.4	669 .690
840	3.9901-4	-2061.7	8.4366	27.503	369	1.0300	-1.0018	1.5273	1.2629	566.3	813 .695	1.2634	1.3145	577.8	676 .690
850	3.9420-4	-2046.7	8.4544	27.494	373	1.0213	-1.0013	1.4839	1.2678	570.9	798 .693	1.2661	1.3138	581.1	683 .691
860	3.8953-4	-2032.0	8.4716	27.489	376	1.0149	-1.0009	1.4529	1.2715	575.1	789 .692	1.2688	1.3130	584.4	689 .691
870	3.8500-4	-2017.6	8.4882	27.485	379	1.0104	-1.0006	1.4313	1.2741	579.1	785 .690	1.2714	1.3122	587.7	696 .692
880	3.8058-4	-2003.4	8.5045	27.482	382	1.0073	-1.0005	1.4165	1.2759	582.8	783 .690	1.2740	1.3114	590.9	702 .692
890	3.7628-4	-1989.3	8.5204	27.480	385	1.0051	-1.0003	1.4064	1.2772	586.4	784 .689	1.2765	1.3106	594.1	709 .693
900	3.7208-4	-1975.2	8.5361	27.479	387	1.0036	-1.0002	1.3996	1.2780	589.9	787 .689	1.2791	1.3099	597.2	715 .693
910	3.6798-4	-1961.3	8.5515	27.478	390	1.0026	-1.0002	1.3950	1.2785	593.3	790 .689	1.2816	1.3091	600.4	721 .694
920	3.6397-4	-1947.3	8.5668	27.477	393	1.0018	-1.0001	1.3920	1.2789	596.7	795 .689	1.2841	1.3083	603.5	728 .694
930	3.6005-4	-1933.4	8.5818	27.477	396	1.0013	-1.0001	1.3900	1.2791	600.0	799 .689	1.2865	1.3075	606.6	734 .695
940	3.5622-4	-1919.5	8.5967	27.476	399	1.0010	-1.0001	1.3887	1.2792	603.2	804 .689	1.2890	1.3068	609.7	740 .695
950	3.5247-4	-1905.6	8.6114	27.476	402	1.0007	-1.0000	1.3880	1.2792	606.4	809 .690	1.2914	1.3060	612.7	747 .696
960	3.4879-4	-1891.8	8.6259	27.476	405	1.0005	-1.0000	1.3875	1.2792	609.6	814 .690	1.2938	1.3053	615.8	753 .696
970	3.4519-4	-1877.9	8.6403	27.476	408	1.0004	-1.0000	1.3873	1.2792	612.8	820 .690	1.2961	1.3046	618.8	759 .697
980	3.4167-4	-1864.0	8.6545	27.476	411	1.0003	-1.0000	1.3873	1.2792	615.9	825 .691	1.2984	1.3039	621.8	765 .697
990	3.3822-4	-1850.1	8.6686	27.476	414	1.0002	-1.0000	1.3874	1.2791	619.0	831 .691	1.3007	1.3032	624.8	771 .697

TABLE 16.3D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3484-4	-1836.3	8.6825	27.476	417	1.0002	-1.0000	1.3875	1.2790	622.1	836	.691	1.3030	1.3025	627.8	778	.698
1050	3.1889-4	-1766.9	8.7503	27.475	431	1.0001	-1.0000	1.3888	1.2786	637.4	863	.693	1.3139	1.2992	642.5	809	.700
1100	3.0439-4	-1697.4	8.8149	27.475	444	1.0000	-1.0000	1.3909	1.2781	652.3	890	.694	1.3244	1.2962	656.9	839	.701
1150	2.9116-4	-1627.8	8.8768	27.475	458	1.0000	-1.0000	1.3936	1.2774	666.7	917	.696	1.3345	1.2933	670.9	870	.703
1200	2.7903-4	-1558.0	8.9362	27.475	471	1.0000	-1.0000	1.3967	1.2766	680.9	944	.697	1.3443	1.2905	684.6	900	.704
1250	2.6787-4	-1488.1	8.9933	27.475	485	1.0000	-1.0000	1.4002	1.2757	694.7	971	.699	1.3536	1.2879	698.0	930	.705
1300	2.5756-4	-1418.0	9.0482	27.475	498	1.0000	-1.0000	1.4040	1.2747	708.2	998	.700	1.3625	1.2855	711.1	960	.706
1350	2.4802-4	-1347.7	9.1013	27.475	511	1.0000	-1.0000	1.4082	1.2737	721.4	1026	.701	1.3711	1.2832	724.0	990	.707
1400	2.3917-4	-1277.2	9.1526	27.475	523	1.0000	-1.0000	1.4125	1.2727	734.3	1053	.702	1.3793	1.2811	736.7	1020	.707
1450	2.3092-4	-1206.4	9.2023	27.475	536	1.0000	-1.0000	1.4169	1.2716	747.0	1081	.702	1.3872	1.2790	749.1	1050	.708
1500	2.2322-4	-1135.5	9.2504	27.475	548	1.0000	-1.0000	1.4215	1.2705	759.4	1109	.703	1.3947	1.2771	761.4	1080	.708
1550	2.1602-4	-1064.3	9.2971	27.475	561	1.0001	-1.0000	1.4263	1.2694	771.6	1137	.703	1.4018	1.2753	773.4	1109	.708
1600	2.0927-4	-992.8	9.3424	27.475	573	1.0001	-1.0000	1.4311	1.2682	783.6	1166	.703	1.4086	1.2736	785.3	1139	.709
1650	2.0293-4	-921.2	9.3865	27.475	585	1.0002	-1.0000	1.4362	1.2671	795.4	1196	.702	1.4151	1.2720	797.0	1168	.709
1700	1.9696-4	-849.2	9.4295	27.475	597	1.0003	-1.0000	1.4415	1.2659	807.0	1227	.701	1.4213	1.2705	808.5	1198	.709
1750	1.9133-4	-777.0	9.4713	27.475	609	1.0004	-1.0000	1.4473	1.2646	818.4	1259	.700	1.4272	1.2691	819.8	1227	.708
1800	1.8601-4	-704.5	9.5122	27.474	621	1.0006	-1.0000	1.4538	1.2633	829.5	1293	.697	1.4328	1.2678	831.0	1256	.708
1850	1.8098-4	-631.6	9.5521	27.474	632	1.0010	-1.0000	1.4612	1.2618	840.5	1330	.694	1.4382	1.2665	842.1	1285	.708
1900	1.7621-4	-558.3	9.5912	27.473	644	1.0015	-1.0000	1.4700	1.2602	851.2	1371	.690	1.4432	1.2653	853.0	1313	.707
1950	1.7168-4	-484.6	9.6295	27.471	655	1.0023	-1.0001	1.4808	1.2582	861.7	1417	.685	1.4480	1.2642	863.8	1342	.707
2000	1.6738-4	-410.2	9.6672	27.469	667	1.0033	-1.0001	1.4945	1.2559	871.9	1469	.678	1.4526	1.2632	874.5	1371	.706
2050	1.6328-4	-335.1	9.7043	27.467	678	1.0049	-1.0002	1.5122	1.2531	881.8	1529	.670	1.4569	1.2623	885.0	1399	.706
2100	1.5937-4	-258.9	9.7410	27.463	689	1.0071	-1.0002	1.5355	1.2496	891.3	1600	.661	1.4611	1.2614	895.5	1427	.705
2150	1.5563-4	-181.4	9.7775	27.457	700	1.0102	-1.0003	1.5666	1.2452	900.4	1687	.650	1.4650	1.2606	905.9	1455	.705
2200	1.5205-4	-102.1	9.8140	27.450	711	1.0146	-1.0005	1.6086	1.2397	908.9	1792	.638	1.4687	1.2598	916.3	1484	.704
2250	1.4862-4	-20.3	9.8507	27.439	722	1.0208	-1.0007	1.6653	1.2329	916.8	1924	.625	1.4722	1.2592	926.5	1512	.703
2300	1.4531-4	64.8	9.8881	27.424	732	1.0295	-1.0010	1.7418	1.2247	924.1	2089	.611	1.4755	1.2586	936.8	1540	.702
2350	1.4211-4	154.3	9.9266	27.403	743	1.0416	-1.0015	1.8439	1.2151	930.8	2297	.597	1.4787	1.2582	947.2	1569	.700
2400	1.3900-4	249.7	9.9668	27.374	754	1.0578	-1.0021	1.9776	1.2044	937.0	2560	.582	1.4816	1.2579	957.6	1598	.699
2450	1.3597-4	352.7	10.0092	27.336	764	1.0791	-1.0030	2.1473	1.1933	943.0	2890	.568	1.4844	1.2577	968.1	1627	.697
2500	1.3301-4	465.1	10.0546	27.285	774	1.1059	-1.0040	2.3543	1.1824	949.1	3297	.553	1.4869	1.2577	978.9	1656	.695
2550	1.3009-4	588.7	10.1036	27.220	784	1.1380	-1.0054	2.5954	1.1724	955.6	3787	.537	1.4893	1.2580	989.9	1687	.692
2600	1.2720-4	725.1	10.1565	27.138	794	1.1749	-1.0070	2.8629	1.1638	962.8	4362	.521	1.4915	1.2585	1001.3	1718	.689
2650	1.2434-4	875.3	10.2138	27.037	803	1.2154	-1.0088	3.1474	1.1568	970.9	5019	.504	1.4935	1.2593	1013.0	1749	.686
2700	1.2150-4	1039.9	10.2753	26.918	813	1.2584	-1.0108	3.4400	1.1512	979.8	5753	.486	1.4954	1.2603	1025.2	1782	.682
2750	1.1867-4	1219.3	10.3411	26.779	822	1.3032	-1.0130	3.7345	1.1470	989.6	6557	.468	1.4971	1.2616	1037.9	1815	.678
2800	1.1587-4	1413.4	10.4110	26.623	831	1.3492	-1.0154	4.0273	1.1439	1000.1	7425	.450	1.4988	1.2632	1051.0	1850	.673
2850	1.1309-4	1622.0	10.4849	26.448	839	1.3960	-1.0179	4.3171	1.1416	1011.4	8352	.434	1.5004	1.2651	1064.6	1887	.667
2900	1.1033-4	1845.0	10.5625	26.255	848	1.4436	-1.0205	4.6033	1.1401	1023.2	9328	.418	1.5020	1.2672	1078.8	1925	.661
2950	1.0760-4	2082.3	10.6436	26.046	856	1.4918	-1.0233	4.8858	1.1391	1035.7	10344	.404	1.5036	1.2695	1093.4	1966	.655
3000	1.0489-4	2333.5	10.7280	25.821	864	1.5402	-1.0262	5.1636	1.1386	1048.8	11383	.392	1.5052	1.2721	1108.5	2009	.648

TABLE 16.4D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
200	1.7546-2	-2979.9	5.8966	28.795	114	1.0000	-1.0000	1.0483	1.3802	282.3	154	.779	1.0483	1.3802	282.3	154	.779
210	1.6710-2	-2969.4	5.9478	28.795	120	1.0000	-1.0000	1.0502	1.3792	289.2	162	.774	1.0501	1.3792	289.2	162	.774
220	1.5951-2	-2958.9	5.9967	28.795	125	1.0000	-1.0000	1.0521	1.3783	295.9	171	.771	1.0521	1.3783	295.9	171	.771
230	1.5257-2	-2948.3	6.0435	28.795	130	1.0000	-1.0000	1.0541	1.3772	302.4	179	.767	1.0541	1.3773	302.4	179	.767
240	1.4622-2	-2937.8	6.0885	28.795	136	1.0000	-1.0000	1.0563	1.3762	308.8	187	.765	1.0562	1.3762	308.8	187	.765
250	1.4037-2	-2927.2	6.1316	28.795	141	1.0000	-1.0000	1.0584	1.3751	315.1	196	.762	1.0584	1.3751	315.1	196	.762
260	1.3497-2	-2916.6	6.1732	28.795	146	1.0000	-1.0000	1.0607	1.3740	321.2	204	.760	1.0607	1.3740	321.2	204	.760
270	1.2997-2	-2906.0	6.2133	28.795	151	1.0000	-1.0000	1.0631	1.3729	327.2	212	.759	1.0630	1.3729	327.2	212	.759
280	1.2533-2	-2895.4	6.2520	28.795	156	1.0000	-1.0000	1.0655	1.3717	333.0	220	.757	1.0654	1.3718	333.0	220	.757
290	1.2101-2	-2884.7	6.2894	28.795	161	1.0000	-1.0000	1.0680	1.3705	338.8	227	.757	1.0679	1.3706	338.8	227	.757
298	1.1770-2	-2876.0	6.3190	28.795	165	1.0000	-1.0000	1.0701	1.3696	343.4	234	.756	1.0700	1.3696	343.4	234	.756
300	1.1697-2	-2874.0	6.3256	28.795	166	1.0000	-1.0000	1.0706	1.3693	344.4	235	.756	1.0704	1.3694	344.4	235	.756
310	1.1320-2	-2863.3	6.3608	28.795	171	1.0000	-1.0000	1.0732	1.3681	349.9	242	.756	1.0730	1.3682	349.9	242	.756
320	1.0966-2	-2852.5	6.3949	28.795	176	1.0000	-1.0000	1.0759	1.3668	355.4	250	.756	1.0757	1.3669	355.4	250	.756
330	1.0634-2	-2841.8	6.4281	28.795	180	1.0000	-1.0000	1.0788	1.3655	360.7	257	.756	1.0784	1.3656	360.7	257	.756
340	1.0321-2	-2831.0	6.4603	28.795	185	1.0000	-1.0000	1.0817	1.3642	366.0	265	.756	1.0812	1.3644	366.0	264	.756
350	1.0026-2	-2820.1	6.4917	28.795	189	1.0000	-1.0000	1.0847	1.3628	371.1	272	.756	1.0841	1.3631	371.1	271	.757
360	9.7477-3	-2809.3	6.5223	28.795	194	1.0001	-1.0000	1.0878	1.3614	376.2	280	.755	1.0869	1.3617	376.2	279	.756
370	9.4842-3	-2798.4	6.5521	28.795	199	1.0001	-1.0000	1.0910	1.3600	381.2	287	.754	1.0899	1.3604	381.2	286	.756
380	9.2346-3	-2787.4	6.5813	28.795	203	1.0002	-1.0000	1.0944	1.3585	386.1	295	.753	1.0929	1.3591	386.2	294	.755
390	8.9977-3	-2776.5	6.6098	28.795	207	1.0002	-1.0000	1.0980	1.3570	390.9	303	.751	1.0959	1.3577	391.0	301	.754
400	8.7727-3	-2765.5	6.6376	28.794	212	1.0003	-1.0000	1.1017	1.3555	395.7	311	.750	1.0990	1.3564	395.8	309	.754
410	8.5587-3	-2754.5	6.6649	28.794	216	1.0004	-1.0000	1.1056	1.3539	400.4	319	.748	1.1021	1.3550	400.5	316	.753
420	8.3548-3	-2743.4	6.6916	28.794	220	1.0006	-1.0000	1.1098	1.3522	405.0	328	.747	1.1053	1.3536	405.2	323	.753
430	8.1604-3	-2732.3	6.7177	28.793	224	1.0008	-1.0000	1.1142	1.3505	409.5	336	.745	1.1085	1.3523	409.8	331	.753
440	7.9747-3	-2721.1	6.7434	28.793	229	1.0010	-1.0000	1.1190	1.3487	414.0	345	.742	1.1117	1.3509	414.3	338	.753
450	7.7973-3	-2709.9	6.7686	28.792	233	1.0013	-1.0001	1.1240	1.3468	418.3	354	.740	1.1150	1.3495	418.8	345	.753
460	7.6276-3	-2698.6	6.7934	28.791	237	1.0016	-1.0001	1.1295	1.3449	422.7	363	.737	1.1184	1.3481	423.2	352	.752
470	7.4650-3	-2687.3	6.8177	28.790	241	1.0020	-1.0001	1.1354	1.3428	426.9	373	.734	1.1217	1.3467	427.5	359	.752
480	7.3091-3	-2675.9	6.8417	28.789	245	1.0025	-1.0001	1.1417	1.3407	431.1	383	.730	1.1251	1.3453	431.9	366	.752
490	7.1595-3	-2664.4	6.8653	28.787	249	1.0031	-1.0001	1.1486	1.3385	435.2	394	.726	1.1285	1.3440	436.1	373	.752
500	7.0159-3	-2652.9	6.8886	28.785	253	1.0038	-1.0002	1.1560	1.3362	439.3	405	.721	1.1320	1.3426	440.3	380	.752
510	6.8777-3	-2641.3	6.9115	28.783	257	1.0046	-1.0002	1.1641	1.3337	443.3	417	.715	1.1355	1.3412	444.5	387	.752
520	6.7448-3	-2629.6	6.9342	28.780	260	1.0056	-1.0003	1.1729	1.3312	447.2	430	.709	1.1390	1.3398	448.6	395	.751
530	6.6168-3	-2617.9	6.9567	28.776	264	1.0066	-1.0003	1.1824	1.3285	451.0	444	.703	1.1426	1.3385	452.7	402	.751
540	6.4933-3	-2606.0	6.9789	28.772	268	1.0079	-1.0004	1.1929	1.3257	454.8	459	.696	1.1462	1.3371	456.8	410	.750
550	6.3743-3	-2594.0	7.0008	28.768	272	1.0093	-1.0005	1.2042	1.3228	458.6	475	.689	1.1498	1.3358	460.8	417	.750
560	6.2593-3	-2581.9	7.0227	28.763	276	1.0109	-1.0006	1.2166	1.3197	462.2	492	.681	1.1534	1.3344	464.8	424	.749
570	6.1482-3	-2569.7	7.0443	28.757	279	1.0128	-1.0007	1.2300	1.3165	465.8	510	.674	1.1571	1.3331	468.7	432	.748
580	6.0408-3	-2557.3	7.0658	28.750	283	1.0149	-1.0008	1.2447	1.3132	469.3	529	.666	1.1608	1.3318	472.6	440	.747
590	5.9368-3	-2544.8	7.0872	28.742	287	1.0172	-1.0009	1.2607	1.3097	472.8	550	.658	1.1645	1.3305	476.5	447	.747

TABLE 16.4D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
600	5.8360-3	-2532.1	7.1086	28.733	290	1.0198	-1.0011	1.2781	1.3061	476.2	571 .649	1.1682	1.3293	480.4	455 .746
610	5.7383-3	-2519.2	7.1298	28.723	294	1.0227	-1.0012	1.2970	1.3024	479.5	595 .641	1.1720	1.3280	484.2	463 .745
620	5.6435-3	-2506.1	7.1511	28.712	298	1.0259	-1.0014	1.3176	1.2985	482.8	619 .633	1.1758	1.3268	488.1	471 .744
630	5.5515-3	-2492.8	7.1724	28.699	301	1.0294	-1.0016	1.3400	1.2945	486.1	645 .626	1.1796	1.3256	491.9	479 .742
640	5.4621-3	-2479.3	7.1936	28.685	305	1.0334	-1.0019	1.3643	1.2903	489.2	672 .618	1.1834	1.3244	495.7	487 .741
650	5.3751-3	-2465.6	7.2150	28.669	308	1.0377	-1.0021	1.3906	1.2860	492.4	701 .612	1.1873	1.3232	499.4	495 .740
660	5.2904-3	-2451.5	7.2364	28.651	312	1.0424	-1.0024	1.4191	1.2817	495.5	731 .605	1.1911	1.3221	503.2	503 .738
670	5.2079-3	-2437.2	7.2580	28.632	315	1.0475	-1.0027	1.4499	1.2772	498.5	762 .600	1.1950	1.3210	507.0	511 .737
680	5.1275-3	-2422.5	7.2797	28.611	319	1.0531	-1.0031	1.4832	1.2726	501.5	795 .595	1.1989	1.3199	510.7	519 .736
690	5.0491-3	-2407.5	7.3017	28.587	322	1.0591	-1.0034	1.5189	1.2680	504.4	829 .590	1.2028	1.3189	514.5	528 .734
700	4.9725-3	-2392.1	7.3238	28.562	325	1.0656	-1.0038	1.5572	1.2634	507.4	864 .587	1.2067	1.3179	518.2	536 .732
710	4.8976-3	-2376.3	7.3462	28.534	329	1.0726	-1.0042	1.5981	1.2587	510.3	900 .584	1.2106	1.3170	522.0	545 .731
720	4.8245-3	-2360.1	7.3688	28.503	332	1.0800	-1.0047	1.6416	1.2540	513.2	937 .582	1.2145	1.3161	525.7	553 .729
730	4.7529-3	-2343.5	7.3918	28.471	335	1.0878	-1.0052	1.6875	1.2494	516.1	974 .581	1.2184	1.3153	529.5	562 .727
740	4.6828-3	-2326.4	7.4150	28.435	339	1.0961	-1.0057	1.7358	1.2449	519.0	1012 .581	1.2223	1.3145	533.3	571 .725
750	4.6141-3	-2308.8	7.4387	28.397	342	1.1047	-1.0062	1.7859	1.2405	521.9	1050 .582	1.2261	1.3137	537.1	580 .723
760	4.5469-3	-2290.7	7.4627	28.356	345	1.1136	-1.0067	1.8375	1.2363	524.9	1088 .583	1.2300	1.3130	540.9	589 .721
770	4.4809-3	-2272.0	7.4870	28.312	348	1.1225	-1.0073	1.8899	1.2323	527.9	1124 .586	1.2338	1.3124	544.8	598 .720
780	4.4162-3	-2252.9	7.5118	28.266	352	1.1315	-1.0078	1.9421	1.2286	530.9	1159 .589	1.2376	1.3118	548.6	607 .718
790	4.3528-3	-2233.2	7.5368	28.217	355	1.1402	-1.0084	1.9930	1.2252	534.1	1191 .594	1.2413	1.3113	552.5	616 .716
800	4.2906-3	-2213.0	7.5622	28.166	358	1.1484	-1.0089	2.0412	1.2223	537.3	1219 .599	1.2450	1.3108	556.4	625 .714
810	4.2296-3	-2192.4	7.5878	28.112	361	1.1557	-1.0094	2.0848	1.2197	540.6	1243 .606	1.2487	1.3104	560.3	633 .712
820	4.1699-3	-2171.3	7.6136	28.058	364	1.1619	-1.0098	2.1219	1.2177	544.0	1260 .613	1.2522	1.3100	564.2	642 .710
830	4.1114-3	-2150.0	7.6395	28.002	367	1.1663	-1.0101	2.1503	1.2162	547.5	1271 .621	1.2557	1.3097	568.1	651 .708
840	4.0543-3	-2128.4	7.6654	27.946	370	1.1687	-1.0102	2.1675	1.2154	551.1	1273 .630	1.2592	1.3094	572.0	660 .706
850	3.9986-3	-2106.7	7.6911	27.890	373	1.1685	-1.0103	2.1713	1.2154	554.9	1266 .640	1.2625	1.3091	576.0	669 .705
860	3.9444-3	-2085.0	7.7164	27.835	376	1.1654	-1.0101	2.1599	1.2161	558.9	1249 .650	1.2658	1.3089	579.8	677 .703
870	3.8918-3	-2063.5	7.7413	27.783	379	1.1591	-1.0098	2.1321	1.2177	563.1	1223 .661	1.2690	1.3086	583.7	685 .702
880	3.8407-3	-2042.4	7.7654	27.734	382	1.1496	-1.0093	2.0879	1.2202	567.4	1189 .671	1.2720	1.3083	587.5	694 .700
890	3.7914-3	-2021.8	7.7887	27.689	385	1.1372	-1.0086	2.0290	1.2237	571.9	1148 .680	1.2750	1.3081	591.2	702 .699
900	3.7439-3	-2001.9	7.8110	27.649	388	1.1224	-1.0077	1.9585	1.2281	576.5	1104 .688	1.2779	1.3077	594.9	709 .699
910	3.6980-3	-1982.7	7.8322	27.614	391	1.1062	-1.0067	1.8811	1.2333	581.3	1058 .694	1.2807	1.3074	598.5	717 .698
920	3.6539-3	-1964.2	7.8523	27.584	394	1.0896	-1.0057	1.8021	1.2390	586.1	1015 .699	1.2834	1.3069	602.0	724 .697
930	3.6115-3	-1946.6	7.8714	27.560	396	1.0737	-1.0047	1.7264	1.2449	591.0	977 .701	1.2861	1.3065	605.4	731 .697
940	3.5705-3	-1929.7	7.8895	27.540	399	1.0593	-1.0038	1.6580	1.2507	595.8	944 .702	1.2886	1.3060	608.8	738 .697
950	3.5309-3	-1913.4	7.9067	27.525	402	1.0467	-1.0031	1.5991	1.2561	600.4	917 .701	1.2911	1.3054	612.0	745 .697
960	3.4926-3	-1897.7	7.9232	27.513	405	1.0363	-1.0024	1.5505	1.2609	604.8	897 .700	1.2936	1.3048	615.3	752 .697
970	3.4555-3	-1882.4	7.9390	27.504	408	1.0279	-1.0019	1.5115	1.2649	609.0	883 .699	1.2960	1.3042	618.4	758 .697
980	3.4194-3	-1867.4	7.9544	27.497	411	1.0213	-1.0014	1.4812	1.2682	613.0	873 .697	1.2984	1.3036	621.5	765 .698
990	3.3842-3	-1852.7	7.9693	27.492	414	1.0161	-1.0011	1.4580	1.2708	616.8	866 .696	1.3007	1.3030	624.6	771 .698

TABLE 16.4D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3499-3	-1838.2	7.9839	27.488	417	1.0122	-1.0008	1.4406	1.2727	620.5	863	.696	1.3030	1.3023	627.6	777	.698
1050	3.1893-3	-1767.4	8.0530	27.479	431	1.0032	-1.0002	1.4018	1.2771	637.0	870	.694	1.3139	1.2992	642.5	808	.700
1100	3.0441-3	-1697.6	8.1180	27.477	444	1.0010	-1.0001	1.3945	1.2777	652.1	892	.695	1.3244	1.2961	656.8	839	.701
1150	2.9117-3	-1627.8	8.1799	27.476	458	1.0004	-1.0000	1.3948	1.2773	666.7	918	.696	1.3345	1.2932	670.9	870	.703
1200	2.7903-3	-1558.1	8.2393	27.476	471	1.0002	-1.0000	1.3972	1.2766	680.9	944	.697	1.3443	1.2905	684.6	900	.704
1250	2.6787-3	-1488.1	8.2964	27.476	485	1.0001	-1.0000	1.4004	1.2757	694.7	971	.699	1.3536	1.2879	698.0	930	.705
1300	2.5757-3	-1418.0	8.3514	27.475	498	1.0001	-1.0000	1.4042	1.2747	708.2	998	.700	1.3625	1.2855	711.1	960	.706
1350	2.4803-3	-1347.7	8.4045	27.475	511	1.0000	-1.0000	1.4082	1.2737	721.4	1026	.701	1.3711	1.2832	724.0	990	.707
1400	2.3917-3	-1277.2	8.4558	27.475	523	1.0000	-1.0000	1.4124	1.2727	734.3	1053	.702	1.3793	1.2810	736.7	1020	.707
1450	2.3092-3	-1206.5	8.5054	27.475	536	1.0000	-1.0000	1.4168	1.2716	747.0	1080	.703	1.3872	1.2790	749.1	1050	.708
1500	2.2322-3	-1135.5	8.5535	27.475	548	1.0000	-1.0000	1.4213	1.2705	759.4	1108	.703	1.3947	1.2771	761.4	1080	.708
1550	2.1602-3	-1064.3	8.6002	27.475	561	1.0000	-1.0000	1.4259	1.2694	771.6	1136	.704	1.4018	1.2753	773.4	1109	.708
1600	2.0927-3	-992.9	8.6456	27.475	573	1.0000	-1.0000	1.4304	1.2683	783.7	1164	.704	1.4086	1.2736	785.3	1139	.709
1650	2.0293-3	-921.3	8.6897	27.475	585	1.0001	-1.0000	1.4351	1.2673	795.5	1192	.704	1.4151	1.2720	797.0	1168	.709
1700	1.9696-3	-849.4	8.7326	27.475	597	1.0001	-1.0000	1.4397	1.2662	807.1	1221	.704	1.4213	1.2705	808.5	1197	.709
1750	1.9133-3	-777.3	8.7744	27.475	609	1.0001	-1.0000	1.4444	1.2651	818.5	1250	.703	1.4272	1.2691	819.8	1227	.708
1800	1.8602-3	-705.0	8.8151	27.475	621	1.0002	-1.0000	1.4493	1.2640	829.8	1280	.703	1.4328	1.2678	831.0	1256	.708
1850	1.8099-3	-632.4	8.8549	27.475	632	1.0003	-1.0000	1.4544	1.2629	840.9	1311	.702	1.4381	1.2665	842.0	1284	.708
1900	1.7622-3	-559.5	8.8938	27.474	644	1.0005	-1.0000	1.4598	1.2618	851.8	1342	.700	1.4432	1.2653	853.0	1313	.708
1950	1.7170-3	-486.4	8.9318	27.474	655	1.0007	-1.0000	1.4657	1.2606	862.5	1375	.698	1.4480	1.2642	863.7	1342	.707
2000	1.6740-3	-412.9	8.9689	27.473	667	1.0010	-1.0000	1.4724	1.2593	873.1	1411	.696	1.4526	1.2632	874.4	1370	.707
2050	1.6332-3	-339.1	9.0054	27.473	678	1.0015	-1.0000	1.4801	1.2579	883.4	1448	.693	1.4569	1.2622	884.9	1398	.706
2100	1.5942-3	-264.9	9.0412	27.471	689	1.0021	-1.0001	1.4893	1.2563	893.6	1489	.689	1.4610	1.2613	895.3	1426	.706
2150	1.5570-3	-190.2	9.0763	27.470	700	1.0030	-1.0001	1.5005	1.2544	903.5	1534	.685	1.4649	1.2604	905.7	1454	.705
2200	1.5215-3	-114.8	9.1110	27.467	711	1.0042	-1.0001	1.5143	1.2523	913.2	1584	.680	1.4686	1.2596	915.9	1482	.704
2250	1.4876-3	-38.7	9.1452	27.464	722	1.0059	-1.0002	1.5317	1.2497	922.6	1641	.674	1.4722	1.2589	926.0	1510	.704
2300	1.4550-3	38.4	9.1791	27.460	733	1.0081	-1.0003	1.5537	1.2465	931.7	1707	.667	1.4755	1.2582	936.1	1538	.703
2350	1.4237-3	116.8	9.2128	27.455	743	1.0111	-1.0004	1.5818	1.2428	940.5	1784	.659	1.4787	1.2576	946.0	1566	.702
2400	1.3937-3	196.8	9.2465	27.447	754	1.0152	-1.0005	1.6177	1.2383	948.8	1874	.651	1.4817	1.2570	956.0	1594	.701
2450	1.3648-3	278.7	9.2803	27.437	764	1.0205	-1.0008	1.6635	1.2330	956.8	1982	.642	1.4846	1.2565	965.8	1621	.700
2500	1.3368-3	363.3	9.3144	27.424	775	1.0276	-1.0010	1.7216	1.2269	964.3	2111	.632	1.4873	1.2561	975.7	1649	.699
2550	1.3098-3	451.1	9.3492	27.406	785	1.0367	-1.0014	1.7944	1.2200	971.5	2266	.622	1.4898	1.2557	985.6	1678	.697
2600	1.2835-3	543.0	9.3849	27.384	795	1.0483	-1.0019	1.8843	1.2124	978.3	2452	.611	1.4922	1.2554	995.5	1706	.696
2650	1.2580-3	639.9	9.4218	27.355	806	1.0627	-1.0025	1.9928	1.2045	985.0	2673	.600	1.4945	1.2553	1005.5	1734	.694
2700	1.2331-3	742.6	9.4602	27.319	815	1.0802	-1.0032	2.1203	1.1966	991.6	2935	.589	1.4966	1.2553	1015.6	1763	.692
2750	1.2086-3	852.2	9.5004	27.274	825	1.1007	-1.0041	2.2653	1.1889	998.4	3238	.577	1.4986	1.2554	1025.9	1791	.690
2800	1.1847-3	969.4	9.5427	27.219	835	1.1240	-1.0052	2.4250	1.1819	1005.4	3585	.565	1.5004	1.2556	1036.3	1820	.688
2850	1.1611-3	1094.9	9.5871	27.153	844	1.1495	-1.0064	2.5952	1.1758	1013.0	3973	.552	1.5021	1.2561	1047.0	1849	.686
2900	1.1378-3	1229.0	9.6337	27.076	854	1.1768	-1.0078	2.7711	1.1706	1021.0	4401	.538	1.5037	1.2566	1057.9	1878	.684
2950	1.1149-3	1372.0	9.6826	26.988	863	1.2053	-1.0092	2.9489	1.1663	1029.5	4866	.523	1.5051	1.2574	1069.0	1908	.681
3000	1.0923-3	1523.9	9.7337	26.888	872	1.2345	-1.0108	3.1252	1.1628	1038.6	5364	.508	1.5065	1.2583	1080.4	1938	.678

TABLE 16.5D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
200	8.7729-2	-2979.9	5.4319	28.795	114	1.0000	-1.0000	1.0483	1.3801	282.3	154	.779	1.0483	1.3802	282.3	154	.779
210	8.3551-2	-2969.4	5.4831	28.795	120	1.0000	-1.0000	1.0502	1.3792	289.2	162	.774	1.0501	1.3792	289.2	162	.774
220	7.9753-2	-2958.9	5.5320	28.795	125	1.0000	-1.0000	1.0521	1.3782	295.9	171	.771	1.0521	1.3783	295.9	171	.771
230	7.6286-2	-2948.3	5.5788	28.795	130	1.0000	-1.0000	1.0541	1.3772	302.4	179	.767	1.0541	1.3773	302.4	179	.767
240	7.3108-2	-2937.8	5.6237	28.795	136	1.0000	-1.0000	1.0563	1.3762	308.8	187	.765	1.0562	1.3762	308.8	187	.765
250	7.0183-2	-2927.2	5.6669	28.795	141	1.0000	-1.0000	1.0585	1.3751	315.1	196	.762	1.0584	1.3751	315.1	196	.762
260	6.7484-2	-2916.6	5.7085	28.795	146	1.0000	-1.0000	1.0607	1.3740	321.2	204	.760	1.0607	1.3740	321.2	204	.760
270	6.4985-2	-2906.0	5.7485	28.795	151	1.0000	-1.0000	1.0631	1.3729	327.2	212	.759	1.0630	1.3729	327.2	212	.759
280	6.2664-2	-2895.4	5.7872	28.795	156	1.0000	-1.0000	1.0655	1.3717	333.0	220	.757	1.0654	1.3718	333.0	220	.757
290	6.0503-2	-2884.7	5.8247	28.795	161	1.0000	-1.0000	1.0680	1.3705	338.8	227	.757	1.0679	1.3706	338.8	227	.757
298	5.8849-2	-2876.0	5.8543	28.795	165	1.0000	-1.0000	1.0701	1.3695	343.4	234	.756	1.0700	1.3696	343.4	234	.756
300	5.8486-2	-2874.0	5.8609	28.795	166	1.0000	-1.0000	1.0705	1.3693	344.4	235	.756	1.0704	1.3694	344.4	235	.756
310	5.6600-2	-2863.3	5.8961	28.795	171	1.0000	-1.0000	1.0732	1.3681	349.9	242	.756	1.0730	1.3682	349.9	242	.756
320	5.4831-2	-2852.5	5.9302	28.795	176	1.0000	-1.0000	1.0759	1.3668	355.4	250	.756	1.0757	1.3669	355.4	250	.756
330	5.3169-2	-2841.8	5.9633	28.795	180	1.0000	-1.0000	1.0787	1.3655	360.7	257	.756	1.0784	1.3656	360.7	257	.756
340	5.1606-2	-2831.0	5.9956	28.795	185	1.0000	-1.0000	1.0815	1.3642	366.0	264	.756	1.0812	1.3644	366.0	264	.757
350	5.0131-2	-2820.1	6.0270	28.795	189	1.0000	-1.0000	1.0844	1.3629	371.1	272	.756	1.0841	1.3631	371.1	271	.757
360	4.8739-2	-2809.3	6.0576	28.795	194	1.0000	-1.0000	1.0874	1.3615	376.2	279	.756	1.0869	1.3617	376.2	279	.756
370	4.7421-2	-2798.4	6.0874	28.795	199	1.0000	-1.0000	1.0905	1.3602	381.2	287	.755	1.0899	1.3604	381.2	286	.756
380	4.6173-2	-2787.5	6.1165	28.795	203	1.0001	-1.0000	1.0937	1.3588	386.1	294	.754	1.0929	1.3591	386.2	294	.755
390	4.4989-2	-2776.5	6.1450	28.795	207	1.0001	-1.0000	1.0970	1.3573	391.0	302	.753	1.0959	1.3577	391.0	301	.754
400	4.3864-2	-2765.5	6.1728	28.795	212	1.0001	-1.0000	1.1003	1.3559	395.7	310	.752	1.0990	1.3564	395.8	309	.754
410	4.2794-2	-2754.5	6.2000	28.795	216	1.0002	-1.0000	1.1038	1.3544	400.4	318	.751	1.1021	1.3550	400.5	316	.753
420	4.1775-2	-2743.4	6.2266	28.795	220	1.0002	-1.0000	1.1074	1.3529	405.1	325	.750	1.1053	1.3536	405.2	323	.753
430	4.0804-2	-2732.4	6.2527	28.795	224	1.0003	-1.0000	1.1112	1.3513	409.6	333	.749	1.1085	1.3523	409.8	330	.753
440	3.9876-2	-2721.2	6.2783	28.794	229	1.0004	-1.0000	1.1151	1.3498	414.1	341	.748	1.1117	1.3509	414.3	338	.753
450	3.8989-2	-2710.1	6.3034	28.794	233	1.0005	-1.0000	1.1192	1.3482	418.5	349	.747	1.1150	1.3495	418.7	345	.753
460	3.8141-2	-2698.8	6.3281	28.794	237	1.0007	-1.0000	1.1235	1.3465	422.9	357	.745	1.1183	1.3481	423.2	352	.753
470	3.7329-2	-2687.6	6.3523	28.793	241	1.0009	-1.0000	1.1280	1.3448	427.2	365	.744	1.1216	1.3467	427.5	359	.753
480	3.6551-2	-2676.3	6.3761	28.793	245	1.0011	-1.0001	1.1327	1.3431	431.5	374	.742	1.1250	1.3453	431.8	366	.753
490	3.5804-2	-2664.9	6.3995	28.792	249	1.0014	-1.0001	1.1376	1.3413	435.7	382	.740	1.1284	1.3439	436.1	373	.752
500	3.5087-2	-2653.5	6.4225	28.791	253	1.0017	-1.0001	1.1428	1.3395	439.8	391	.738	1.1318	1.3425	440.3	380	.752
510	3.4397-2	-2642.1	6.4452	28.790	256	1.0020	-1.0001	1.1484	1.3376	443.9	401	.735	1.1353	1.3412	444.4	387	.752
520	3.3734-2	-2630.6	6.4676	28.789	260	1.0024	-1.0001	1.1543	1.3357	447.9	411	.732	1.1388	1.3398	448.6	394	.752
530	3.3096-2	-2619.0	6.4896	28.787	264	1.0029	-1.0002	1.1605	1.3337	451.8	421	.729	1.1423	1.3384	452.6	402	.751
540	3.2481-2	-2607.3	6.5114	28.785	268	1.0035	-1.0002	1.1671	1.3316	455.7	432	.725	1.1458	1.3370	456.7	409	.751
550	3.1889-2	-2595.6	6.5329	28.783	272	1.0041	-1.0002	1.1742	1.3295	459.6	443	.721	1.1494	1.3357	460.7	416	.751
560	3.1317-2	-2583.9	6.5541	28.781	276	1.0049	-1.0003	1.1818	1.3273	463.4	455	.716	1.1530	1.3343	464.6	424	.750
570	3.0764-2	-2572.0	6.5751	28.778	279	1.0057	-1.0003	1.1899	1.3250	467.1	467	.712	1.1565	1.3330	468.5	431	.750
580	3.0231-2	-2560.1	6.5958	28.775	283	1.0067	-1.0004	1.1985	1.3227	470.8	480	.707	1.1602	1.3317	472.4	438	.749
590	2.9715-2	-2548.0	6.6164	28.772	287	1.0078	-1.0004	1.2078	1.3202	474.4	493	.702	1.1638	1.3303	476.3	446	.748

TABLE 16.5D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	2.9215-2	-2535.9	6.6368	28.768	290	1.0090	-1.0005	1.2178	1.3177	478.0	508	.696	1.1674	1.3290	480.1	453	.748
610	2.8732-2	-2523.7	6.6570	28.763	294	1.0103	-1.0006	1.2286	1.3151	481.5	523	.691	1.1711	1.3277	483.9	461	.747
620	2.8263-2	-2511.3	6.6771	28.758	298	1.0118	-1.0007	1.2401	1.3124	485.0	539	.685	1.1748	1.3264	487.6	468	.746
630	2.7809-2	-2498.9	6.6970	28.752	301	1.0135	-1.0008	1.2526	1.3096	488.4	555	.679	1.1784	1.3252	491.3	476	.746
640	2.7368-2	-2486.3	6.7168	28.746	305	1.0154	-1.0009	1.2660	1.3067	491.8	573	.673	1.1821	1.3239	495.1	484	.745
650	2.6940-2	-2473.5	6.7366	28.738	308	1.0175	-1.0010	1.2804	1.3036	495.1	592	.667	1.1858	1.3227	498.7	491	.744
660	2.6525-2	-2460.7	6.7562	28.730	312	1.0198	-1.0011	1.2960	1.3005	498.4	611	.661	1.1896	1.3215	502.4	499	.743
670	2.6121-2	-2447.6	6.7759	28.721	315	1.0223	-1.0013	1.3127	1.2973	501.6	631	.655	1.1933	1.3203	506.0	507	.742
680	2.5727-2	-2434.4	6.7954	28.711	319	1.0251	-1.0015	1.3308	1.2940	504.8	653	.650	1.1970	1.3191	509.7	515	.741
690	2.5345-2	-2421.0	6.8150	28.700	322	1.0281	-1.0017	1.3503	1.2905	507.9	675	.644	1.2007	1.3180	513.3	522	.740
700	2.4972-2	-2407.4	6.8346	28.688	325	1.0315	-1.0019	1.3713	1.2870	511.0	699	.639	1.2044	1.3169	516.9	530	.739
710	2.4609-2	-2393.6	6.8542	28.674	329	1.0351	-1.0021	1.3938	1.2834	514.0	723	.634	1.2082	1.3158	520.5	538	.738
720	2.4254-2	-2379.5	6.8739	28.659	332	1.0390	-1.0023	1.4180	1.2797	517.0	749	.629	1.2119	1.3147	524.0	546	.737
730	2.3908-2	-2365.2	6.8936	28.643	336	1.0433	-1.0026	1.4439	1.2759	520.0	776	.625	1.2156	1.3137	527.6	554	.736
740	2.3571-2	-2350.6	6.9134	28.625	339	1.0480	-1.0029	1.4717	1.2721	522.9	803	.621	1.2193	1.3127	531.2	562	.735
750	2.3241-2	-2335.8	6.9334	28.606	342	1.0530	-1.0032	1.5013	1.2682	525.8	832	.617	1.2230	1.3117	534.7	571	.733
760	2.2918-2	-2320.6	6.9535	28.585	345	1.0583	-1.0035	1.5328	1.2643	528.7	862	.614	1.2267	1.3108	538.3	579	.732
770	2.2602-2	-2305.1	6.9737	28.562	349	1.0641	-1.0039	1.5661	1.2604	531.5	893	.612	1.2303	1.3099	541.9	587	.731
780	2.2293-2	-2289.3	6.9941	28.537	352	1.0702	-1.0042	1.6013	1.2565	534.4	924	.610	1.2340	1.3091	545.4	595	.730
790	2.1990-2	-2273.1	7.0148	28.511	355	1.0766	-1.0047	1.6382	1.2526	537.2	957	.608	1.2376	1.3083	549.0	603	.728
800	2.1694-2	-2256.5	7.0356	28.482	358	1.0834	-1.0051	1.6768	1.2489	540.0	989	.607	1.2412	1.3075	552.6	612	.727
810	2.1403-2	-2239.5	7.0567	28.451	361	1.0905	-1.0055	1.7167	1.2452	542.9	1023	.607	1.2448	1.3068	556.2	620	.726
820	2.1117-2	-2222.2	7.0780	28.418	365	1.0978	-1.0060	1.7578	1.2416	545.8	1056	.607	1.2483	1.3061	559.8	628	.724
830	2.0837-2	-2204.4	7.0996	28.383	368	1.1053	-1.0065	1.7997	1.2382	548.7	1089	.608	1.2518	1.3055	563.4	637	.723
840	2.0562-2	-2186.2	7.1214	28.346	371	1.1130	-1.0070	1.8418	1.2350	551.6	1121	.609	1.2553	1.3049	567.0	645	.721
850	2.0292-2	-2167.5	7.1434	28.307	374	1.1206	-1.0075	1.8837	1.2321	554.6	1153	.611	1.2587	1.3044	570.7	653	.720
860	2.0027-2	-2148.5	7.1657	28.266	377	1.1281	-1.0079	1.9246	1.2293	557.7	1182	.613	1.2621	1.3039	574.3	662	.719
870	1.9767-2	-2129.0	7.1882	28.223	380	1.1353	-1.0084	1.9638	1.2269	560.8	1210	.616	1.2654	1.3035	578.0	670	.717
880	1.9511-2	-2109.2	7.2108	28.178	383	1.1421	-1.0089	2.0003	1.2248	563.9	1235	.620	1.2686	1.3031	581.7	678	.716
890	1.9260-2	-2089.1	7.2336	28.132	386	1.1482	-1.0093	2.0330	1.2230	567.2	1256	.624	1.2718	1.3027	585.4	687	.714
900	1.9014-2	-2068.6	7.2565	28.085	389	1.1534	-1.0097	2.0609	1.2216	570.5	1273	.629	1.2750	1.3024	589.1	695	.713
910	1.8773-2	-2047.9	7.2794	28.036	392	1.1574	-1.0100	2.0829	1.2206	573.9	1285	.635	1.2781	1.3021	592.8	703	.712
920	1.8537-2	-2026.9	7.3023	27.988	394	1.1601	-1.0102	2.0976	1.2201	577.5	1291	.641	1.2811	1.3019	596.5	711	.710
930	1.8306-2	-2005.9	7.3250	27.939	397	1.1611	-1.0103	2.1040	1.2200	581.1	1291	.647	1.2840	1.3017	600.2	719	.709
940	1.8080-2	-1984.9	7.3475	27.891	400	1.1602	-1.0104	2.1011	1.2204	584.8	1284	.655	1.2869	1.3015	603.9	727	.708
950	1.7860-2	-1963.9	7.3696	27.844	403	1.1573	-1.0102	2.0882	1.2214	588.6	1271	.662	1.2897	1.3013	607.6	735	.707
960	1.7645-2	-1943.2	7.3914	27.799	406	1.1522	-1.0100	2.0650	1.2230	592.6	1252	.669	1.2924	1.3011	611.2	743	.706
970	1.7436-2	-1922.7	7.4126	27.756	409	1.1450	-1.0096	2.0316	1.2251	596.6	1227	.677	1.2950	1.3009	614.8	751	.705
980	1.7233-2	-1902.6	7.4333	27.716	411	1.1357	-1.0090	1.9890	1.2278	600.8	1197	.684	1.2976	1.3007	618.4	758	.704
990	1.7037-2	-1882.9	7.4532	27.680	414	1.1248	-1.0084	1.9387	1.2310	605.0	1164	.690	1.3001	1.3005	621.9	766	.703

TABLE 16.5D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	1.6846-2	-1863.8	7.4724	27.647	417	1.1126	-1.0076	1.8827	1.2348	609.4	1129	.695	1.3025	1.3002	625.3	773	.703
1050	1.5981-2	-1776.9	7.5573	27.538	431	1.0515	-1.0036	1.6079	1.2562	631.1	983	.704	1.3138	1.2984	641.6	807	.701
1100	1.5231-2	-1700.7	7.6282	27.496	444	1.0177	-1.0013	1.4630	1.2703	650.0	929	.700	1.3244	1.2959	656.5	839	.702
1150	1.4562-2	-1628.9	7.6920	27.483	458	1.0059	-1.0005	1.4161	1.2750	666.0	929	.698	1.3345	1.2931	670.7	869	.703
1200	1.3953-2	-1558.5	7.7520	27.479	471	1.0022	-1.0002	1.4043	1.2758	680.6	948	.698	1.3443	1.2905	684.5	900	.704
1250	1.3394-2	-1488.3	7.8092	27.477	485	1.0009	-1.0001	1.4031	1.2754	694.6	973	.699	1.3536	1.2879	698.0	930	.705
1300	1.2879-2	-1418.1	7.8643	27.477	498	1.0005	-1.0001	1.4054	1.2747	708.1	999	.700	1.3626	1.2855	711.1	960	.706
1350	1.2402-2	-1347.8	7.9174	27.476	511	1.0003	-1.0000	1.4088	1.2737	721.3	1026	.701	1.3711	1.2832	724.0	990	.707
1400	1.1959-2	-1277.2	7.9687	27.476	523	1.0002	-1.0000	1.4128	1.2727	734.3	1053	.702	1.3793	1.2810	736.7	1020	.707
1450	1.1546-2	-1206.5	8.0184	27.476	536	1.0001	-1.0000	1.4170	1.2716	747.0	1080	.703	1.3872	1.2790	749.1	1050	.708
1500	1.1161-2	-1135.5	8.0665	27.476	548	1.0001	-1.0000	1.4214	1.2705	759.4	1108	.703	1.3947	1.2771	761.4	1080	.708
1550	1.0801-2	-1064.4	8.1132	27.476	561	1.0001	-1.0000	1.4259	1.2694	771.6	1136	.704	1.4018	1.2753	773.4	1109	.709
1600	1.0464-2	-992.9	8.1585	27.476	573	1.0001	-1.0000	1.4303	1.2684	783.7	1164	.704	1.4086	1.2736	785.3	1139	.709
1650	1.0147-2	-921.3	8.2026	27.475	585	1.0001	-1.0000	1.4348	1.2673	795.5	1192	.704	1.4151	1.2720	796.9	1168	.709
1700	9.8481-3	-849.5	8.2455	27.475	597	1.0001	-1.0000	1.4393	1.2663	807.1	1220	.704	1.4213	1.2705	808.5	1197	.709
1750	9.5667-3	-777.4	8.2873	27.475	609	1.0001	-1.0000	1.4437	1.2652	818.6	1248	.704	1.4272	1.2691	819.8	1227	.708
1800	9.3009-3	-705.1	8.3280	27.475	621	1.0001	-1.0000	1.4482	1.2642	829.8	1277	.704	1.4328	1.2678	831.0	1256	.708
1850	9.0495-3	-632.6	8.3678	27.475	632	1.0002	-1.0000	1.4527	1.2632	841.0	1306	.703	1.4381	1.2665	842.0	1284	.708
1900	8.8113-3	-559.8	8.4066	27.475	644	1.0002	-1.0000	1.4572	1.2622	851.9	1335	.703	1.4432	1.2653	852.9	1313	.708
1950	8.5853-3	-486.8	8.4445	27.475	655	1.0003	-1.0000	1.4620	1.2612	862.7	1365	.702	1.4480	1.2642	863.7	1342	.707
2000	8.3706-3	-413.6	8.4815	27.475	667	1.0005	-1.0000	1.4669	1.2602	873.3	1396	.700	1.4526	1.2632	874.4	1370	.707
2050	8.1663-3	-340.1	8.5178	27.474	678	1.0007	-1.0000	1.4723	1.2591	883.8	1428	.699	1.4569	1.2622	884.9	1398	.706
2100	7.9717-3	-266.4	8.5534	27.474	689	1.0010	-1.0000	1.4782	1.2580	894.1	1461	.697	1.4610	1.2613	895.3	1426	.706
2150	7.7861-3	-192.3	8.5882	27.473	700	1.0013	-1.0000	1.4849	1.2568	904.3	1496	.695	1.4649	1.2604	905.6	1454	.705
2200	7.6089-3	-117.9	8.6225	27.472	711	1.0019	-1.0001	1.4926	1.2554	914.3	1533	.692	1.4686	1.2596	915.8	1482	.705
2250	7.4394-3	-43.0	8.6561	27.471	722	1.0026	-1.0001	1.5017	1.2539	924.1	1573	.689	1.4722	1.2588	925.9	1510	.704
2300	7.2772-3	32.3	8.6892	27.469	733	1.0035	-1.0001	1.5125	1.2522	933.7	1617	.685	1.4755	1.2581	935.9	1537	.703
2350	7.1218-3	108.3	8.7219	27.466	743	1.0047	-1.0002	1.5258	1.2502	943.1	1665	.681	1.4787	1.2574	945.8	1565	.702
2400	6.9726-3	184.9	8.7542	27.463	754	1.0064	-1.0002	1.5419	1.2478	952.2	1719	.676	1.4817	1.2568	955.6	1593	.702
2450	6.8293-3	262.5	8.7862	27.459	765	1.0085	-1.0003	1.5618	1.2451	961.1	1779	.671	1.4846	1.2562	965.4	1620	.701
2500	6.6913-3	341.2	8.8180	27.454	775	1.0113	-1.0004	1.5864	1.2419	969.7	1848	.665	1.4873	1.2557	975.1	1648	.700
2550	6.5585-3	421.3	8.8497	27.446	785	1.0148	-1.0006	1.6167	1.2382	978.0	1928	.659	1.4899	1.2552	984.7	1676	.698
2600	6.4302-3	503.0	8.8814	27.437	796	1.0194	-1.0007	1.6540	1.2340	986.0	2019	.652	1.4924	1.2548	994.3	1703	.697
2650	6.3062-3	586.8	8.9133	27.426	806	1.0251	-1.0010	1.6995	1.2292	993.7	2125	.645	1.4947	1.2544	1003.9	1731	.696
2700	6.1861-3	673.1	8.9456	27.411	816	1.0323	-1.0013	1.7545	1.2239	1001.2	2248	.637	1.4969	1.2541	1013.5	1759	.695
2750	6.0696-3	762.4	8.9784	27.393	826	1.0411	-1.0016	1.8201	1.2182	1008.4	2391	.629	1.4990	1.2539	1023.0	1786	.693
2800	5.9563-3	855.3	9.0118	27.370	836	1.0517	-1.0021	1.8971	1.2121	1015.4	2555	.621	1.5010	1.2537	1032.7	1814	.692
2850	5.8458-3	952.3	9.0462	27.342	846	1.0643	-1.0027	1.9856	1.2060	1022.3	2744	.612	1.5029	1.2537	1042.3	1841	.691
2900	5.7378-3	1054.0	9.0816	27.308	856	1.0789	-1.0034	2.0850	1.1999	1029.3	2958	.603	1.5046	1.2537	1052.1	1868	.689
2950	5.6322-3	1161.0	9.1181	27.268	865	1.0953	-1.0041	2.1939	1.1942	1036.4	3199	.593	1.5063	1.2538	1062.0	1896	.687
3000	5.5287-3	1273.6	9.1560	27.220	875	1.1134	-1.0050	2.3102	1.1889	1043.8	3465	.583	1.5078	1.2540	1072.0	1923	.686

TABLE 16.1E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1.01325 KPA (0.01 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.102-5	-3286.5	6.6811	27.475	1.065	1.029	1.842-5	30.238	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	1.906-5	-3262.1	6.7971	27.475	1.541	1.048	1.673-5	30.208	140	1.0000	-1.000	0.984	1.388	290	188	.731	0.984	1.388	188	.731
240	1.705-5	-3204.0	7.0477	27.476	5.557	1.067	1.519-5	29.912	147	1.0000	-1.000	1.000	1.385	304	200	.736	1.000	1.385	200	.736
260	1.350-5	-2929.3	8.1390	27.515	1.082	1.070	1.323-5	28.236	143	1.0000	-1.000	1.080	1.375	324	199	.774	1.080	1.375	199	.774
280	1.253-5	-2907.6	8.2194	27.541	1.090	1.075	1.229-5	28.248	153	1.0000	-1.000	1.083	1.373	336	215	.770	1.083	1.373	215	.770
298	1.177-5	-2887.7	8.2882	27.572	1.099	1.079	1.155-5	28.262	162	1.0001	-1.000	1.087	1.371	347	230	.766	1.086	1.372	229	.768
300	1.170-5	-2885.7	8.2950	27.576	1.100	1.079	1.148-5	28.264	163	1.0001	-1.000	1.087	1.371	348	231	.766	1.086	1.371	230	.768
320	1.097-5	-2863.6	8.3663	27.618	1.111	1.084	1.077-5	28.283	172	1.0004	-1.000	1.093	1.368	359	248	.761	1.090	1.369	245	.767
340	1.032-5	-2841.2	8.4341	27.668	1.125	1.089	1.015-5	28.305	182	1.0010	-1.000	1.103	1.364	369	267	.752	1.094	1.367	259	.767
360	9.746-6	-2818.5	8.4989	27.723	1.143	1.094	9.590-6	28.328	191	1.0023	-1.000	1.117	1.358	379	290	.736	1.098	1.365	274	.766
380	9.231-6	-2795.4	8.5614	27.781	1.171	1.100	9.092-6	28.351	200	1.0049	-1.000	1.141	1.350	388	323	.709	1.102	1.362	290	.763
400	8.766-6	-2771.6	8.6224	27.840	1.211	1.106	8.644-6	28.371	210	1.0093	-1.000	1.177	1.339	396	367	.672	1.107	1.360	306	.759
420	8.344-6	-2746.9	8.6828	27.897	1.270	1.112	8.236-6	28.386	218	1.0166	-1.001	1.232	1.325	404	427	.630	1.113	1.357	321	.757
440	7.956-6	-2720.7	8.7437	27.946	1.353	1.118	7.863-6	28.390	227	1.0276	-1.001	1.310	1.307	410	507	.587	1.119	1.355	337	.753
460	7.597-6	-2692.6	8.8062	27.984	1.463	1.126	7.519-6	28.380	235	1.0433	-1.002	1.414	1.288	417	605	.550	1.126	1.352	354	.749
480	7.264-6	-2662.0	8.8713	28.007	1.602	1.133	7.198-6	28.351	244	1.0637	-1.003	1.544	1.269	423	718	.524	1.133	1.349	371	.743
500	6.950-6	-2628.3	8.9399	28.009	1.766	1.142	6.897-6	28.299	252	1.0882	-1.004	1.694	1.252	429	834	.512	1.142	1.347	391	.736
520	6.655-6	-2591.2	9.0126	27.991	1.947	1.151	6.614-6	28.222	260	1.1149	-1.006	1.855	1.237	435	940	.514	1.151	1.344	412	.727
540	6.375-6	-2550.4	9.0896	27.952	2.134	1.161	6.346-6	28.120	268	1.1406	-1.007	2.010	1.226	442	1022	.527	1.161	1.342	434	.717
560	6.109-6	-2505.8	9.1706	27.898	2.322	1.172	6.093-6	27.998	276	1.1619	-1.008	2.145	1.218	450	1075	.551	1.171	1.340	458	.706
580	5.858-6	-2457.5	9.2554	27.834	2.512	1.182	5.854-6	27.861	284	1.1757	-1.009	2.249	1.211	458	1100	.580	1.182	1.338	483	.695
600	5.628-6	-2410.7	9.3348	27.707	2.184	1.192	5.628-6	27.707	291	1.1590	-1.008	2.184	1.214	468	1019	.624	1.192	1.336	506	.686
620	5.422-6	-2369.6	9.4022	27.585	1.902	1.201	5.422-6	27.585	298	1.1057	-1.006	1.902	1.232	480	850	.667	1.201	1.335	526	.681
640	5.240-6	-2334.7	9.4576	27.518	1.603	1.208	5.240-6	27.518	305	1.0504	-1.003	1.603	1.258	493	714	.685	1.208	1.333	543	.679
660	5.076-6	-2304.6	9.5040	27.490	1.437	1.215	5.076-6	27.490	312	1.0191	-1.001	1.437	1.278	505	654	.685	1.215	1.332	558	.679
680	4.925-6	-2276.5	9.5458	27.480	1.377	1.220	4.925-6	27.480	319	1.0066	-1.000	1.377	1.286	514	642	.683	1.220	1.330	572	.680
700	4.784-6	-2249.2	9.5855	27.477	1.362	1.226	4.784-6	27.477	325	1.0023	-1.000	1.362	1.287	522	649	.683	1.226	1.328	586	.681
720	4.651-6	-2222.0	9.6238	27.476	1.361	1.231	4.651-6	27.476	332	1.0008	-1.000	1.361	1.287	529	661	.683	1.231	1.326	599	.682
740	4.525-6	-2194.7	9.6611	27.476	1.364	1.237	4.525-6	27.476	338	1.0003	-1.000	1.364	1.285	537	675	.683	1.237	1.324	612	.683
760	4.406-6	-2167.4	9.6975	27.475	1.367	1.242	4.406-6	27.475	345	1.0001	-1.000	1.367	1.284	543	689	.683	1.242	1.322	626	.684
780	4.293-6	-2140.1	9.7331	27.475	1.371	1.248	4.293-6	27.475	351	1.0001	-1.000	1.371	1.283	550	703	.684	1.248	1.320	639	.686
800	4.185-6	-2112.6	9.7679	27.475	1.374	1.253	4.185-6	27.475	357	1.0000	-1.000	1.374	1.283	557	717	.684	1.253	1.318	652	.687

TABLE 16.2E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 10.1325 KPA (0.10 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.102-4	-3286.8	6.1251	27.475	1.033	1.029	1.843-4	30.240	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	1.911-4	-3265.6	6.2258	27.475	1.097	1.048	1.675-4	30.237	140	1.0000	-1.000	0.983	1.389	290	188	.731	0.983	1.389	188	.731
240	1.747-4	-3240.9	6.3332	27.475	1.494	1.067	1.534-4	30.207	150	1.0000	-1.000	0.987	1.387	303	204	.728	0.987	1.387	204	.728
260	1.586-4	-3194.2	6.5188	27.476	3.789	1.085	1.406-4	30.005	159	1.0000	-1.000	0.999	1.384	316	217	.730	0.999	1.384	217	.730
280	1.354-4	-3023.7	7.1459	27.496	12.131	1.184	1.264-4	29.048	160	1.0000	-1.000	1.045	1.377	332	222	.752	1.045	1.377	222	.752
298	1.177-4	-2887.7	7.6233	27.572	1.098	1.079	1.155-4	28.262	162	1.0000	-1.000	1.086	1.371	347	229	.768	1.086	1.372	229	.768
300	1.170-4	-2885.7	7.6301	27.576	1.099	1.079	1.148-4	28.264	163	1.0000	-1.000	1.087	1.371	348	230	.767	1.086	1.371	230	.768
320	1.097-4	-2863.6	7.7013	27.618	1.108	1.084	1.077-4	28.283	172	1.0001	-1.000	1.091	1.369	359	246	.765	1.090	1.369	245	.767
340	1.032-4	-2841.4	7.7688	27.668	1.118	1.089	1.015-4	28.306	182	1.0003	-1.000	1.096	1.366	369	262	.762	1.094	1.367	259	.767
360	9.747-5	-2818.9	7.8330	27.724	1.129	1.094	9.590-5	28.330	191	1.0007	-1.000	1.104	1.363	379	279	.756	1.098	1.365	274	.766
380	9.234-5	-2796.2	7.8943	27.784	1.142	1.100	9.094-5	28.356	200	1.0015	-1.000	1.114	1.358	389	300	.744	1.102	1.362	289	.763
400	8.771-5	-2773.2	7.9533	27.846	1.159	1.105	8.647-5	28.382	209	1.0030	-1.000	1.129	1.353	398	325	.728	1.107	1.360	305	.761
420	8.351-5	-2749.8	8.0104	27.908	1.182	1.111	8.242-5	28.406	218	1.0054	-1.000	1.151	1.346	407	356	.706	1.112	1.357	320	.759
440	7.969-5	-2725.9	8.0661	27.968	1.214	1.117	7.873-5	28.427	227	1.0092	-1.000	1.181	1.337	415	395	.678	1.118	1.354	335	.757
460	7.618-5	-2701.2	8.1209	28.024	1.256	1.124	7.535-5	28.443	235	1.0149	-1.001	1.222	1.326	422	444	.647	1.124	1.352	350	.755
480	7.295-5	-2675.5	8.1755	28.073	1.312	1.130	7.223-5	28.451	243	1.0229	-1.001	1.277	1.313	429	506	.614	1.130	1.349	365	.753
500	6.995-5	-2648.6	8.2305	28.113	1.384	1.137	6.934-5	28.448	251	1.0338	-1.002	1.347	1.299	436	581	.583	1.137	1.346	381	.750
520	6.715-5	-2620.1	8.2864	28.140	1.473	1.145	6.664-5	28.433	260	1.0478	-1.002	1.433	1.285	442	669	.556	1.144	1.343	398	.746
540	6.452-5	-2589.6	8.3439	28.153	1.579	1.153	6.410-5	28.403	267	1.0649	-1.003	1.536	1.270	448	764	.538	1.152	1.341	416	.741
560	6.204-5	-2556.8	8.4036	28.149	1.704	1.161	6.171-5	28.355	275	1.0850	-1.004	1.654	1.257	454	863	.528	1.161	1.338	435	.734
580	5.969-5	-2521.3	8.4658	28.129	1.845	1.170	5.944-5	28.289	283	1.1072	-1.006	1.785	1.244	461	959	.527	1.169	1.336	455	.727
600	5.746-5	-2482.8	8.5310	28.094	2.005	1.179	5.729-5	28.205	290	1.1306	-1.007	1.926	1.233	467	1047	.534	1.179	1.333	476	.719
620	5.533-5	-2441.0	8.5996	28.045	2.186	1.189	5.524-5	28.104	298	1.1539	-1.008	2.073	1.222	473	1124	.549	1.189	1.331	498	.711
640	5.329-5	-2395.3	8.6721	27.986	2.223	1.198	5.329-5	27.986	305	1.1757	-1.010	2.223	1.212	480	1189	.570	1.198	1.330	521	.702
660	5.139-5	-2350.3	8.7413	27.834	2.254	1.208	5.139-5	27.834	312	1.1760	-1.010	2.254	1.210	488	1159	.607	1.208	1.329	542	.695
680	4.964-5	-2306.0	8.8074	27.696	2.152	1.216	4.964-5	27.696	319	1.1525	-1.008	2.152	1.215	498	1061	.647	1.216	1.328	562	.689
700	4.803-5	-2265.1	8.8667	27.591	1.918	1.224	4.803-5	27.591	325	1.1063	-1.006	1.918	1.229	509	920	.678	1.224	1.327	581	.686
720	4.659-5	-2229.4	8.9171	27.528	1.666	1.231	4.659-5	27.528	332	1.0579	-1.003	1.666	1.250	521	800	.691	1.231	1.325	597	.684
740	4.528-5	-2197.9	8.9602	27.497	1.502	1.237	4.528-5	27.497	338	1.0263	-1.001	1.502	1.267	532	736	.690	1.237	1.324	612	.684
760	4.407-5	-2168.7	8.9991	27.484	1.425	1.242	4.407-5	27.484	345	1.0110	-1.001	1.425	1.276	542	714	.687	1.242	1.322	625	.685
780	4.293-5	-2140.6	9.0356	27.479	1.394	1.248	4.293-5	27.479	351	1.0046	-1.000	1.394	1.280	550	714	.686	1.248	1.320	638	.686
800	4.186-5	-2112.8	9.0708	27.477	1.383	1.253	4.186-5	27.477	357	1.0019	-1.000	1.383	1.281	557	721	.685	1.253	1.318	652	.687

TABLE 16.3E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 101.325 KPA (1.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.102-3	-3286.8	5.5701	27.475	1.029	1.029	1.843-3	30.240	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	1.911-3	-3266.0	5.6692	27.475	1.053	1.048	1.675-3	30.240	140	1.0000	-1.000	0.983	1.389	290	188	.731	0.983	1.389	188	.731
240	1.751-3	-3244.5	5.7627	27.475	1.109	1.067	1.535-3	30.237	151	1.0000	-1.000	0.986	1.387	303	204	.727	0.986	1.387	204	.727
260	1.614-3	-3220.5	5.8587	27.475	1.347	1.087	1.416-3	30.216	161	1.0000	-1.000	0.990	1.385	315	220	.725	0.990	1.385	220	.725
280	1.487-3	-3152.6	6.1082	27.475	2.194	1.306	1.311-3	30.121	170	1.0000	-1.000	0.997	1.383	327	234	.725	0.997	1.383	234	.725
298	1.366-3	-3100.3	6.2887	27.478	3.826	1.280	1.220-3	29.859	177	1.0000	-1.000	1.012	1.380	338	244	.731	1.012	1.380	244	.731
300	1.352-3	-3093.0	6.3132	27.479	4.097	1.276	1.211-3	29.815	177	1.0000	-1.000	1.014	1.379	340	245	.732	1.014	1.379	245	.732
320	1.175-3	-2964.8	6.7250	27.528	9.833	1.181	1.104-3	28.976	179	1.0000	-1.000	1.056	1.373	355	251	.752	1.056	1.373	251	.752
340	1.032-3	-2841.4	7.1038	27.668	1.116	1.089	1.015-3	28.306	182	1.0001	-1.000	1.094	1.367	369	260	.766	1.094	1.367	259	.767
360	9.747-4	-2819.0	7.1678	27.724	1.124	1.094	9.591-4	28.331	191	1.0002	-1.000	1.100	1.364	380	276	.763	1.098	1.365	274	.766
380	9.234-4	-2796.4	7.2288	27.785	1.133	1.100	9.094-4	28.358	200	1.0005	-1.000	1.106	1.361	389	293	.757	1.102	1.362	289	.764
400	8.772-4	-2773.7	7.2871	27.848	1.142	1.105	8.648-4	28.385	209	1.0009	-1.000	1.114	1.358	399	311	.750	1.107	1.360	305	.761
420	8.354-4	-2750.7	7.3431	27.912	1.154	1.111	8.244-4	28.413	218	1.0017	-1.000	1.124	1.353	408	331	.741	1.112	1.357	319	.760
440	7.973-4	-2727.5	7.3971	27.976	1.167	1.117	7.877-4	28.439	227	1.0029	-1.000	1.138	1.348	416	354	.729	1.117	1.354	334	.758
460	7.625-4	-2704.0	7.4494	28.038	1.185	1.123	7.541-4	28.464	235	1.0048	-1.000	1.155	1.343	425	380	.714	1.123	1.352	348	.757
480	7.306-4	-2680.1	7.5002	28.097	1.207	1.129	7.232-4	28.485	243	1.0075	-1.000	1.177	1.336	433	412	.695	1.129	1.349	363	.756
500	7.011-4	-2655.7	7.5500	28.152	1.235	1.136	6.947-4	28.503	251	1.0113	-1.001	1.206	1.328	440	450	.674	1.135	1.346	378	.755
520	6.737-4	-2630.7	7.5991	28.200	1.270	1.143	6.683-4	28.515	259	1.0165	-1.001	1.241	1.319	447	495	.650	1.142	1.343	393	.753
540	6.483-4	-2604.8	7.6479	28.242	1.314	1.150	6.436-4	28.520	267	1.0233	-1.001	1.285	1.309	454	549	.626	1.149	1.340	409	.750
560	6.245-4	-2578.0	7.6966	28.275	1.368	1.157	6.206-4	28.518	275	1.0319	-1.002	1.339	1.299	461	611	.603	1.156	1.337	425	.747
580	6.022-4	-2550.1	7.7457	28.298	1.433	1.165	5.989-4	28.506	282	1.0425	-1.002	1.403	1.288	467	680	.583	1.163	1.335	442	.744
600	5.811-4	-2520.6	7.7955	28.310	1.511	1.172	5.785-4	28.483	290	1.0555	-1.003	1.480	1.277	473	757	.567	1.171	1.332	459	.740
620	5.612-4	-2489.5	7.8465	28.311	1.603	1.180	5.592-4	28.449	297	1.0707	-1.004	1.569	1.265	479	840	.556	1.179	1.329	477	.735
640	5.422-4	-2456.4	7.8991	28.300	1.713	1.189	5.408-4	28.401	305	1.0884	-1.005	1.673	1.254	485	926	.550	1.188	1.327	496	.730
660	5.242-4	-2420.9	7.9538	28.278	1.843	1.197	5.233-4	28.341	312	1.1084	-1.006	1.793	1.242	490	1015	.550	1.196	1.325	515	.724
680	5.069-4	-2382.5	8.0110	28.245	1.997	1.205	5.066-4	28.266	319	1.1308	-1.007	1.928	1.231	496	1106	.556	1.205	1.323	535	.718
700	4.903-4	-2341.8	8.0700	28.163	2.064	1.214	4.903-4	28.163	325	1.1524	-1.009	2.064	1.221	502	1183	.568	1.214	1.321	555	.712
720	4.745-4	-2299.4	8.1297	28.035	2.171	1.222	4.745-4	28.035	332	1.1685	-1.010	2.171	1.215	509	1226	.588	1.222	1.320	575	.706
740	4.595-4	-2255.3	8.1902	27.903	2.229	1.230	4.595-4	27.903	339	1.1752	-1.010	2.229	1.212	517	1229	.614	1.230	1.320	594	.701
760	4.454-4	-2210.8	8.2495	27.775	2.201	1.238	4.454-4	27.775	345	1.1660	-1.010	2.201	1.213	525	1179	.644	1.238	1.319	613	.696
780	4.322-4	-2168.0	8.3051	27.665	2.066	1.245	4.322-4	27.665	351	1.1375	-1.008	2.066	1.220	535	1079	.672	1.245	1.318	631	.693
800	4.202-4	-2128.7	8.3549	27.583	1.860	1.252	4.202-4	27.583	357	1.0962	-1.006	1.860	1.233	545	962	.691	1.252	1.317	647	.691

TABLE 16.4E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 1013.25 KPA (10.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.097-2	-3286.8	5.0152	27.475	1.029	1.029	1.843-2	30.240	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	1.907-2	-3266.0	5.1142	27.475	1.048	1.048	1.675-2	30.240	140	1.0000	-1.000	0.983	1.389	290	188	.731	0.983	1.389	188	.731
240	1.748-2	-3244.8	5.2063	27.475	1.071	1.067	1.535-2	30.240	151	1.0000	-1.000	0.986	1.387	303	204	.727	0.986	1.387	204	.727
260	1.614-2	-3223.1	5.2934	27.475	1.113	1.087	1.417-2	30.238	161	1.0000	-1.000	0.989	1.385	315	220	.724	0.989	1.385	220	.724
280	1.498-2	-3164.1	5.5100	27.475	1.404	1.317	1.316-2	30.228	171	1.0000	-1.000	0.993	1.383	326	235	.723	0.993	1.383	235	.723
298	1.404-2	-3137.5	5.6022	27.475	1.554	1.316	1.234-2	30.202	180	1.0000	-1.000	0.997	1.381	337	248	.723	0.997	1.381	248	.723
300	1.394-2	-3134.6	5.6119	27.475	1.577	1.315	1.227-2	30.197	181	1.0000	-1.000	0.998	1.381	338	250	.723	0.998	1.381	250	.723
320	1.298-2	-3099.5	5.7249	27.476	1.982	1.311	1.147-2	30.114	189	1.0000	-1.000	1.005	1.379	349	263	.725	1.005	1.379	263	.725
340	1.202-2	-3052.4	5.8676	27.479	2.836	1.296	1.072-2	29.915	197	1.0000	-1.000	1.018	1.376	361	274	.731	1.018	1.376	274	.731
360	1.095-2	-2980.1	6.0738	27.506	4.623	1.256	9.986-3	29.500	202	1.0000	-1.000	1.041	1.371	373	284	.740	1.040	1.372	284	.741
380	9.602-3	-2852.0	6.4190	27.666	8.855	1.157	9.210-3	28.717	204	1.0001	-1.000	1.084	1.364	387	293	.755	1.083	1.365	292	.756
400	8.772-3	-2773.8	6.6219	27.848	1.137	1.105	8.648-3	28.386	209	1.0003	-1.000	1.109	1.359	399	307	.758	1.107	1.360	305	.761
420	8.354-3	-2751.0	6.6775	27.913	1.144	1.111	8.245-3	28.415	218	1.0005	-1.000	1.116	1.356	408	323	.754	1.112	1.357	319	.760
440	7.974-3	-2728.1	6.7309	27.978	1.152	1.117	7.878-3	28.443	227	1.0009	-1.000	1.124	1.352	417	340	.749	1.117	1.354	334	.759
460	7.627-3	-2704.9	6.7824	28.043	1.162	1.123	7.543-3	28.471	235	1.0015	-1.000	1.133	1.349	426	358	.743	1.123	1.352	348	.758
480	7.309-3	-2681.6	6.8320	28.105	1.172	1.129	7.235-3	28.497	243	1.0024	-1.000	1.144	1.344	434	378	.736	1.128	1.349	362	.757
500	7.016-3	-2658.0	6.8801	28.165	1.185	1.135	6.951-3	28.521	251	1.0036	-1.000	1.157	1.340	442	400	.726	1.135	1.346	377	.757
520	6.745-3	-2634.2	6.9269	28.221	1.200	1.142	6.689-3	28.542	259	1.0053	-1.000	1.173	1.334	450	426	.714	1.141	1.343	391	.755
540	6.493-3	-2610.0	6.9725	28.274	1.218	1.149	6.446-3	28.561	267	1.0076	-1.000	1.193	1.329	457	455	.701	1.147	1.340	406	.754
560	6.259-3	-2585.5	7.0171	28.322	1.240	1.155	6.219-3	28.576	275	1.0106	-1.001	1.215	1.323	464	487	.685	1.154	1.337	422	.752
580	6.041-3	-2560.4	7.0611	28.365	1.266	1.162	6.007-3	28.587	282	1.0144	-1.001	1.243	1.316	471	524	.669	1.161	1.334	437	.750
600	5.836-3	-2534.8	7.1045	28.402	1.298	1.170	5.808-3	28.594	290	1.0193	-1.001	1.275	1.309	478	566	.652	1.168	1.331	453	.748
620	5.644-3	-2508.4	7.1477	28.432	1.336	1.177	5.621-3	28.594	297	1.0253	-1.001	1.314	1.301	484	614	.636	1.176	1.329	469	.745
640	5.462-3	-2481.3	7.1908	28.456	1.382	1.184	5.444-3	28.589	304	1.0326	-1.002	1.359	1.292	490	666	.621	1.183	1.326	485	.743
660	5.291-3	-2453.1	7.2341	28.473	1.436	1.192	5.277-3	28.577	311	1.0415	-1.002	1.413	1.284	496	725	.607	1.191	1.323	501	.740
680	5.128-3	-2423.8	7.2780	28.483	1.502	1.199	5.118-3	28.558	318	1.0521	-1.003	1.477	1.274	502	789	.596	1.199	1.321	518	.736
700	4.973-3	-2393.0	7.3226	28.484	1.580	1.207	4.967-3	28.530	325	1.0648	-1.004	1.552	1.264	508	859	.588	1.207	1.318	536	.733
720	4.825-3	-2360.5	7.3684	28.479	1.673	1.215	4.823-3	28.493	332	1.0796	-1.005	1.639	1.254	513	935	.582	1.214	1.316	553	.729
740	4.683-3	-2326.4	7.4150	28.435	1.736	1.222	4.683-3	28.435	339	1.0961	-1.006	1.736	1.245	519	1012	.581	1.222	1.314	571	.725
760	4.547-3	-2290.7	7.4627	28.356	1.838	1.230	4.547-3	28.356	345	1.1136	-1.007	1.838	1.236	525	1088	.583	1.230	1.313	589	.721
780	4.416-3	-2252.9	7.5118	28.266	1.942	1.238	4.416-3	28.266	352	1.1315	-1.008	1.942	1.229	531	1159	.589	1.238	1.312	607	.718
800	4.291-3	-2213.0	7.5622	28.166	2.041	1.245	4.291-3	28.166	358	1.1484	-1.009	2.041	1.222	537	1219	.599	1.245	1.311	625	.714

TABLE 16.5E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.083747; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2496; P = 5066.25 KPA (50.00 ATM)
DRY AIR

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO W/	PRAN	CP	GAM	COND MICRO W/	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	CM K		J/G K		CM K	
200	1.038-1	-3286.8	4.6273	27.475	1.029	1.029	9.213-2	30.240	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	9.446-2	-3266.0	4.7263	27.475	1.048	1.048	8.376-2	30.240	140	1.0000	-1.000	0.983	1.389	290	188	.731	0.983	1.389	188	.731
240	8.667-2	-3244.9	4.8183	27.475	1.068	1.067	7.678-2	30.240	151	1.0000	-1.000	0.986	1.387	303	204	.727	0.986	1.387	204	.727
260	8.007-2	-3223.3	4.9047	27.475	1.092	1.087	7.087-2	30.239	161	1.0000	-1.000	0.989	1.385	315	220	.724	0.989	1.385	220	.724
280	7.444-2	-3165.2	5.1183	27.475	1.335	1.317	6.580-2	30.237	171	1.0000	-1.000	0.992	1.383	326	235	.722	0.992	1.383	235	.722
298	6.991-2	-3140.7	5.2030	27.475	1.366	1.319	6.179-2	30.232	180	1.0000	-1.000	0.996	1.382	337	249	.722	0.996	1.382	249	.722
300	6.948-2	-3138.2	5.2115	27.475	1.371	1.319	6.140-2	30.231	181	1.0000	-1.000	0.996	1.381	338	250	.722	0.996	1.381	250	.722
320	6.508-2	-3110.0	5.3022	27.475	1.452	1.321	5.753-2	30.215	190	1.0000	-1.000	1.001	1.379	349	264	.723	1.001	1.379	264	.723
340	6.108-2	-3079.5	5.3946	27.475	1.613	1.323	5.408-2	30.175	199	1.0000	-1.000	1.006	1.377	359	277	.725	1.006	1.377	277	.725
360	5.733-2	-3044.7	5.4942	27.476	1.900	1.321	5.093-2	30.092	208	1.0000	-1.000	1.014	1.375	370	290	.727	1.014	1.375	290	.727
380	5.363-2	-3002.2	5.6088	27.481	2.386	1.312	4.800-2	29.936	215	1.0000	-1.000	1.025	1.371	380	302	.731	1.025	1.372	302	.731
400	4.979-2	-2947.0	5.7503	27.504	3.212	1.289	4.519-2	29.665	221	1.0000	-1.000	1.043	1.368	392	313	.736	1.042	1.368	313	.737
420	4.554-2	-2869.4	5.9392	27.593	4.704	1.241	4.241-2	29.229	226	1.0001	-1.000	1.069	1.363	403	325	.743	1.068	1.363	324	.745
440	4.046-2	-2748.9	6.2191	27.902	7.739	1.140	3.957-2	28.570	228	1.0004	-1.000	1.113	1.354	416	337	.753	1.110	1.355	334	.757
460	3.813-2	-2705.1	6.3171	28.044	1.156	1.123	3.772-2	28.473	235	1.0006	-1.000	1.127	1.350	426	353	.751	1.123	1.352	348	.758
480	3.654-2	-2682.0	6.3665	28.107	1.163	1.129	3.618-2	28.500	243	1.0010	-1.000	1.136	1.347	434	369	.748	1.128	1.349	362	.758
500	3.508-2	-2658.6	6.4141	28.169	1.172	1.135	3.476-2	28.526	251	1.0016	-1.000	1.145	1.343	442	387	.743	1.134	1.346	376	.757
520	3.373-2	-2635.1	6.4603	28.227	1.181	1.142	3.345-2	28.550	259	1.0023	-1.000	1.156	1.339	450	407	.736	1.141	1.343	391	.756
540	3.248-2	-2611.4	6.5050	28.283	1.192	1.148	3.224-2	28.572	267	1.0034	-1.000	1.168	1.335	458	428	.729	1.147	1.340	406	.755
560	3.131-2	-2587.4	6.5486	28.335	1.205	1.155	3.111-2	28.592	275	1.0047	-1.000	1.182	1.330	465	451	.720	1.154	1.337	421	.753
580	3.023-2	-2563.1	6.5912	28.383	1.220	1.162	3.006-2	28.610	282	1.0065	-1.000	1.198	1.325	473	476	.710	1.161	1.334	436	.752
600	2.921-2	-2538.6	6.6328	28.428	1.238	1.169	2.907-2	28.624	290	1.0088	-1.000	1.217	1.320	480	505	.699	1.168	1.331	451	.750
620	2.826-2	-2513.6	6.6738	28.468	1.259	1.176	2.814-2	28.636	297	1.0116	-1.001	1.239	1.314	486	536	.687	1.175	1.328	466	.748
640	2.737-2	-2488.2	6.7141	28.503	1.283	1.183	2.727-2	28.644	304	1.0151	-1.001	1.264	1.309	493	570	.675	1.182	1.326	482	.746
660	2.652-2	-2462.2	6.7540	28.534	1.312	1.190	2.645-2	28.648	311	1.0194	-1.001	1.293	1.302	499	608	.662	1.189	1.323	498	.744
680	2.573-2	-2435.6	6.7937	28.560	1.347	1.197	2.567-2	28.648	318	1.0247	-1.001	1.328	1.295	506	650	.651	1.197	1.320	513	.742
700	2.497-2	-2408.3	6.8333	28.581	1.388	1.205	2.493-2	28.643	325	1.0311	-1.002	1.368	1.288	512	696	.639	1.204	1.318	530	.740
720	2.425-2	-2380.1	6.8731	28.596	1.436	1.212	2.423-2	28.633	332	1.0387	-1.002	1.416	1.280	517	747	.629	1.212	1.315	546	.737
740	2.357-2	-2350.8	6.9132	28.607	1.493	1.219	2.356-2	28.618	339	1.0478	-1.003	1.471	1.272	523	803	.621	1.219	1.313	562	.735
760	2.292-2	-2320.6	6.9535	28.585	1.533	1.227	2.292-2	28.585	345	1.0583	-1.004	1.533	1.264	529	862	.614	1.227	1.311	579	.732
780	2.229-2	-2289.3	6.9941	28.537	1.601	1.234	2.229-2	28.537	352	1.0702	-1.004	1.601	1.256	534	924	.610	1.234	1.309	595	.730
800	2.169-2	-2256.5	7.0356	28.482	1.677	1.241	2.169-2	28.482	358	1.0834	-1.005	1.677	1.249	540	989	.607	1.241	1.308	612	.727

TABLE 17A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO= 0.1045; MW= 28.4612;
GASEOUS COMPOSITION: CO2= .00030; H2O= .04601; N2= .74491; O2= .19984; AR= .00893

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7342-3	8.6712-2	-496.2	7.9543	7.2817	6.6090	5.9364	5.4662	1.0324	1.3946	285.5	128	177	.7505	200
210	1.6517-3	8.2583-2	-485.9	8.0047	7.3320	6.6594	5.9867	5.5165	1.0315	1.3951	292.6	134	185	.7478	210
220	1.5766-3	7.8829-2	-475.6	8.0526	7.3800	6.7073	6.0347	5.5645	1.0307	1.3955	299.5	140	193	.7452	220
230	1.5080-3	7.5402-2	-465.3	8.0985	7.4258	6.7531	6.0805	5.6103	1.0302	1.3958	306.2	145	201	.7427	230
240	1.4452-3	7.2260-2	-455.0	8.1423	7.4696	6.7970	6.1243	5.6542	1.0297	1.3961	312.9	150	209	.7404	240
250	1.3874-3	6.9370-2	-444.7	8.1843	7.5117	6.8390	6.1663	5.6962	1.0294	1.3962	319.3	156	217	.7383	250
260	1.3340-3	6.6701-2	-434.4	8.2247	7.5520	6.8794	6.2067	5.7365	1.0292	1.3963	325.7	161	225	.7365	260
270	1.2846-3	6.4231-2	-424.1	8.2635	7.5909	6.9182	6.2456	5.7754	1.0292	1.3963	331.9	166	232	.7349	270
280	1.2387-3	6.1937-2	-413.8	8.3010	7.6283	6.9556	6.2830	5.8128	1.0293	1.3963	338.0	171	240	.7336	280
290	1.1960-3	5.9801-2	-403.5	8.3371	7.6644	6.9918	6.3191	5.8489	1.0295	1.3962	343.9	176	247	.7326	290
298	1.1633-3	5.8167-2	-395.1	8.3656	7.6930	7.0203	6.3477	5.8775	1.0298	1.3960	348.7	180	253	.7319	298
300	1.1562-3	5.7808-2	-393.2	8.3720	7.6993	7.0267	6.3540	5.8839	1.0299	1.3960	349.8	181	254	.7318	300
310	1.1189-3	5.5943-2	-382.9	8.4058	7.7331	7.0605	6.3878	5.9176	1.0304	1.3957	355.5	185	261	.7315	310
320	1.0839-3	5.4195-2	-372.6	8.4385	7.7658	7.0932	6.4205	5.9504	1.0309	1.3954	361.2	190	268	.7314	320
330	1.0511-3	5.2553-2	-362.3	8.4702	7.7976	7.1249	6.4523	5.9821	1.0316	1.3950	366.7	195	275	.7314	330
340	1.0201-3	5.1007-2	-352.0	8.5010	7.8284	7.1557	6.4831	6.0129	1.0324	1.3946	372.2	199	281	.7314	340
350	9.9099-4	4.9550-2	-341.7	8.5310	7.8583	7.1857	6.5130	6.0428	1.0333	1.3941	377.6	204	288	.7313	350
360	9.6347-4	4.8173-2	-331.3	8.5601	7.8874	7.2148	6.5421	6.0720	1.0343	1.3936	382.8	208	294	.7310	360
370	9.3743-4	4.6871-2	-321.0	8.5884	7.9158	7.2431	6.5705	6.1003	1.0354	1.3930	388.0	213	301	.7307	370
380	9.1276-4	4.5638-2	-310.6	8.6161	7.9434	7.2708	6.5981	6.1279	1.0366	1.3924	393.2	217	308	.7303	380
390	8.8935-4	4.4468-2	-300.2	8.6430	7.9704	7.2977	6.6250	6.1549	1.0378	1.3917	398.2	221	314	.7299	390
400	8.6712-4	4.3356-2	-289.9	8.6693	7.9967	7.3240	6.6513	6.1812	1.0392	1.3910	403.2	225	321	.7295	400
410	8.4597-4	4.2299-2	-279.5	8.6950	8.0223	7.3497	6.6770	6.2069	1.0406	1.3903	408.1	230	328	.7293	410
420	8.2583-4	4.1291-2	-269.0	8.7201	8.0474	7.3748	6.7021	6.2319	1.0421	1.3895	412.9	234	334	.7290	420
430	8.0662-4	4.0331-2	-258.6	8.7446	8.0720	7.3993	6.7267	6.2565	1.0437	1.3887	417.7	238	340	.7288	430
440	7.8829-4	3.9415-2	-248.2	8.7686	8.0960	7.4233	6.7507	6.2805	1.0454	1.3878	422.4	242	347	.7286	440
450	7.7077-4	3.8539-2	-237.7	8.7921	8.1195	7.4468	6.7742	6.3040	1.0471	1.3869	427.0	246	353	.7284	450
460	7.5402-4	3.7701-2	-227.2	8.8152	8.1425	7.4699	6.7972	6.3271	1.0489	1.3860	431.6	250	360	.7283	460
470	7.3797-4	3.6899-2	-216.7	8.8378	8.1651	7.4924	6.8198	6.3496	1.0508	1.3851	436.1	254	366	.7282	470
480	7.2260-4	3.6130-2	-206.2	8.8599	8.1872	7.5146	6.8419	6.3718	1.0527	1.3841	440.5	257	372	.7282	480
490	7.0785-4	3.5393-2	-195.7	8.8816	8.2090	7.5363	6.8637	6.3935	1.0546	1.3831	445.0	261	378	.7281	490
500	6.9370-4	3.4685-2	-185.1	8.9030	8.2303	7.5576	6.8850	6.4148	1.0567	1.3821	449.3	265	385	.7281	500
510	6.8009-4	3.4005-2	-174.5	8.9239	8.2512	7.5786	6.9059	6.4358	1.0587	1.3811	453.6	269	391	.7280	510
520	6.6701-4	3.3351-2	-163.9	8.9445	8.2718	7.5992	6.9265	6.4563	1.0609	1.3800	457.9	273	397	.7279	520
530	6.5443-4	3.2722-2	-153.3	8.9647	8.2921	7.6194	6.9467	6.4766	1.0630	1.3790	462.1	276	404	.7279	530
540	6.4231-4	3.2116-2	-142.7	8.9846	8.3119	7.6393	6.9666	6.4965	1.0652	1.3779	466.2	280	410	.7278	540
550	6.3063-4	3.1532-2	-132.0	9.0042	8.3315	7.6589	6.9862	6.5160	1.0675	1.3768	470.3	284	416	.7277	550
560	6.1937-4	3.0969-2	-121.3	9.0234	8.3508	7.6781	7.0055	6.5353	1.0697	1.3757	474.4	287	422	.7276	560
570	6.0850-4	3.0425-2	-110.6	9.0424	8.3697	7.6971	7.0244	6.5542	1.0720	1.3746	478.4	291	429	.7275	570
580	5.9801-4	2.9901-2	-99.9	9.0610	8.3884	7.7157	7.0431	6.5729	1.0744	1.3734	482.4	294	435	.7274	580
590	5.8788-4	2.9394-2	-89.1	9.0794	8.4068	7.7341	7.0615	6.5913	1.0768	1.3723	486.3	298	441	.7272	590

TABLE 17A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO= 0.1045; MW= 28.4612;
GASEOUS COMPOSITION: CO2= .00030; H2O= .04601; N2= .74491; O2= .19984; AR= .00893

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
600	5.7808-4	2.8904-2	-78.4	9.0975	8.4249	7.7522	7.0796	6.6094	1.0792	1.3712	490.2	301	447	.7271	600
610	5.6860-4	2.8430-2	-67.6	9.1154	8.4427	7.7701	7.0974	6.6273	1.0816	1.3700	494.1	305	454	.7269	610
620	5.5943-4	2.7972-2	-56.7	9.1330	8.4604	7.7877	7.1150	6.6449	1.0840	1.3689	497.9	308	460	.7267	620
630	5.5055-4	2.7528-2	-45.9	9.1504	8.4777	7.8051	7.1324	6.6622	1.0865	1.3678	501.7	312	466	.7265	630
640	5.4195-4	2.7097-2	-35.0	9.1675	8.4948	7.8222	7.1495	6.6794	1.0890	1.3666	505.5	315	473	.7263	640
650	5.3361-4	2.6681-2	-24.1	9.1844	8.5117	7.8391	7.1664	6.6963	1.0914	1.3655	509.2	319	479	.7261	650
660	5.2553-4	2.6276-2	-13.2	9.2011	8.5284	7.8558	7.1831	6.7130	1.0940	1.3643	512.9	322	486	.7258	660
670	5.1768-4	2.5884-2	-2.2	9.2176	8.5449	7.8722	7.1996	6.7294	1.0965	1.3632	516.5	326	492	.7256	670
680	5.1007-4	2.5504-2	8.8	9.2338	8.5612	7.8885	7.2158	6.7457	1.0990	1.3621	520.2	329	498	.7254	680
690	5.0268-4	2.5134-2	19.8	9.2499	8.5772	7.9046	7.2319	6.7617	1.1015	1.3609	523.8	332	505	.7252	690
700	4.9550-4	2.4775-2	30.8	9.2657	8.5931	7.9204	7.2478	6.7776	1.1040	1.3598	527.3	336	511	.7249	700
710	4.8852-4	2.4426-2	41.8	9.2814	8.6088	7.9361	7.2635	6.7933	1.1066	1.3587	530.9	339	517	.7247	710
720	4.8173-4	2.4087-2	52.9	9.2969	8.6243	7.9516	7.2790	6.8088	1.1091	1.3576	534.4	342	524	.7245	720
730	4.7513-4	2.3757-2	64.0	9.3122	8.6396	7.9669	7.2943	6.8241	1.1117	1.3565	537.8	345	530	.7243	730
740	4.6871-4	2.3436-2	75.2	9.3274	8.6547	7.9821	7.3094	6.8392	1.1142	1.3554	541.3	349	537	.7241	740
750	4.6246-4	2.3123-2	86.3	9.3424	8.6697	7.9970	7.3244	6.8542	1.1167	1.3543	544.7	352	543	.7238	750
760	4.5638-4	2.2819-2	97.5	9.3572	8.6845	8.0118	7.3392	6.8690	1.1192	1.3532	548.1	355	549	.7236	760
770	4.5045-4	2.2523-2	108.7	9.3718	8.6992	8.0265	7.3538	6.8837	1.1217	1.3521	551.5	358	556	.7234	770
780	4.4468-4	2.2234-2	119.9	9.3863	8.7136	8.0410	7.3683	6.8982	1.1243	1.3511	554.8	361	562	.7232	780
790	4.3905-4	2.1952-2	131.2	9.4006	8.7280	8.0553	7.3827	6.9125	1.1267	1.3500	558.2	365	568	.7230	790
800	4.3356-4	2.1678-2	142.5	9.4148	8.7422	8.0695	7.3969	6.9267	1.1292	1.3490	561.5	368	574	.7228	800
810	4.2821-4	2.1410-2	153.8	9.4289	8.7562	8.0836	7.4109	6.9407	1.1317	1.3480	564.8	371	581	.7227	810
820	4.2299-4	2.1149-2	165.1	9.4428	8.7701	8.0975	7.4248	6.9546	1.1341	1.3469	568.0	374	587	.7225	820
830	4.1789-4	2.0894-2	176.4	9.4565	8.7839	8.1112	7.4386	6.9684	1.1366	1.3459	571.3	377	593	.7223	830
840	4.1291-4	2.0646-2	187.8	9.4702	8.7975	8.1248	7.4522	6.9820	1.1390	1.3450	574.5	380	600	.7222	840
850	4.0806-4	2.0403-2	199.2	9.4837	8.8110	8.1383	7.4657	6.9955	1.1414	1.3440	577.7	383	606	.7220	850
860	4.0331-4	2.0166-2	210.6	9.4970	8.8244	8.1517	7.4790	7.0089	1.1438	1.3430	580.9	386	612	.7218	860
870	3.9868-4	1.9934-2	222.1	9.5103	8.8376	8.1649	7.4923	7.0221	1.1461	1.3421	584.0	389	618	.7217	870
880	3.9415-4	1.9707-2	233.6	9.5234	8.8507	8.1781	7.5054	7.0352	1.1485	1.3411	587.2	392	624	.7215	880
890	3.8972-4	1.9486-2	245.1	9.5364	8.8637	8.1910	7.5184	7.0482	1.1508	1.3402	590.3	395	630	.7214	890
900	3.8539-4	1.9269-2	256.6	9.5492	8.8766	8.2039	7.5313	7.0611	1.1531	1.3393	593.4	398	637	.7213	900
910	3.8115-4	1.9058-2	268.1	9.5620	8.8893	8.2167	7.5440	7.0738	1.1553	1.3384	596.5	401	643	.7211	910
920	3.7701-4	1.8850-2	279.7	9.5746	8.9020	8.2293	7.5566	7.0865	1.1576	1.3376	599.6	404	649	.7210	920
930	3.7295-4	1.8648-2	291.3	9.5871	8.9145	8.2418	7.5692	7.0990	1.1598	1.3367	602.6	407	655	.7209	930
940	3.6899-4	1.8449-2	302.9	9.5996	8.9269	8.2542	7.5816	7.1114	1.1620	1.3358	605.7	410	661	.7207	940
950	3.6510-4	1.8255-2	314.5	9.6119	8.9392	8.2666	7.5939	7.1237	1.1641	1.3350	608.7	413	667	.7206	950
960	3.6130-4	1.8065-2	326.2	9.6241	8.9514	8.2788	7.6061	7.1359	1.1663	1.3342	611.7	416	673	.7205	960
970	3.5757-4	1.7879-2	337.8	9.6362	8.9635	8.2909	7.6182	7.1480	1.1683	1.3334	614.7	419	679	.7204	970
980	3.5393-4	1.7696-2	349.5	9.6482	8.9755	8.3028	7.6302	7.1600	1.1704	1.3326	617.7	421	685	.7203	980
990	3.5035-4	1.7518-2	361.3	9.6601	8.9874	8.3147	7.6421	7.1719	1.1725	1.3318	620.6	424	691	.7202	990

TABLE 17A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO= 0.1045; MW= 28.4612;
GASEOUS COMPOSITION: CO2= .00030; H2O= .04601; N2= .74491; O2= .19984; AR= .00893

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4685-4	1.7342-2	373.0	9.6718	8.9992	8.3265	7.6539	7.1837	1.1745	1.3311	623.6	427	697	.7201	1000
1050	3.3033-4	1.6517-2	431.9	9.7294	9.0567	8.3841	7.7114	7.2412	1.1838	1.3276	638.1	441	725	.7199	1050
1100	3.1532-4	1.5766-2	491.4	9.7847	9.1120	8.4393	7.7667	7.2965	1.1927	1.3244	652.4	455	753	.7199	1100
1150	3.0161-4	1.5080-2	551.2	9.8379	9.1652	8.4925	7.8199	7.3497	1.2012	1.3213	666.3	468	781	.7200	1150
1200	2.8904-4	1.4452-2	611.5	9.8892	9.2165	8.5438	7.8712	7.4010	1.2094	1.3185	679.9	481	808	.7201	1200
1250	2.7748-4	1.3874-2	672.1	9.9387	9.2660	8.5934	7.9207	7.4506	1.2171	1.3158	693.2	494	835	.7202	1250
1300	2.6681-4	1.3340-2	733.2	9.9866	9.3139	8.6413	7.9686	7.4984	1.2245	1.3133	706.2	507	861	.7204	1300
1350	2.5692-4	1.2846-2	794.6	10.0329	9.3603	8.6876	8.0149	7.5448	1.2316	1.3110	719.0	519	887	.7205	1350
1400	2.4775-4	1.2387-2	856.3	10.0778	9.4052	8.7325	8.0599	7.5897	1.2383	1.3088	731.6	531	913	.7206	1400
1450	2.3921-4	1.1960-2	918.4	10.1214	9.4487	8.7761	8.1034	7.6333	1.2447	1.3067	744.0	543	939	.7206	1450
1500	2.3123-4	1.1562-2	980.8	10.1637	9.4910	8.8184	8.1457	7.6756	1.2508	1.3047	756.1	555	964	.7207	1500
1550	2.2377-4	1.1189-2	1043.5	10.2048	9.5321	8.8595	8.1868	7.7167	1.2566	1.3029	768.1	567	989	.7204	1550
1600	2.1678-4	1.0839-2	1106.5	10.2448	9.5721	8.8995	8.2268	7.7567	1.2621	1.3012	779.9	579	1014	.7200	1600
1650	2.1021-4	1.0511-2	1169.7	10.2837	9.6111	8.9384	8.2657	7.7956	1.2674	1.2995	791.5	590	1039	.7197	1650
1700	2.0403-4	1.0201-2	1233.2	10.3216	9.6490	8.9763	8.3036	7.8335	1.2724	1.2980	802.9	602	1064	.7193	1700
1750	1.9820-4	9.9099-3	1296.9	10.3586	9.6859	9.0133	8.3406	7.8704	1.2772	1.2966	814.2	613	1088	.7190	1750
1800	1.9269-4	9.6347-3	1360.9	10.3946	9.7220	9.0493	8.3766	7.9065	1.2817	1.2952	825.3	624	1113	.7186	1800
1850	1.8749-4	9.3743-3	1425.1	10.4298	9.7571	9.0845	8.4118	7.9417	1.2860	1.2939	836.2	635	1137	.7183	1850
1900	1.8255-4	9.1276-3	1489.5	10.4641	9.7915	9.1188	8.4462	7.9760	1.2901	1.2927	847.1	646	1160	.7180	1900
1950	1.7787-4	8.8935-3	1554.1	10.4977	9.8251	9.1524	8.4797	8.0096	1.2940	1.2916	857.8	656	1184	.7176	1950
2000	1.7342-4	8.6712-3	1618.9	10.5305	9.8579	9.1852	8.5125	8.0424	1.2978	1.2905	868.3	667	1207	.7173	2000
2050	1.6919-4	8.4597-3	1683.9	10.5626	9.8899	9.2173	8.5446	8.0745	1.3013	1.2895	878.8	678	1229	.7173	2050
2100	1.6517-4	8.2583-3	1749.0	10.5940	9.9213	9.2487	8.5760	8.1059	1.3047	1.2885	889.1	688	1252	.7172	2100
2150	1.6132-4	8.0662-3	1814.4	10.6247	9.9521	9.2794	8.6068	8.1366	1.3079	1.2876	899.3	698	1274	.7172	2150
2200	1.5766-4	7.8829-3	1879.8	10.6548	9.9822	9.3095	8.6369	8.1667	1.3110	1.2867	909.4	709	1295	.7172	2200
2250	1.5415-4	7.7077-3	1945.5	10.6843	10.0117	9.3390	8.6664	8.1962	1.3139	1.2859	919.4	719	1317	.7173	2250
2300	1.5080-4	7.5402-3	2011.2	10.7132	10.0406	9.3679	8.6953	8.2251	1.3167	1.2851	929.2	729	1338	.7173	2300
2350	1.4759-4	7.3797-3	2077.1	10.7416	10.0689	9.3963	8.7236	8.2535	1.3193	1.2844	939.0	739	1359	.7174	2350
2400	1.4452-4	7.2260-3	2143.1	10.7694	10.0967	9.4241	8.7514	8.2813	1.3219	1.2837	948.7	749	1380	.7175	2400
2450	1.4157-4	7.0785-3	2209.3	10.7967	10.1240	9.4514	8.7787	8.3085	1.3243	1.2830	958.3	759	1401	.7176	2450
2500	1.3874-4	6.9370-3	2275.6	10.8235	10.1508	9.4781	8.8055	8.3353	1.3267	1.2824	967.8	769	1421	.7178	2500
2550	1.3602-4	6.8009-3	2342.0	10.8498	10.1771	9.5044	8.8318	8.3616	1.3289	1.2818	977.2	779	1442	.7177	2550
2600	1.3340-4	6.6702-3	2408.5	10.8756	10.2029	9.5303	8.8576	8.3874	1.3311	1.2812	986.5	788	1462	.7175	2600
2650	1.3089-4	6.5443-3	2475.1	10.9010	10.2283	9.5556	8.8830	8.4128	1.3332	1.2806	995.7	798	1483	.7174	2650
2700	1.2846-4	6.4231-3	2541.8	10.9259	10.2532	9.5806	8.9079	8.4378	1.3352	1.2801	1004.8	808	1503	.7173	2700
2750	1.2613-4	6.3063-3	2608.6	10.9504	10.2778	9.6051	8.9324	8.4623	1.3371	1.2796	1013.9	817	1523	.7171	2750
2800	1.2387-4	6.1937-3	2675.5	10.9745	10.3019	9.6292	8.9566	8.4864	1.3390	1.2791	1022.9	826	1543	.7170	2800
2850	1.2170-4	6.0850-3	2742.5	10.9982	10.3256	9.6529	8.9803	8.5101	1.3408	1.2786	1031.7	836	1563	.7168	2850
2900	1.1960-4	5.9801-3	2809.6	11.0216	10.3489	9.6763	9.0036	8.5334	1.3426	1.2781	1040.6	845	1583	.7167	2900
2950	1.1758-4	5.8788-3	2876.7	11.0445	10.3719	9.6992	9.0266	8.5564	1.3443	1.2777	1049.3	854	1603	.7165	2950
3000	1.1562-4	5.7808-3	2944.0	11.0671	10.3945	9.7218	9.0492	8.5790	1.3460	1.2772	1058.0	864	1623	.7163	3000

TABLE 17.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO =0; CHEM. EQUIV. RATIO = 0.1045; P = 1.01325 KPA (0.01 ATM)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8539-6	256.6	9.5493	28.461	398	1.0000	-1.0000	1.1535	1.3391	593.4	637	.721	1.1531	1.3393	593.4	637	.721
950	3.6510-6	314.6	9.6119	28.461	413	1.0000	-1.0000	1.1649	1.3347	608.6	667	.721	1.1641	1.3350	608.7	667	.721
1000	3.4685-6	373.1	9.6720	28.461	427	1.0000	-1.0000	1.1756	1.3306	623.5	697	.720	1.1745	1.3311	623.6	697	.720
1050	3.3033-6	432.1	9.7296	28.461	441	1.0000	-1.0000	1.1856	1.3270	638.0	726	.720	1.1838	1.3276	638.1	725	.720
1100	3.1532-6	491.7	9.7849	28.461	455	1.0000	-1.0000	1.1954	1.3234	652.1	755	.720	1.1927	1.3244	652.4	753	.720
1150	3.0161-6	551.7	9.8383	28.461	468	1.0000	-1.0000	1.2051	1.3200	665.9	783	.720	1.2012	1.3213	666.3	781	.720
1200	2.8904-6	612.2	9.8898	28.461	481	1.0000	-1.0000	1.2148	1.3166	679.4	812	.720	1.2094	1.3185	679.9	808	.720
1250	2.7748-6	673.2	9.9396	28.461	494	1.0001	-1.0000	1.2246	1.3133	692.5	840	.720	1.2171	1.3158	693.2	835	.720
1300	2.6680-6	734.6	9.9878	28.461	507	1.0001	-1.0000	1.2346	1.3100	705.3	869	.720	1.2245	1.3133	706.2	861	.720
1350	2.5692-6	796.6	10.0346	28.461	519	1.0002	-1.0000	1.2450	1.3067	717.9	897	.720	1.2316	1.3110	719.0	887	.720
1400	2.4774-6	859.1	10.0801	28.461	531	1.0003	-1.0000	1.2560	1.3033	730.1	927	.720	1.2383	1.3088	731.6	913	.721
1450	2.3920-6	922.2	10.1243	28.460	543	1.0005	-1.0000	1.2678	1.2998	742.0	957	.720	1.2447	1.3067	744.0	939	.721
1500	2.3122-6	985.9	10.1675	28.460	555	1.0008	-1.0000	1.2809	1.2960	753.6	990	.719	1.2508	1.3047	756.2	964	.721
1550	2.2375-6	1050.4	10.2098	28.459	567	1.0012	-1.0000	1.2958	1.2919	764.9	1025	.717	1.2566	1.3029	768.1	989	.720
1600	2.1675-6	1115.6	10.2512	28.457	579	1.0019	-1.0000	1.3132	1.2875	775.8	1063	.715	1.2622	1.3012	779.9	1015	.720
1650	2.1017-6	1181.7	10.2919	28.455	590	1.0029	-1.0001	1.3339	1.2824	786.3	1106	.712	1.2674	1.2996	791.6	1040	.720
1700	2.0396-6	1249.0	10.3321	28.452	602	1.0043	-1.0001	1.3593	1.2767	796.4	1156	.707	1.2724	1.2981	803.0	1064	.719
1750	1.9811-6	1317.8	10.3719	28.448	613	1.0064	-1.0002	1.3907	1.2702	806.0	1216	.701	1.2772	1.2967	814.4	1089	.719
1800	1.9256-6	1388.2	10.4116	28.442	624	1.0094	-1.0003	1.4304	1.2626	815.1	1290	.692	1.2817	1.2955	825.6	1113	.718
1850	1.8730-6	1461.0	10.4515	28.433	635	1.0137	-1.0004	1.4807	1.2540	823.6	1385	.679	1.2861	1.2943	836.8	1137	.718
1900	1.8229-6	1536.5	10.4918	28.420	646	1.0196	-1.0006	1.5449	1.2442	831.6	1507	.662	1.2902	1.2932	847.8	1161	.718
1950	1.7751-6	1615.8	10.5329	28.403	656	1.0277	-1.0008	1.6268	1.2334	839.1	1667	.641	1.2941	1.2923	858.9	1185	.717
2000	1.7293-6	1699.6	10.5754	28.379	667	1.0387	-1.0012	1.7312	1.2216	846.0	1878	.615	1.2979	1.2915	869.9	1209	.716
2050	1.6852-6	1789.3	10.6197	28.347	678	1.0534	-1.0017	1.8634	1.2091	852.6	2156	.586	1.3015	1.2909	881.0	1232	.716
2100	1.6426-6	1886.5	10.6665	28.305	688	1.0728	-1.0024	2.0297	1.1964	859.1	2521	.554	1.3050	1.2905	892.2	1255	.715
2150	1.6012-6	1993.0	10.7166	28.248	698	1.0980	-1.0034	2.2370	1.1838	865.5	2993	.522	1.3084	1.2903	903.6	1279	.714
2200	1.5607-6	2111.0	10.7709	28.175	709	1.1302	-1.0046	2.4923	1.1718	872.2	3593	.492	1.3116	1.2903	915.3	1303	.713
2250	1.5209-6	2243.1	10.8302	28.080	719	1.1705	-1.0062	2.8024	1.1608	879.4	4338	.464	1.3148	1.2907	927.3	1328	.711
2300	1.4815-6	2392.3	10.8958	27.960	729	1.2202	-1.0083	3.1730	1.1511	887.3	5234	.442	1.3180	1.2914	939.8	1354	.709
2350	1.4422-6	2561.5	10.9686	27.811	739	1.2799	-1.0108	3.6071	1.1428	896.0	6274	.425	1.3211	1.2925	952.9	1382	.706
2400	1.4029-6	2754.0	11.0496	27.628	748	1.3496	-1.0138	4.1037	1.1360	905.8	7426	.414	1.3242	1.2941	966.8	1411	.702
2450	1.3633-6	2972.8	11.1398	27.408	758	1.4286	-1.0174	4.6550	1.1307	916.7	8632	.409	1.3274	1.2962	981.5	1442	.698
2500	1.3234-6	3220.2	11.2397	27.148	768	1.5143	-1.0214	5.2448	1.1268	928.8	9813	.410	1.3306	1.2990	997.3	1476	.692
2550	1.2832-6	3497.5	11.3495	26.850	777	1.6030	-1.0257	5.8465	1.1241	942.1	10879	.418	1.3339	1.3023	1014.1	1512	.686
2600	1.2428-6	3804.4	11.4687	26.515	787	1.6891	-1.0301	6.4238	1.1226	956.7	11740	.430	1.3373	1.3063	1032.0	1551	.678
2650	1.2025-6	4138.7	11.5961	26.149	796	1.7660	-1.0342	6.9342	1.1221	972.4	12329	.448	1.3407	1.3109	1051.0	1591	.671
2700	1.1628-6	4496.0	11.7296	25.762	806	1.8272	-1.0377	7.3347	1.1226	989.0	12614	.469	1.3442	1.3160	1070.8	1633	.663
2750	1.1240-6	4869.8	11.8668	25.364	816	1.8675	-1.0404	7.5905	1.1239	1006.6	12595	.492	1.3476	1.3214	1091.4	1676	.656
2800	1.0866-6	5252.3	12.0046	24.966	826	1.8838	-1.0419	7.6795	1.1261	1024.7	12300	.516	1.3510	1.3272	1112.5	1718	.650
2850	1.0510-6	5634.8	12.1400	24.579	836	1.8753	-1.0423	7.5945	1.1290	1043.3	11772	.539	1.3542	1.3330	1133.6	1759	.644
2900	1.0175-6	6008.9	12.2702	24.214	846	1.8431	-1.0416	7.3421	1.1329	1062.1	11056	.562	1.3573	1.3387	1154.6	1798	.639
2950	9.8640-7	6366.6	12.3925	23.878	857	1.7902	-1.0397	6.9416	1.1377	1081.1	10202	.583	1.3601	1.3441	1175.0	1835	.635
3000	9.5770-7	6701.1	12.5049	23.576	867	1.7212	-1.0369	6.4253	1.1437	1100.0	9264	.601	1.3628	1.3491	1194.7	1871	.631

TABLE 17.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO =0; CHEM. EQUIV. RATIO = 0.1045; P = 10.1325 KPA (0.10 ATM)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8539-5	256.6	8.8766	28.461	398	1.0000	-1.0000	1.1535	1.3391	593.4	637	.721	1.1531	1.3393	593.4	637	.721
950	3.6510-5	314.6	8.9393	28.461	413	1.0000	-1.0000	1.1649	1.3347	608.6	667	.721	1.1641	1.3350	608.7	667	.721
1000	3.4685-5	373.1	8.9993	28.461	427	1.0000	-1.0000	1.1756	1.3306	623.5	697	.720	1.1745	1.3311	623.6	697	.720
1050	3.3033-5	432.1	9.0569	28.461	441	1.0000	-1.0000	1.1856	1.3270	638.0	726	.720	1.1838	1.3276	638.1	725	.720
1100	3.1532-5	491.7	9.1123	28.461	455	1.0000	-1.0000	1.1954	1.3234	652.1	755	.720	1.1927	1.3244	652.4	753	.720
1150	3.0161-5	551.7	9.1656	28.461	468	1.0000	-1.0000	1.2050	1.3200	665.9	783	.720	1.2012	1.3213	666.3	781	.720
1200	2.8904-5	612.2	9.2171	28.461	481	1.0000	-1.0000	1.2146	1.3167	679.4	812	.720	1.2094	1.3185	679.9	808	.720
1250	2.7748-5	673.1	9.2669	28.461	494	1.0000	-1.0000	1.2242	1.3135	692.6	840	.720	1.2171	1.3158	693.2	835	.720
1300	2.6680-5	734.6	9.3151	28.461	507	1.0000	-1.0000	1.2338	1.3103	705.4	868	.720	1.2245	1.3133	706.2	861	.720
1350	2.5692-5	796.5	9.3618	28.461	519	1.0001	-1.0000	1.2437	1.3071	718.0	896	.720	1.2316	1.3110	719.0	887	.720
1400	2.4775-5	858.9	9.4073	28.461	531	1.0001	-1.0000	1.2538	1.3039	730.3	925	.720	1.2383	1.3088	731.6	913	.721
1450	2.3920-5	921.9	9.4514	28.461	543	1.0002	-1.0000	1.2644	1.3006	742.3	954	.720	1.2447	1.3067	744.0	939	.721
1500	2.3123-5	985.4	9.4945	28.460	555	1.0004	-1.0000	1.2756	1.2973	754.0	984	.720	1.2508	1.3047	756.1	964	.721
1550	2.2376-5	1049.5	9.5365	28.460	567	1.0006	-1.0000	1.2875	1.2939	765.4	1015	.719	1.2566	1.3029	768.1	989	.720
1600	2.1677-5	1114.2	9.5776	28.459	579	1.0009	-1.0000	1.3005	1.2903	776.6	1048	.718	1.2621	1.3012	779.9	1015	.720
1650	2.1019-5	1179.5	9.6178	28.458	590	1.0013	-1.0000	1.3149	1.2866	787.5	1083	.717	1.2674	1.2996	791.5	1039	.720
1700	2.0400-5	1245.7	9.6573	28.457	602	1.0019	-1.0000	1.3311	1.2825	798.1	1120	.715	1.2724	1.2981	803.0	1064	.719
1750	1.9816-5	1312.7	9.6962	28.455	613	1.0027	-1.0001	1.3497	1.2781	808.4	1161	.712	1.2772	1.2966	814.3	1089	.719
1800	1.9263-5	1380.7	9.7345	28.453	624	1.0039	-1.0001	1.3711	1.2734	818.4	1207	.709	1.2817	1.2953	825.4	1113	.719
1850	1.8740-5	1449.9	9.7724	28.449	635	1.0055	-1.0001	1.3964	1.2682	828.1	1258	.705	1.2860	1.2941	836.5	1137	.718
1900	1.8244-5	1520.4	9.8100	28.444	646	1.0077	-1.0002	1.4263	1.2624	837.3	1319	.699	1.2901	1.2929	847.4	1161	.718
1950	1.7772-5	1592.6	9.8475	28.437	657	1.0106	-1.0003	1.4622	1.2561	846.3	1390	.691	1.2940	1.2919	858.2	1184	.717
2000	1.7322-5	1666.8	9.8850	28.428	667	1.0144	-1.0004	1.5053	1.2492	854.8	1476	.681	1.2978	1.2909	869.0	1208	.717
2050	1.6893-5	1743.3	9.9228	28.417	678	1.0194	-1.0006	1.5573	1.2417	863.0	1580	.668	1.3013	1.2901	879.7	1230	.717
2100	1.6482-5	1822.7	9.9611	28.401	688	1.0259	-1.0008	1.6200	1.2336	870.8	1708	.653	1.3047	1.2893	890.3	1253	.717
2150	1.6087-5	1905.5	10.0001	28.381	699	1.0342	-1.0011	1.6957	1.2250	878.4	1868	.634	1.3079	1.2886	900.9	1276	.716
2200	1.5707-5	1992.5	10.0401	28.356	709	1.0448	-1.0015	1.7865	1.2160	885.7	2065	.613	1.3110	1.2881	911.6	1298	.716
2250	1.5341-5	2084.4	10.0814	28.323	719	1.0581	-1.0021	1.8952	1.2068	892.8	2310	.590	1.3139	1.2877	922.2	1321	.716
2300	1.4985-5	2182.3	10.1244	28.282	729	1.0746	-1.0027	2.0243	1.1976	899.9	2611	.566	1.3168	1.2874	933.0	1343	.715
2350	1.4640-5	2287.3	10.1695	28.231	739	1.0949	-1.0035	2.1767	1.1886	907.0	2978	.541	1.3195	1.2873	943.9	1366	.714
2400	1.4303-5	2400.4	10.2172	28.167	749	1.1194	-1.0046	2.3550	1.1799	914.3	3420	.516	1.3221	1.2874	955.0	1389	.713
2450	1.3972-5	2523.2	10.2678	28.090	759	1.1487	-1.0059	2.5615	1.1718	921.8	3943	.493	1.3247	1.2877	966.4	1412	.712
2500	1.3647-5	2657.1	10.3219	27.996	769	1.1834	-1.0074	2.7980	1.1644	929.8	4552	.473	1.3272	1.2883	978.0	1437	.711
2550	1.3326-5	2803.5	10.3799	27.884	779	1.2235	-1.0093	3.0653	1.1579	938.3	5242	.456	1.3297	1.2891	990.0	1462	.708
2600	1.3007-5	2964.1	10.4423	27.751	789	1.2694	-1.0115	3.3630	1.1522	947.4	6004	.442	1.3321	1.2902	1002.5	1489	.706
2650	1.2691-5	3140.3	10.5094	27.596	798	1.3206	-1.0140	3.6887	1.1474	957.1	6819	.432	1.3346	1.2916	1015.5	1517	.703
2700	1.2375-5	3333.4	10.5815	27.417	808	1.3766	-1.0168	4.0378	1.1435	967.6	7659	.426	1.3370	1.2934	1029.1	1546	.699
2750	1.2060-5	3544.4	10.6589	27.213	818	1.4363	-1.0199	4.4029	1.1405	978.9	8488	.424	1.3394	1.2955	1043.3	1577	.694
2800	1.1745-5	3773.8	10.7416	26.985	827	1.4980	-1.0233	4.7738	1.1384	991.0	9267	.426	1.3419	1.2980	1058.2	1610	.690
2850	1.1431-5	4021.6	10.8293	26.734	837	1.5594	-1.0267	5.1372	1.1370	1003.9	9957	.432	1.3444	1.3010	1073.8	1645	.684
2900	1.1120-5	4287.1	10.9217	26.461	847	1.6180	-1.0301	5.4777	1.1364	1017.6	10523	.441	1.3469	1.3043	1090.2	1681	.679
2950	1.0812-5	4568.7	11.0179	26.171	857	1.6708	-1.0334	5.7789	1.1365	1032.0	10938	.453	1.3495	1.3079	1107.1	1718	.673
3000	1.0508-5	4864.1	11.1172	25.868	866	1.7151	-1.0363	6.0247	1.1372	1047.2	11188	.467	1.3520	1.3119	1124.7	1757	.667

TABLE 17.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO =0; CHEM. EQUIV. RATIO = 0.1045; P = 101.325 KPA (1.00 ATM)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN	CP	GAM	VS	COND PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K	J/G K		M/S	MICRO W/CM K
900	3.8539-4	256.6	8.2039	28.461	398	1.0000	-1.0000	1.1535	1.3391	593.4	637 .721	1.1531	1.3393	593.4	637 .721
950	3.6510-4	314.6	8.2666	28.461	413	1.0000	-1.0000	1.1649	1.3347	608.6	667 .721	1.1641	1.3350	608.7	667 .721
1000	3.4685-4	373.1	8.3266	28.461	427	1.0000	-1.0000	1.1756	1.3306	623.5	697 .720	1.1745	1.3311	623.6	697 .720
1050	3.3033-4	432.1	8.3842	28.461	441	1.0000	-1.0000	1.1856	1.3270	638.0	726 .720	1.1838	1.3276	638.1	725 .720
1100	3.1532-4	491.7	8.4396	28.461	455	1.0000	-1.0000	1.1953	1.3234	652.1	755 .720	1.1927	1.3244	652.4	753 .720
1150	3.0161-4	551.7	8.4930	28.461	468	1.0000	-1.0000	1.2049	1.3200	665.9	783 .720	1.2012	1.3213	666.3	781 .720
1200	2.8904-4	612.1	8.5445	28.461	481	1.0000	-1.0000	1.2145	1.3167	679.4	811 .720	1.2094	1.3185	679.9	808 .720
1250	2.7748-4	673.1	8.5942	28.461	494	1.0000	-1.0000	1.2239	1.3135	692.6	839 .720	1.2171	1.3158	693.2	835 .720
1300	2.6681-4	734.5	8.6424	28.461	507	1.0000	-1.0000	1.2334	1.3104	705.4	867 .720	1.2245	1.3133	706.2	861 .720
1350	2.5692-4	796.5	8.6891	28.461	519	1.0000	-1.0000	1.2430	1.3072	718.0	896 .721	1.2316	1.3110	719.0	887 .720
1400	2.4775-4	858.8	8.7345	28.461	531	1.0001	-1.0000	1.2528	1.3042	730.3	924 .721	1.2383	1.3088	731.6	913 .721
1450	2.3920-4	921.7	8.7787	28.461	543	1.0001	-1.0000	1.2627	1.3011	742.4	952 .721	1.2447	1.3067	744.0	939 .721
1500	2.3123-4	985.1	8.8216	28.461	555	1.0002	-1.0000	1.2730	1.2980	754.2	981 .720	1.2508	1.3047	756.1	964 .721
1550	2.2377-4	1049.0	8.8636	28.461	567	1.0003	-1.0000	1.2836	1.2948	765.7	1011 .720	1.2566	1.3029	768.1	989 .720
1600	2.1677-4	1113.5	8.9045	28.460	579	1.0004	-1.0000	1.2948	1.2917	777.0	1042 .719	1.2621	1.3012	779.9	1015 .720
1650	2.1020-4	1178.5	8.9445	28.460	590	1.0006	-1.0000	1.3066	1.2884	788.1	1073 .719	1.2674	1.2996	791.5	1039 .720
1700	2.0401-4	1244.2	8.9837	28.459	602	1.0009	-1.0000	1.3191	1.2851	798.9	1106 .718	1.2724	1.2980	802.9	1064 .719
1750	1.9818-4	1310.5	9.0221	28.458	613	1.0013	-1.0000	1.3326	1.2817	809.5	1140 .716	1.2772	1.2966	814.2	1089 .719
1800	1.9267-4	1377.5	9.0599	28.457	624	1.0018	-1.0000	1.3473	1.2781	819.8	1176 .715	1.2817	1.2953	825.3	1113 .719
1850	1.8745-4	1445.2	9.0970	28.456	635	1.0024	-1.0001	1.3635	1.2743	830.0	1214 .713	1.2860	1.2940	836.3	1137 .718
1900	1.8250-4	1513.8	9.1336	28.453	646	1.0033	-1.0001	1.3814	1.2704	839.8	1255 .711	1.2901	1.2928	847.2	1161 .718
1950	1.7780-4	1583.4	9.1697	28.451	657	1.0045	-1.0001	1.4014	1.2662	849.5	1300 .708	1.2940	1.2917	858.0	1184 .718
2000	1.7334-4	1654.0	9.2055	28.447	667	1.0059	-1.0002	1.4240	1.2619	858.9	1349 .704	1.2977	1.2907	868.6	1207 .717
2050	1.6908-4	1725.8	9.2410	28.442	678	1.0078	-1.0002	1.4496	1.2572	868.0	1404 .700	1.3012	1.2897	879.2	1230 .717
2100	1.6502-4	1799.0	9.2762	28.436	688	1.0102	-1.0003	1.4787	1.2523	876.9	1466 .694	1.3046	1.2889	889.6	1252 .717
2150	1.6114-4	1873.8	9.3114	28.428	699	1.0132	-1.0004	1.5121	1.2471	885.5	1537 .687	1.3078	1.2881	900.0	1275 .717
2200	1.5742-4	1950.3	9.3466	28.418	709	1.0169	-1.0006	1.5504	1.2416	894.0	1619 .679	1.3108	1.2873	910.3	1297 .717
2250	1.5386-4	2028.9	9.3819	28.406	720	1.0215	-1.0007	1.5944	1.2359	902.2	1715 .669	1.3137	1.2867	920.5	1319 .717
2300	1.5043-4	2109.9	9.4175	28.391	730	1.0272	-1.0010	1.6449	1.2299	910.2	1826 .657	1.3165	1.2861	930.7	1340 .717
2350	1.4713-4	2193.5	9.4535	28.372	740	1.0341	-1.0012	1.7027	1.2237	918.0	1958 .644	1.3191	1.2856	940.9	1362 .717
2400	1.4395-4	2280.3	9.4900	28.350	750	1.0424	-1.0016	1.7690	1.2174	925.7	2112 .628	1.3216	1.2852	951.1	1383 .716
2450	1.4088-4	2370.6	9.5273	28.322	760	1.0523	-1.0020	1.8445	1.2110	933.3	2292 .611	1.3241	1.2849	961.3	1405 .716
2500	1.3790-4	2464.9	9.5654	28.289	770	1.0641	-1.0025	1.9302	1.2047	940.8	2504 .593	1.3264	1.2847	971.6	1426 .716
2550	1.3500-4	2563.8	9.6045	28.249	780	1.0780	-1.0031	2.0271	1.1984	948.4	2751 .575	1.3286	1.2846	981.9	1449 .715
2600	1.3219-4	2667.8	9.6449	28.202	789	1.0941	-1.0039	2.1361	1.1924	956.0	3036 .555	1.3308	1.2846	992.3	1471 .714
2650	1.2944-4	2777.6	9.6867	28.147	799	1.1128	-1.0048	2.2577	1.1866	963.8	3362 .537	1.3328	1.2847	1002.8	1493 .713
2700	1.2675-4	2893.8	9.7302	28.082	809	1.1341	-1.0058	2.3927	1.1811	971.7	3733 .518	1.3349	1.2850	1013.5	1516 .712
2750	1.2411-4	3017.1	9.7754	28.007	818	1.1583	-1.0070	2.5412	1.1761	979.9	4147 .502	1.3368	1.2855	1024.4	1540 .711
2800	1.2152-4	3148.2	9.8226	27.920	828	1.1854	-1.0084	2.7032	1.1715	988.3	4603 .486	1.3388	1.2861	1035.5	1564 .709
2850	1.1897-4	3287.6	9.8720	27.822	838	1.2154	-1.0100	2.8783	1.1674	997.1	5098 .473	1.3406	1.2869	1046.9	1588 .707
2900	1.1644-4	3436.2	9.9237	27.710	847	1.2483	-1.0118	3.0654	1.1638	1006.3	5625 .462	1.3425	1.2878	1058.6	1614 .705
2950	1.1395-4	3594.4	9.9778	27.584	857	1.2838	-1.0138	3.2631	1.1607	1015.9	6174 .453	1.3444	1.2890	1070.6	1640 .702
3000	1.1149-4	3762.6	10.0343	27.444	866	1.3215	-1.0159	3.4692	1.1582	1026.0	6733 .446	1.3462	1.2904	1083.0	1668 .699

TABLE 17.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO =0; CHEM. EQUIV. RATIO = 0.1045; P = 1013.25 KPA (10.00 ATM)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8539-3	256.6	7.5313	28.461	398	1.0000	-1.0000	1.1535	1.3391	593.4	637	.721	1.1531	1.3393	593.4	637	.721
950	3.6510-3	314.6	7.5940	28.461	413	1.0000	-1.0000	1.1649	1.3347	608.6	667	.721	1.1641	1.3350	608.7	667	.721
1000	3.4685-3	373.1	7.6540	28.461	427	1.0000	-1.0000	1.1756	1.3306	623.5	697	.720	1.1745	1.3311	623.6	697	.720
1050	3.3033-3	432.1	7.7116	28.461	441	1.0000	-1.0000	1.1856	1.3269	638.0	726	.720	1.1838	1.3276	638.1	725	.720
1100	3.1532-3	491.7	7.7670	28.461	455	1.0000	-1.0000	1.1953	1.3234	652.1	755	.720	1.1927	1.3244	652.4	753	.720
1150	3.0161-3	551.7	7.8203	28.461	468	1.0000	-1.0000	1.2049	1.3200	665.9	783	.720	1.2012	1.3213	666.3	781	.720
1200	2.8904-3	612.1	7.8718	28.461	481	1.0000	-1.0000	1.2144	1.3167	679.4	811	.720	1.2094	1.3185	679.9	808	.720
1250	2.7748-3	673.1	7.9216	28.461	494	1.0000	-1.0000	1.2238	1.3135	692.6	839	.720	1.2171	1.3158	693.2	835	.720
1300	2.6681-3	734.5	7.9698	28.461	507	1.0000	-1.0000	1.2333	1.3104	705.4	867	.720	1.2245	1.3133	706.2	861	.720
1350	2.5693-3	796.4	8.0165	28.461	519	1.0000	-1.0000	1.2427	1.3073	718.0	895	.721	1.2316	1.3110	719.0	887	.720
1400	2.4775-3	858.8	8.0618	28.461	531	1.0000	-1.0000	1.2522	1.3043	730.4	923	.721	1.2383	1.3087	731.6	913	.721
1450	2.3921-3	921.7	8.1060	28.461	543	1.0000	-1.0000	1.2619	1.3013	742.4	952	.721	1.2447	1.3067	744.0	939	.721
1500	2.3123-3	985.0	8.1489	28.461	555	1.0001	-1.0000	1.2717	1.2983	754.3	980	.721	1.2508	1.3047	756.1	964	.721
1550	2.2377-3	1048.8	8.1908	28.461	567	1.0001	-1.0000	1.2817	1.2953	765.8	1009	.720	1.2566	1.3029	768.1	989	.720
1600	2.1678-3	1113.2	8.2316	28.461	579	1.0002	-1.0000	1.2920	1.2923	777.2	1039	.720	1.2621	1.3012	779.9	1015	.720
1650	2.1021-3	1178.0	8.2715	28.461	590	1.0003	-1.0000	1.3026	1.2893	788.3	1069	.719	1.2674	1.2995	791.5	1039	.720
1700	2.0402-3	1243.4	8.3106	28.461	602	1.0004	-1.0000	1.3135	1.2863	799.3	1100	.719	1.2724	1.2980	802.9	1064	.719
1750	1.9819-3	1309.4	8.3488	28.460	613	1.0006	-1.0000	1.3249	1.2833	810.0	1131	.718	1.2772	1.2966	814.2	1089	.719
1800	1.9268-3	1375.9	8.3863	28.460	624	1.0008	-1.0000	1.3369	1.2802	820.5	1163	.717	1.2817	1.2952	825.3	1113	.719
1850	1.8747-3	1443.1	8.4231	28.459	635	1.0011	-1.0000	1.3494	1.2771	830.8	1196	.716	1.2860	1.2940	836.3	1137	.718
1900	1.8253-3	1510.9	8.4593	28.458	646	1.0015	-1.0000	1.3626	1.2739	840.9	1231	.715	1.2901	1.2928	847.1	1160	.718
1950	1.7784-3	1579.4	8.4948	28.456	657	1.0020	-1.0001	1.3766	1.2707	850.9	1266	.714	1.2940	1.2916	857.9	1184	.718
2000	1.7338-3	1648.6	8.5299	28.455	667	1.0026	-1.0001	1.3916	1.2674	860.6	1304	.712	1.2977	1.2906	868.5	1207	.717
2050	1.6914-3	1718.5	8.5644	28.453	678	1.0034	-1.0001	1.4076	1.2641	870.2	1343	.711	1.3012	1.2896	878.9	1230	.717
2100	1.6510-3	1789.4	8.5986	28.450	688	1.0044	-1.0001	1.4250	1.2606	879.6	1384	.709	1.3046	1.2887	889.3	1252	.717
2150	1.6124-3	1861.1	8.6323	28.447	699	1.0056	-1.0002	1.4437	1.2571	888.8	1429	.706	1.3078	1.2878	899.6	1274	.717
2200	1.5755-3	1933.8	8.6657	28.443	709	1.0070	-1.0002	1.4641	1.2535	897.9	1477	.703	1.3108	1.2870	909.8	1296	.717
2250	1.5403-3	2007.5	8.6989	28.438	720	1.0088	-1.0003	1.4864	1.2498	906.7	1529	.700	1.3137	1.2863	919.9	1318	.717
2300	1.5065-3	2082.4	8.7318	28.431	730	1.0109	-1.0004	1.5108	1.2460	915.5	1585	.695	1.3164	1.2856	929.9	1340	.717
2350	1.4740-3	2158.6	8.7646	28.424	740	1.0135	-1.0005	1.5376	1.2421	924.0	1648	.690	1.3190	1.2850	939.8	1361	.717
2400	1.4429-3	2236.2	8.7973	28.415	750	1.0165	-1.0006	1.5670	1.2381	932.5	1717	.684	1.3215	1.2844	949.7	1382	.717
2450	1.4129-3	2315.4	8.8299	28.404	760	1.0200	-1.0008	1.5993	1.2341	940.8	1794	.678	1.3239	1.2839	959.5	1403	.717
2500	1.3840-3	2396.2	8.8626	28.392	770	1.0242	-1.0009	1.6348	1.2300	948.9	1880	.670	1.3262	1.2834	969.3	1424	.717
2550	1.3561-3	2478.9	8.8953	28.377	780	1.0291	-1.0011	1.6739	1.2258	957.0	1976	.660	1.3284	1.2830	979.1	1445	.717
2600	1.3292-3	2563.7	8.9282	28.359	790	1.0347	-1.0014	1.7168	1.2217	965.0	2085	.650	1.3305	1.2826	988.8	1466	.717
2650	1.3032-3	2650.7	8.9614	28.339	799	1.0412	-1.0017	1.7638	1.2175	972.9	2206	.639	1.3325	1.2824	998.5	1487	.716
2700	1.2780-3	2740.1	8.9948	28.315	809	1.0487	-1.0021	1.8152	1.2134	980.8	2342	.627	1.3344	1.2821	1008.2	1509	.716
2750	1.2536-3	2832.3	9.0286	28.288	819	1.0571	-1.0025	1.8712	1.2093	988.7	2494	.614	1.3362	1.2820	1017.9	1530	.715
2800	1.2298-3	2927.3	9.0629	28.256	828	1.0667	-1.0029	1.9322	1.2053	996.5	2664	.601	1.3380	1.2819	1027.7	1551	.715
2850	1.2067-3	3025.6	9.0976	28.220	838	1.0774	-1.0035	1.9982	1.2014	1004.4	2853	.587	1.3397	1.2819	1037.5	1573	.714
2900	1.1842-3	3127.2	9.1330	28.179	847	1.0895	-1.0041	2.0694	1.1977	1012.4	3061	.573	1.3414	1.2820	1047.3	1594	.713
2950	1.1622-3	3232.6	9.1690	28.133	857	1.1028	-1.0048	2.1460	1.1942	1020.4	3290	.559	1.3430	1.2821	1057.3	1616	.712
3000	1.1407-3	3341.9	9.2058	28.081	866	1.1175	-1.0057	2.2279	1.1909	1028.5	3540	.545	1.3446	1.2824	1067.3	1638	.711

TABLE 17.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO =0; CHEM. EQUIV. RATIO ■ 0.1045; P = 5066.25 KPA (50.00 ATM)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	1.9269-2	256.6	7.0611	28.461	398	1.0000	-1.0000	1.1535	1.3391	593.4	637 .721	1.1531	1.3393	593.4	637 .721
950	1.8255-2	314.6	7.1238	28.461	413	1.0000	-1.0000	1.1649	1.3347	608.6	667 .721	1.1641	1.3350	608.7	667 .721
1000	1.7342-2	373.1	7.1838	28.461	427	1.0000	-1.0000	1.1757	1.3306	623.5	697 .720	1.1745	1.3311	623.6	697 .720
1050	1.6517-2	432.1	7.2414	28.461	441	1.0000	-1.0000	1.1856	1.3269	638.0	726 .720	1.1838	1.3276	638.1	725 .720
1100	1.5766-2	491.7	7.2968	28.461	455	1.0000	-1.0000	1.1954	1.3234	652.1	755 .720	1.1927	1.3244	652.4	753 .720
1150	1.5080-2	551.7	7.3502	28.462	468	1.0000	-1.0000	1.2050	1.3200	665.9	783 .720	1.2012	1.3213	666.3	781 .720
1200	1.4452-2	612.2	7.4017	28.462	481	1.0000	-1.0000	1.2144	1.3167	679.4	811 .720	1.2094	1.3185	679.9	808 .720
1250	1.3874-2	673.1	7.4514	28.462	494	1.0000	-1.0000	1.2238	1.3135	692.6	839 .720	1.2171	1.3158	693.2	835 .720
1300	1.3340-2	734.5	7.4996	28.462	507	1.0000	-1.0000	1.2332	1.3104	705.4	867 .720	1.2245	1.3133	706.2	861 .720
1350	1.2846-2	796.4	7.5463	28.462	519	1.0000	-1.0000	1.2426	1.3073	718.0	895 .721	1.2316	1.3110	719.0	887 .720
1400	1.2388-2	858.8	7.5917	28.462	531	1.0000	-1.0000	1.2520	1.3043	730.4	923 .721	1.2383	1.3087	731.6	913 .721
1450	1.1960-2	921.6	7.6358	28.462	543	1.0000	-1.0000	1.2616	1.3013	742.4	951 .721	1.2447	1.3067	744.0	939 .721
1500	1.1562-2	985.0	7.6787	28.462	555	1.0000	-1.0000	1.2712	1.2984	754.3	980 .721	1.2508	1.3047	756.1	964 .721
1550	1.1189-2	1048.8	7.7206	28.462	567	1.0000	-1.0000	1.2810	1.2954	765.9	1008 .720	1.2566	1.3029	768.1	989 .720
1600	1.0839-2	1113.1	7.7614	28.462	579	1.0001	-1.0000	1.2909	1.2925	777.3	1038 .720	1.2621	1.3012	779.8	1015 .720
1650	1.0511-2	1177.9	7.8013	28.462	590	1.0001	-1.0000	1.3011	1.2896	788.4	1067 .720	1.2674	1.2995	791.4	1039 .720
1700	1.0201-2	1243.2	7.8403	28.461	602	1.0002	-1.0000	1.3115	1.2867	799.4	1097 .719	1.2724	1.2980	802.9	1064 .719
1750	9.9099-3	1309.0	7.8784	28.461	613	1.0003	-1.0000	1.3221	1.2838	810.1	1128 .719	1.2772	1.2966	814.2	1089 .719
1800	9.6345-3	1375.4	7.9158	28.461	624	1.0005	-1.0000	1.3331	1.2809	820.7	1159 .718	1.2817	1.2952	825.3	1113 .719
1850	9.3740-3	1442.3	7.9525	28.460	635	1.0006	-1.0000	1.3443	1.2780	831.1	1190 .717	1.2860	1.2939	836.3	1137 .718
1900	9.1271-3	1509.8	7.9885	28.460	646	1.0009	-1.0000	1.3560	1.2752	841.3	1222 .717	1.2901	1.2927	847.1	1160 .718
1950	8.8929-3	1577.9	8.0239	28.459	657	1.0012	-1.0001	1.3680	1.2723	851.4	1255 .716	1.2940	1.2916	857.8	1184 .718
2000	8.6703-3	1646.6	8.0587	28.458	667	1.0015	-1.0001	1.3806	1.2694	861.2	1289 .715	1.2977	1.2906	868.4	1207 .717
2050	8.4584-3	1716.0	8.0929	28.457	678	1.0020	-1.0001	1.3937	1.2664	870.9	1324 .714	1.3012	1.2896	878.9	1230 .717
2100	8.2566-3	1786.0	8.1267	28.455	688	1.0025	-1.0001	1.4074	1.2635	880.5	1359 .713	1.3046	1.2886	889.2	1252 .717
2150	8.0640-3	1856.8	8.1600	28.454	699	1.0032	-1.0001	1.4218	1.2606	889.9	1397 .712	1.3078	1.2877	899.5	1274 .717
2200	7.8801-3	1928.2	8.1928	28.451	709	1.0040	-1.0002	1.4369	1.2576	899.2	1435 .710	1.3108	1.2869	909.6	1296 .717
2250	7.7042-3	2000.5	8.2253	28.448	720	1.0049	-1.0002	1.4529	1.2546	908.3	1476 .708	1.3137	1.2861	919.6	1318 .717
2300	7.5359-3	2073.5	8.2574	28.445	730	1.0060	-1.0002	1.4699	1.2516	917.3	1519 .706	1.3164	1.2854	929.6	1339 .717
2350	7.3745-3	2147.5	8.2892	28.441	740	1.0074	-1.0003	1.4879	1.2486	926.2	1564 .704	1.3190	1.2847	939.5	1361 .717
2400	7.2196-3	2222.3	8.3207	28.436	750	1.0089	-1.0003	1.5071	1.2456	934.9	1613 .701	1.3215	1.2841	949.3	1382 .717
2450	7.0708-3	2298.2	8.3520	28.430	760	1.0108	-1.0004	1.5276	1.2425	943.5	1664 .698	1.3239	1.2835	959.0	1403 .717
2500	6.9277-3	2375.1	8.3831	28.423	770	1.0129	-1.0005	1.5494	1.2394	952.1	1720 .694	1.3262	1.2830	968.6	1423 .717
2550	6.7900-3	2453.2	8.4140	28.415	780	1.0154	-1.0006	1.5728	1.2364	960.5	1780 .689	1.3284	1.2825	978.2	1444 .717
2600	6.6573-3	2532.4	8.4448	28.406	790	1.0182	-1.0007	1.5979	1.2333	968.8	1845 .684	1.3304	1.2821	987.8	1465 .717
2650	6.5292-3	2613.0	8.4755	28.396	799	1.0214	-1.0009	1.6247	1.2302	977.0	1916 .678	1.3324	1.2817	997.2	1486 .717
2700	6.4055-3	2694.9	8.5061	28.383	809	1.0251	-1.0011	1.6534	1.2272	985.2	1993 .671	1.3343	1.2813	1006.7	1507 .717
2750	6.2859-3	2778.4	8.5367	28.369	819	1.0292	-1.0013	1.6841	1.2241	993.3	2077 .664	1.3362	1.2810	1016.1	1528 .716
2800	6.1702-3	2863.4	8.5674	28.353	828	1.0339	-1.0015	1.7169	1.2211	1001.3	2168 .656	1.3379	1.2807	1025.5	1548 .716
2850	6.0580-3	2950.1	8.5980	28.335	838	1.0392	-1.0018	1.7520	1.2182	1009.3	2268 .648	1.3396	1.2805	1034.8	1569 .715
2900	5.9492-3	3038.6	8.6288	28.314	848	1.0450	-1.0021	1.7894	1.2153	1017.3	2376 .638	1.3412	1.2803	1044.2	1590 .715
2950	5.8435-3	3129.1	8.6598	28.291	857	1.0515	-1.0024	1.8292	1.2125	1025.3	2494 .629	1.3428	1.2802	1053.5	1611 .715
3000	5.7409-3	3221.6	8.6909	28.265	866	1.0586	-1.0028	1.8715	1.2097	1033.2	2622 .618	1.3444	1.2801	1062.9	1632 .714

TABLE 17C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

WET AIR ONLY (W/A= 0.03); F/A = 0; EQUIV. RATIO = 0; CHEM. EQUIV. RATIO = 0.1045

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.818-5	-578.5	7.6060	28.461	1.0661	1.765-5	28.963	133	1.000	-1.000	1.0079	1.3982	283	183	.734	200
220	1.648-5	-553.8	7.7234	28.461	1.5977	1.603-5	28.937	144	1.000	-1.000	1.0075	1.3990	297	198	.731	220
240	1.474-5	-490.5	7.9962	28.461	6.2127	1.456-5	28.672	152	1.000	-1.000	1.0193	1.3976	312	211	.735	240
						PRESSURE = 0.10 ATM										
200	1.818-4	-578.7	6.9631	28.461	1.0283	1.765-4	28.965	133	1.000	-1.000	1.0079	1.3982	283	183	.734	200
220	1.652-4	-557.8	7.0628	28.461	1.0835	1.604-4	28.962	144	1.000	-1.000	1.0063	1.3992	297	199	.730	220
240	1.511-4	-533.1	7.1701	28.461	1.5234	1.469-4	28.936	155	1.000	-1.000	1.0064	1.3996	311	214	.727	240
260	1.371-4	-483.4	7.3675	28.461	4.1512	1.348-4	28.754	163	1.000	-1.000	1.0147	1.3985	324	228	.729	260
280	1.239-4	-413.8	7.6283	28.461	1.0293	1.239-4	28.461	171	1.000	-1.000	1.0293	1.3963	338	240	.734	280
						PRESSURE = 1.00 ATM										
200	1.818-3	-578.8	6.3212	28.461	1.0245	1.765-3	28.965	133	1.000	-1.000	1.0079	1.3982	283	183	.734	200
220	1.652-3	-558.2	6.4192	28.461	1.0324	1.604-3	28.965	144	1.000	-1.000	1.0062	1.3992	297	199	.730	220
240	1.514-3	-537.2	6.5104	28.461	1.0791	1.471-3	28.962	155	1.000	-1.000	1.0052	1.3998	311	215	.726	240
260	1.396-3	-513.8	6.6042	28.461	1.3348	1.357-3	28.944	165	1.000	-1.000	1.0055	1.4000	323	230	.724	260
280	1.286-3	-471.4	6.7603	28.461	2.1082	1.256-3	28.858	174	1.000	-1.000	1.0096	1.3993	336	243	.723	280
298	1.181-3	-418.9	6.9415	28.461	3.9646	1.170-3	28.624	181	1.000	-1.000	1.0216	1.3973	348	254	.728	298
300	1.170-3	-411.3	6.9670	28.461	4.2687	1.161-3	28.585	182	1.000	-1.000	1.0237	1.3969	349	255	.729	300
320	1.084-3	-372.6	7.0932	28.461	1.0309	1.084-3	28.461	190	1.000	-1.000	1.0309	1.3954	361	268	.731	320
						PRESSURE = 10.00 ATM										
200	1.817-2	-578.8	5.6795	28.461	1.0242	1.765-2	28.965	133	1.000	-1.000	1.0079	1.3982	283	183	.734	200
220	1.652-2	-558.3	5.7773	28.461	1.0272	1.604-2	28.965	144	1.000	-1.000	1.0062	1.3992	297	199	.730	220
240	1.514-2	-537.7	5.8669	28.461	1.0348	1.471-2	28.965	155	1.000	-1.000	1.0050	1.3998	311	215	.726	240
260	1.397-2	-516.7	5.9506	28.461	1.0638	1.358-2	28.963	165	1.000	-1.000	1.0046	1.4001	323	230	.723	260
280	1.297-2	-484.8	6.0686	28.461	1.1969	1.260-2	28.954	175	1.000	-1.000	1.0049	1.4001	336	244	.721	280
298	1.215-2	-461.7	6.1484	28.461	1.3680	1.183-2	28.931	184	1.000	-1.000	1.0064	1.3997	346	257	.720	298
300	1.207-2	-459.1	6.1569	28.461	1.3948	1.175-2	28.927	185	1.000	-1.000	1.0067	1.3996	347	258	.720	300
320	1.124-2	-427.2	6.2597	28.461	1.8552	1.099-2	28.852	193	1.000	-1.000	1.0113	1.3985	359	271	.722	320
340	1.041-2	-381.7	6.3975	28.461	2.8081	1.028-2	28.674	201	1.000	-1.000	1.0216	1.3963	371	283	.726	340
360	9.635-3	-331.3	6.5421	28.461	1.0343	9.635-3	28.461	208	1.000	-1.000	1.0343	1.3936	383	294	.731	360
380	9.128-3	-310.6	6.5981	28.461	1.0366	9.128-3	28.461	217	1.000	-1.000	1.0366	1.3924	393	308	.730	380
						PRESSURE = 50.00 ATM										
200	9.063-2	-578.8	5.2310	28.461	1.0241	8.825-2	28.965	133	1.000	-1.000	1.0079	1.3982	283	183	.734	200
220	8.241-2	-558.3	5.3287	28.461	1.0268	8.022-2	28.965	144	1.000	-1.000	1.0062	1.3992	297	199	.730	220
240	7.556-2	-537.7	5.4182	28.461	1.0309	7.354-2	28.965	155	1.000	-1.000	1.0050	1.3998	311	215	.726	240
260	6.976-2	-517.0	5.5010	28.461	1.0398	6.788-2	28.965	165	1.000	-1.000	1.0045	1.4001	323	230	.723	260
280	6.479-2	-485.9	5.6157	28.461	1.1174	6.303-2	28.963	175	1.000	-1.000	1.0045	1.4001	335	245	.721	280
298	6.083-2	-465.4	5.6868	28.461	1.1512	5.918-2	28.958	184	1.000	-1.000	1.0051	1.3999	346	257	.719	298
300	6.045-2	-463.2	5.6939	28.461	1.1565	5.882-2	28.957	185	1.000	-1.000	1.0052	1.3998	347	259	.719	300
320	5.660-2	-439.3	5.7711	28.461	1.2470	5.511-2	28.942	194	1.000	-1.000	1.0068	1.3992	359	272	.719	320
340	5.311-2	-412.8	5.8515	28.461	1.4267	5.181-2	28.907	203	1.000	-1.000	1.0099	1.3982	370	285	.720	340
360	4.983-2	-381.3	5.9413	28.461	1.7465	4.880-2	28.833	211	1.000	-1.000	1.0154	1.3966	381	297	.722	360
380	4.662-2	-341.5	6.0487	28.461	2.2728	4.601-2	28.693	219	1.000	-1.000	1.0247	1.3943	392	309	.725	380
400	4.336-2	-289.9	6.1812	28.461	1.0392	4.336-2	28.461	225	1.000	-1.000	1.0392	1.3910	403	321	.730	400
420	4.129-2	-269.0	6.2319	28.461	1.0421	4.129-2	28.461	234	1.000	-1.000	1.0421	1.3895	413	334	.729	420

TABLE 18A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.016906; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.5175;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03484; H2O= .07470; N2= .73397; O2= .14768; AR= .00880

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7377-3	8.6883-2	-1216.2	7.9730	7.3016	6.6303	5.9590	5.4898	1.0385	1.3903	284.7	124	169	.7612	200
210	1.6549-3	8.2746-2	-1205.8	8.0236	7.3523	6.6810	6.0097	5.5404	1.0383	1.3904	291.8	130	178	.7580	210
220	1.5797-3	7.8985-2	-1195.4	8.0719	7.4006	6.7293	6.0580	5.5887	1.0382	1.3905	298.6	135	186	.7550	220
230	1.5110-3	7.5551-2	-1185.1	8.1181	7.4468	6.7754	6.1041	5.6349	1.0382	1.3905	305.4	141	194	.7522	230
240	1.4481-3	7.2403-2	-1174.7	8.1623	7.4909	6.8196	6.1483	5.6790	1.0384	1.3904	311.9	146	202	.7497	240
250	1.3901-3	6.9507-2	-1164.3	8.2047	7.5333	6.8620	6.1907	5.7214	1.0386	1.3903	318.3	151	210	.7475	250
260	1.3367-3	6.6833-2	-1153.9	8.2454	7.5741	6.9028	6.2314	5.7622	1.0390	1.3900	324.6	157	218	.7456	260
270	1.2872-3	6.4358-2	-1143.5	8.2846	7.6133	6.9420	6.2706	5.8014	1.0396	1.3898	330.8	162	226	.7440	270
280	1.2412-3	6.2060-2	-1133.1	8.3225	7.6511	6.9798	6.3085	5.8392	1.0402	1.3894	336.8	167	233	.7427	280
290	1.1984-3	5.9920-2	-1122.7	8.3590	7.6876	7.0163	6.3450	5.8757	1.0409	1.3891	342.7	172	241	.7416	290
298	1.1656-3	5.8282-2	-1114.2	8.3878	7.7165	7.0452	6.3738	5.9046	1.0416	1.3887	347.4	176	247	.7410	298
300	1.1584-3	5.7922-2	-1112.3	8.3943	7.7229	7.0516	6.3803	5.9110	1.0418	1.3886	348.5	177	248	.7409	300
310	1.1211-3	5.6054-2	-1101.9	8.4284	7.7571	7.0858	6.4145	5.9452	1.0427	1.3881	354.2	181	255	.7407	310
320	1.0860-3	5.4302-2	-1091.4	8.4616	7.7902	7.1189	6.4476	5.9783	1.0438	1.3876	359.8	186	262	.7406	320
330	1.0531-3	5.2657-2	-1081.0	8.4937	7.8224	7.1510	6.4797	6.0105	1.0449	1.3870	365.3	191	269	.7407	330
340	1.0222-3	5.1108-2	-1070.5	8.5249	7.8536	7.1823	6.5109	6.0417	1.0461	1.3864	370.7	195	276	.7407	340
350	9.9295-4	4.9648-2	-1060.1	8.5553	7.8839	7.2126	6.5413	6.0720	1.0474	1.3857	376.0	200	283	.7407	350
360	9.6537-4	4.8269-2	-1049.6	8.5848	7.9135	7.2421	6.5708	6.1016	1.0488	1.3850	381.3	204	290	.7403	360
370	9.3928-4	4.6964-2	-1039.1	8.6135	7.9422	7.2709	6.5996	6.1303	1.0503	1.3842	386.4	209	296	.7399	370
380	9.1456-4	4.5728-2	-1028.6	8.6416	7.9702	7.2989	6.6276	6.1583	1.0519	1.3835	391.5	213	303	.7394	380
390	8.9111-4	4.4556-2	-1018.1	8.6689	7.9976	7.3263	6.6549	6.1857	1.0535	1.3826	396.5	218	310	.7389	390
400	8.6883-4	4.3442-2	-1007.5	8.6956	8.0243	7.3530	6.6816	6.2124	1.0552	1.3818	401.4	222	317	.7383	400
410	8.4764-4	4.2382-2	-997.0	8.7217	8.0504	7.3790	6.7077	6.2385	1.0570	1.3809	406.3	226	324	.7380	410
420	8.2746-4	4.1373-2	-986.4	8.7472	8.0759	7.4045	6.7332	6.2640	1.0589	1.3800	411.1	230	331	.7377	420
430	8.0822-4	4.0411-2	-975.8	8.7721	8.1008	7.4295	6.7581	6.2889	1.0608	1.3790	415.8	234	337	.7375	430
440	7.8985-4	3.9492-2	-965.2	8.7965	8.1252	7.4539	6.7825	6.3133	1.0628	1.3780	420.5	239	344	.7373	440
450	7.7230-4	3.8615-2	-954.5	8.8204	8.1491	7.4778	6.8064	6.3372	1.0648	1.3771	425.1	243	350	.7372	450
460	7.5551-4	3.7775-2	-943.9	8.8439	8.1725	7.5012	6.8299	6.3606	1.0669	1.3760	429.6	247	357	.7371	460
470	7.3943-4	3.6972-2	-933.2	8.8668	8.1955	7.5242	6.8528	6.3836	1.0690	1.3750	434.1	251	363	.7370	470
480	7.2403-4	3.6201-2	-922.5	8.8894	8.2180	7.5467	6.8754	6.4061	1.0712	1.3739	438.5	254	370	.7370	480
490	7.0925-4	3.5463-2	-911.8	8.9115	8.2401	7.5688	6.8975	6.4282	1.0735	1.3729	442.9	258	376	.7370	490
500	6.9507-4	3.4753-2	-901.0	8.9332	8.2619	7.5905	6.9192	6.4500	1.0758	1.3718	447.2	262	383	.7370	500
510	6.8144-4	3.4072-2	-890.2	8.9545	8.2832	7.6118	6.9405	6.4713	1.0781	1.3707	451.5	266	389	.7369	510
520	6.6833-4	3.3417-2	-879.5	8.9755	8.3041	7.6328	6.9615	6.4922	1.0805	1.3696	455.7	270	396	.7368	520
530	6.5572-4	3.2786-2	-868.6	8.9961	8.3247	7.6534	6.9821	6.5128	1.0829	1.3684	459.8	274	402	.7366	530
540	6.4358-4	3.2179-2	-857.8	9.0163	8.3450	7.6737	7.0023	6.5331	1.0853	1.3673	464.0	277	409	.7365	540
550	6.3188-4	3.1594-2	-846.9	9.0363	8.3649	7.6936	7.0223	6.5530	1.0878	1.3662	468.1	281	415	.7363	550
560	6.2060-4	3.1030-2	-836.0	9.0559	8.3846	7.7132	7.0419	6.5727	1.0903	1.3650	472.1	285	422	.7362	560
570	6.0971-4	3.0485-2	-825.1	9.0752	8.4039	7.7326	7.0612	6.5920	1.0928	1.3639	476.1	288	428	.7360	570
580	5.9920-4	2.9960-2	-814.2	9.0942	8.4229	7.7516	7.0803	6.6110	1.0954	1.3627	480.0	292	435	.7358	580
590	5.8904-4	2.9452-2	-803.2	9.1130	8.4417	7.7703	7.0990	6.6298	1.0980	1.3615	483.9	296	441	.7356	590

TABLE 18A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.016906; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.5175;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03484; H2O= .07470; N2= .73397; O2= .14768; AR= .00880

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.7922-4	2.8961-2	-792.2	9.1315	8.4601	7.7888	7.1175	6.6482	1.1006	1.3604	487.8	299	448	.7354	600
610	5.6973-4	2.8486-2	-781.2	9.1497	8.4783	7.8070	7.1357	6.6664	1.1032	1.3592	491.7	303	454	.7351	610
620	5.6054-4	2.8027-2	-770.2	9.1676	8.4963	7.8250	7.1536	6.6844	1.1059	1.3580	495.5	306	461	.7348	620
630	5.5164-4	2.7582-2	-759.1	9.1854	8.5140	7.8427	7.1714	6.7021	1.1085	1.3569	499.2	310	468	.7345	630
640	5.4302-4	2.7151-2	-748.0	9.2028	8.5315	7.8602	7.1888	6.7196	1.1112	1.3557	503.0	313	474	.7342	640
650	5.3467-4	2.6733-2	-736.9	9.2201	8.5487	7.8774	7.2061	6.7369	1.1139	1.3545	506.7	317	481	.7339	650
660	5.2657-4	2.6328-2	-725.7	9.2371	8.5658	7.8944	7.2231	6.7539	1.1166	1.3534	510.3	320	487	.7336	660
670	5.1871-4	2.5935-2	-714.5	9.2539	8.5826	7.9113	7.2399	6.7707	1.1193	1.3522	514.0	324	494	.7333	670
680	5.1108-4	2.5554-2	-703.3	9.2705	8.5992	7.9279	7.2565	6.7873	1.1220	1.3511	517.6	327	501	.7330	680
690	5.0367-4	2.5184-2	-692.1	9.2869	8.6156	7.9443	7.2729	6.8037	1.1247	1.3499	521.1	330	507	.7327	690
700	4.9648-4	2.4824-2	-680.8	9.3031	8.6318	7.9605	7.2891	6.8199	1.1274	1.3488	524.7	334	514	.7324	700
710	4.8948-4	2.4474-2	-669.5	9.3191	8.6478	7.9765	7.3051	6.8359	1.1302	1.3477	528.2	337	520	.7321	710
720	4.8269-4	2.4134-2	-658.2	9.3350	8.6636	7.9923	7.3210	6.8517	1.1329	1.3465	531.7	340	527	.7318	720
730	4.7607-4	2.3804-2	-646.9	9.3506	8.6793	8.0079	7.3366	6.8674	1.1356	1.3454	535.1	344	534	.7315	730
740	4.6964-4	2.3482-2	-635.5	9.3661	8.6947	8.0234	7.3521	6.8828	1.1383	1.3443	538.6	347	540	.7312	740
750	4.6338-4	2.3169-2	-624.1	9.3814	8.7100	8.0387	7.3674	6.8981	1.1410	1.3432	542.0	350	547	.7309	750
760	4.5728-4	2.2864-2	-612.7	9.3965	8.7252	8.0538	7.3825	6.9133	1.1437	1.3421	545.3	354	553	.7306	760
770	4.5134-4	2.2567-2	-601.2	9.4115	8.7401	8.0688	7.3975	6.9282	1.1464	1.3411	548.7	357	560	.7304	770
780	4.4556-4	2.2278-2	-589.8	9.4263	8.7550	8.0836	7.4123	6.9431	1.1491	1.3400	552.0	360	567	.7301	780
790	4.3992-4	2.1996-2	-578.3	9.4409	8.7696	8.0983	7.4269	6.9577	1.1517	1.3389	555.3	363	573	.7298	790
800	4.3442-4	2.1721-2	-566.7	9.4554	8.7841	8.1128	7.4415	6.9722	1.1544	1.3379	558.6	366	580	.7296	800
810	4.2905-4	2.1453-2	-555.2	9.4698	8.7985	8.1271	7.4558	6.9866	1.1570	1.3369	561.9	370	586	.7293	810
820	4.2382-4	2.1191-2	-543.6	9.4840	8.8127	8.1413	7.4700	7.0008	1.1596	1.3359	565.1	373	593	.7291	820
830	4.1871-4	2.0936-2	-532.0	9.4981	8.8268	8.1554	7.4841	7.0149	1.1623	1.3349	568.3	376	599	.7289	830
840	4.1373-4	2.0687-2	-520.3	9.5120	8.8407	8.1694	7.4980	7.0288	1.1648	1.3339	571.6	379	606	.7287	840
850	4.0886-4	2.0443-2	-508.7	9.5258	8.8545	8.1832	7.5118	7.0426	1.1674	1.3329	574.7	382	612	.7285	850
860	4.0411-4	2.0205-2	-497.0	9.5395	8.8682	8.1968	7.5255	7.0563	1.1700	1.3319	577.9	385	619	.7283	860
870	3.9946-4	1.9973-2	-485.3	9.5530	8.8817	8.2104	7.5390	7.0698	1.1725	1.3310	581.0	388	625	.7281	870
880	3.9492-4	1.9746-2	-473.5	9.5664	8.8951	8.2238	7.5525	7.0832	1.1750	1.3300	584.2	391	632	.7279	880
890	3.9049-4	1.9524-2	-461.8	9.5797	8.9084	8.2371	7.5657	7.0965	1.1775	1.3291	587.3	394	638	.7277	890
900	3.8615-4	1.9307-2	-450.0	9.5929	8.9216	8.2502	7.5789	7.1097	1.1799	1.3282	590.4	397	644	.7276	900
910	3.8190-4	1.9095-2	-438.2	9.6060	8.9346	8.2633	7.5920	7.1227	1.1824	1.3273	593.4	400	651	.7274	910
920	3.7775-4	1.8888-2	-426.3	9.6189	8.9476	8.2762	7.6049	7.1357	1.1848	1.3264	596.5	403	657	.7272	920
930	3.7369-4	1.8685-2	-414.5	9.6317	8.9604	8.2891	7.6177	7.1485	1.1872	1.3255	599.5	406	663	.7271	930
940	3.6972-4	1.8486-2	-402.6	9.6444	8.9731	8.3018	7.6304	7.1612	1.1895	1.3247	602.5	409	670	.7269	940
950	3.6582-4	1.8291-2	-390.7	9.6570	8.9857	8.3144	7.6430	7.1738	1.1918	1.3238	605.5	412	676	.7268	950
960	3.6201-4	1.8101-2	-378.8	9.6695	8.9982	8.3269	7.6555	7.1863	1.1941	1.3230	608.5	415	682	.7266	960
970	3.5828-4	1.7914-2	-366.8	9.6819	9.0106	8.3392	7.6679	7.1987	1.1964	1.3222	611.5	418	688	.7265	970
980	3.5463-4	1.7731-2	-354.8	9.6942	9.0228	8.3515	7.6802	7.2110	1.1986	1.3214	614.5	421	695	.7263	980
990	3.5104-4	1.7552-2	-342.8	9.7064	9.0350	8.3637	7.6924	7.2231	1.2008	1.3206	617.4	424	701	.7262	990

TABLE I8A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.016906; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.5175;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03484; H2O= .07470; N2= .73397; O2= .14768; AR= .00880

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4753-4	1.7377-2	-330.8	9.7184	9.0471	8.3758	7.7045	7.2352	1.2030	1.3199	620.3	427	707	.7260	1000
1050	3.3098-4	1.6549-2	-270.4	9.7774	9.1061	8.4347	7.7634	7.2942	1.2132	1.3163	634.8	441	737	.7257	1050
1100	3.1594-4	1.5797-2	-209.5	9.8340	9.1627	8.4914	7.8201	7.3508	1.2229	1.3130	648.9	455	767	.7254	1100
1150	3.0220-4	1.5110-2	-148.1	9.8886	9.2173	8.5460	7.8746	7.4054	1.2322	1.3100	662.7	468	796	.7252	1150
1200	2.8961-4	1.4481-2	-86.3	9.9412	9.2699	8.5986	7.9273	7.4580	1.2411	1.3071	676.2	482	824	.7251	1200
1250	2.7803-4	1.3901-2	-24.0	9.9921	9.3208	8.6494	7.9781	7.5089	1.2495	1.3044	689.5	495	853	.7250	1250
1300	2.6733-4	1.3367-2	38.6	10.0412	9.3699	8.6986	8.0273	7.5580	1.2575	1.3018	702.4	508	881	.7248	1300
1350	2.5743-4	1.2872-2	101.7	10.0888	9.4175	8.7462	8.0749	7.6056	1.2652	1.2994	715.2	520	908	.7247	1350
1400	2.4824-4	1.2412-2	165.2	10.1350	9.4637	8.7923	8.1210	7.6518	1.2725	1.2972	727.7	533	936	.7246	1400
1450	2.3968-4	1.1984-2	229.0	10.1798	9.5084	8.8371	8.1658	7.6965	1.2795	1.2951	739.9	545	963	.7244	1450
1500	2.3169-4	1.1584-2	293.1	10.2233	9.5519	8.8806	8.2093	7.7400	1.2861	1.2932	752.0	557	990	.7242	1500
1550	2.2422-4	1.1211-2	357.6	10.2655	9.5942	8.9229	8.2515	7.7823	1.2924	1.2913	763.9	569	1016	.7238	1550
1600	2.1721-4	1.0860-2	422.3	10.3067	9.6353	8.9640	8.2927	7.8234	1.2984	1.2896	775.6	581	1043	.7233	1600
1650	2.1063-4	1.0531-2	487.4	10.3467	9.6754	9.0040	8.3327	7.8635	1.3041	1.2879	787.1	593	1070	.7228	1650
1700	2.0443-4	1.0222-2	552.7	10.3857	9.7144	9.0431	8.3717	7.9025	1.3095	1.2864	798.5	604	1096	.7224	1700
1750	1.9859-4	9.9295-3	618.3	10.4237	9.7524	9.0811	8.4098	7.9405	1.3146	1.2850	809.7	616	1122	.7219	1750
1800	1.9307-4	9.6537-3	684.2	10.4609	9.7895	9.1182	8.4469	7.9776	1.3195	1.2836	820.8	627	1147	.7214	1800
1850	1.8786-4	9.3928-3	750.3	10.4971	9.8257	9.1544	8.4831	8.0138	1.3242	1.2823	831.7	638	1173	.7209	1850
1900	1.8291-4	9.1456-3	816.6	10.5324	9.8611	9.1898	8.5185	8.0492	1.3286	1.2811	842.4	649	1198	.7204	1900
1950	1.7822-4	8.9111-3	883.1	10.5670	9.8957	9.2243	8.5530	8.0838	1.3328	1.2800	853.1	660	1223	.7199	1950
2000	1.7377-4	8.6883-3	949.9	10.6008	9.9295	9.2581	8.5868	8.1176	1.3368	1.2789	863.6	671	1248	.7194	2000
2050	1.6953-4	8.4764-3	1016.8	10.6339	9.9625	9.2912	8.6199	8.1506	1.3406	1.2779	874.0	682	1272	.7191	2050
2100	1.6549-4	8.2746-3	1083.9	10.6662	9.9949	9.3235	8.6522	8.1830	1.3442	1.2770	884.2	693	1296	.7189	2100
2150	1.6164-4	8.0822-3	1151.2	10.6979	10.0265	9.3552	8.6839	8.2147	1.3477	1.2761	894.4	703	1319	.7186	2150
2200	1.5797-4	7.8985-3	1218.7	10.7289	10.0576	9.3862	8.7149	8.2457	1.3509	1.2752	904.4	714	1343	.7184	2200
2250	1.5446-4	7.7230-3	1286.3	10.7593	10.0880	9.4166	8.7453	8.2761	1.3540	1.2744	914.3	724	1366	.7181	2250
2300	1.5110-4	7.5551-3	1354.1	10.7891	10.1178	9.4464	8.7751	8.3059	1.3570	1.2736	924.2	735	1389	.7179	2300
2350	1.4789-4	7.3943-3	1422.0	10.8183	10.1470	9.4756	8.8043	8.3351	1.3598	1.2729	933.9	745	1411	.7177	2350
2400	1.4481-4	7.2403-3	1490.1	10.8470	10.1756	9.5043	8.8330	8.3637	1.3625	1.2722	943.5	755	1434	.7175	2400
2450	1.4185-4	7.0925-3	1558.3	10.8751	10.2037	9.5324	8.8611	8.3919	1.3651	1.2716	953.0	765	1456	.7173	2450
2500	1.3901-4	6.9507-3	1626.6	10.9027	10.2314	9.5600	8.8887	8.4195	1.3676	1.2710	962.5	775	1478	.7171	2500
2550	1.3629-4	6.8144-3	1695.0	10.9298	10.2585	9.5871	8.9158	8.4466	1.3699	1.2704	971.8	785	1501	.7167	2550
2600	1.3367-4	6.6833-3	1763.6	10.9564	10.2851	9.6138	8.9424	8.4732	1.3722	1.2698	981.1	795	1523	.7163	2600
2650	1.3114-4	6.5572-3	1832.3	10.9826	10.3112	9.6399	8.9686	8.4993	1.3744	1.2693	990.3	805	1545	.7158	2650
2700	1.2872-4	6.4358-3	1901.0	11.0083	10.3369	9.6656	8.9943	8.5251	1.3765	1.2687	999.4	814	1567	.7154	2700
2750	1.2638-4	6.3188-3	1969.9	11.0336	10.3622	9.6909	9.0196	8.5503	1.3785	1.2682	1008.4	824	1589	.7150	2750
2800	1.2412-4	6.2060-3	2038.9	11.0584	10.3871	9.7158	9.0444	8.5752	1.3804	1.2678	1017.3	834	1610	.7146	2800
2850	1.2194-4	6.0971-3	2107.9	11.0829	10.4115	9.7402	9.0689	8.5996	1.3823	1.2673	1026.2	843	1632	.7142	2850
2900	1.1984-4	5.9920-3	2177.1	11.1069	10.4356	9.7643	9.0929	8.6237	1.3841	1.2669	1035.0	853	1653	.7138	2900
2950	1.1781-4	5.8904-3	2246.3	11.1306	10.4593	9.7879	9.1166	8.6474	1.3859	1.2664	1043.7	862	1675	.7134	2950
3000	1.1584-4	5.7922-3	2315.7	11.1539	10.4826	9.8112	9.1399	8.6707	1.3876	1.2660	1052.3	871	1696	.7130	3000

TABLE 18.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.016906; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8615-6	-450.0	9.5929	28.517	397	1.0000	-1.0000	1.1803	1.3281	590.3	644	.728	1.1799	1.3282	590.4	644	.728
950	3.6582-6	-390.6	9.6571	28.517	412	1.0000	-1.0000	1.1925	1.3236	605.5	676	.727	1.1918	1.3238	605.5	676	.727
1000	3.4753-6	-330.7	9.7185	28.517	427	1.0000	-1.0000	1.2040	1.3195	620.3	708	.726	1.2030	1.3199	620.3	707	.726
1050	3.3098-6	-270.3	9.7775	28.517	441	1.0000	-1.0000	1.2148	1.3158	634.7	738	.726	1.2132	1.3163	634.8	737	.726
1100	3.1594-6	-209.3	9.8343	28.517	455	1.0000	-1.0000	1.2253	1.3123	648.7	768	.725	1.2229	1.3130	648.9	767	.725
1150	3.0220-6	-147.7	9.8890	28.517	468	1.0000	-1.0000	1.2356	1.3088	662.5	798	.725	1.2322	1.3100	662.7	796	.725
1200	2.8961-6	-85.7	9.9418	28.517	482	1.0000	-1.0000	1.2459	1.3055	675.8	828	.725	1.2411	1.3071	676.2	824	.725
1250	2.7803-6	-23.2	9.9929	28.517	495	1.0001	-1.0000	1.2562	1.3023	688.9	857	.725	1.2495	1.3044	689.5	853	.725
1300	2.6733-6	39.9	10.0423	28.517	508	1.0001	-1.0000	1.2666	1.2991	701.7	887	.725	1.2575	1.3018	702.4	881	.725
1350	2.5743-6	103.5	10.0903	28.517	520	1.0002	-1.0000	1.2775	1.2959	714.2	918	.724	1.2652	1.2994	715.2	908	.725
1400	2.4823-6	167.7	10.1370	28.517	533	1.0003	-1.0000	1.2890	1.2926	726.4	949	.724	1.2725	1.2972	727.7	936	.725
1450	2.3967-6	232.4	10.1825	28.516	545	1.0006	-1.0000	1.3015	1.2891	738.2	981	.723	1.2795	1.2951	740.0	963	.724
1500	2.3167-6	297.9	10.2268	28.516	557	1.0009	-1.0000	1.3154	1.2854	749.8	1015	.722	1.2861	1.2932	752.1	990	.724
1550	2.2419-6	364.0	10.2702	28.515	569	1.0014	-1.0000	1.3315	1.2814	761.0	1052	.720	1.2924	1.2913	764.0	1016	.724
1600	2.1717-6	431.0	10.3128	28.513	581	1.0022	-1.0001	1.3505	1.2769	771.8	1094	.718	1.2984	1.2896	775.7	1043	.723
1650	2.1057-6	499.1	10.3547	28.511	593	1.0035	-1.0001	1.3738	1.2717	782.3	1141	.714	1.3041	1.2880	787.3	1070	.723
1700	2.0436-6	568.5	10.3961	28.507	604	1.0053	-1.0001	1.4030	1.2658	792.2	1197	.708	1.3095	1.2866	798.7	1096	.722
1750	1.9848-6	639.6	10.4373	28.501	616	1.0080	-1.0002	1.4402	1.2588	801.6	1267	.700	1.3146	1.2852	810.0	1122	.722
1800	1.9291-6	712.7	10.4785	28.494	627	1.0118	-1.0003	1.4884	1.2506	810.5	1354	.689	1.3195	1.2839	821.2	1148	.721
1850	1.8762-6	788.6	10.5201	28.482	638	1.0173	-1.0005	1.5511	1.2412	818.7	1468	.674	1.3242	1.2828	832.3	1173	.720
1900	1.8259-6	868.2	10.5625	28.466	649	1.0251	-1.0007	1.6329	1.2304	826.3	1620	.655	1.3286	1.2818	843.4	1199	.720
1950	1.7776-6	952.3	10.6062	28.444	660	1.0358	-1.0011	1.7394	1.2184	833.4	1822	.631	1.3328	1.2809	854.5	1224	.719
2000	1.7313-6	1042.6	10.6519	28.413	671	1.0505	-1.0016	1.8770	1.2055	840.0	2092	.602	1.3367	1.2803	865.6	1249	.718
2050	1.6866-6	1140.7	10.7003	28.371	682	1.0702	-1.0022	2.0531	1.1922	846.3	2453	.571	1.3405	1.2798	876.8	1274	.717
2100	1.6432-6	1248.7	10.7524	28.315	692	1.0961	-1.0032	2.2754	1.1791	852.7	2929	.538	1.3441	1.2795	888.3	1299	.716
2150	1.6007-6	1369.1	10.8090	28.241	702	1.1295	-1.0044	2.5515	1.1666	859.3	3548	.505	1.3475	1.2796	900.0	1325	.714
2200	1.5590-6	1504.9	10.8714	28.144	712	1.1716	-1.0060	2.8883	1.1553	866.5	4336	.475	1.3507	1.2799	912.1	1351	.712
2250	1.5176-6	1659.0	10.9407	28.019	722	1.2235	-1.0080	3.2907	1.1454	874.5	5311	.448	1.3538	1.2807	924.7	1378	.710
2300	1.4764-6	1835.1	11.0181	27.864	732	1.2860	-1.0106	3.7611	1.1371	883.4	6481	.425	1.3569	1.2819	938.0	1406	.706
2350	1.4350-6	2036.3	11.1046	27.672	741	1.3592	-1.0137	4.2986	1.1305	893.4	7834	.407	1.3598	1.2836	952.0	1436	.702
2400	1.3933-6	2265.9	11.2013	27.440	751	1.4426	-1.0174	4.8979	1.1253	904.6	9331	.394	1.3628	1.2859	967.0	1469	.696
2450	1.3512-6	2526.9	11.3089	27.165	760	1.5347	-1.0215	5.5477	1.1216	917.1	10902	.387	1.3658	1.2888	983.1	1505	.690
2500	1.3087-6	2821.2	11.4278	26.847	769	1.6326	-1.0262	6.2284	1.1190	930.8	12446	.385	1.3688	1.2924	1000.3	1544	.682
2550	1.2658-6	3149.8	11.5579	26.487	778	1.7317	-1.0311	6.9095	1.1175	945.8	13843	.388	1.3720	1.2967	1018.8	1587	.672
2600	1.2228-6	3511.5	11.6983	26.089	787	1.8256	-1.0360	7.5481	1.1170	962.1	14964	.397	1.3754	1.3016	1038.5	1633	.662
2650	1.1801-6	3903.0	11.8475	25.661	795	1.9062	-1.0404	8.0911	1.1174	979.5	15697	.410	1.3788	1.3072	1059.4	1683	.652
2700	1.1381-6	4318.1	12.0026	25.216	804	1.9652	-1.0441	8.4825	1.1186	997.9	15970	.427	1.3824	1.3132	1081.3	1735	.641
2750	1.0975-6	4747.9	12.1604	24.765	813	1.9962	-1.0465	8.6760	1.1207	1017.2	15771	.447	1.3860	1.3197	1103.8	1787	.631
2800	1.0586-6	5181.9	12.3168	24.323	823	1.9956	-1.0475	8.6469	1.1235	1037.0	15145	.470	1.3896	1.3262	1126.7	1839	.622
2850	1.0221-6	5608.9	12.4679	23.904	832	1.9644	-1.0470	8.3985	1.1272	1057.1	14186	.493	1.3931	1.3328	1149.4	1890	.613
2900	9.8826-7	6018.6	12.6105	23.517	842	1.9070	-1.0450	7.9600	1.1318	1077.2	13004	.515	1.3963	1.3390	1171.7	1938	.607
2950	9.5717-7	6402.5	12.7417	23.170	852	1.8298	-1.0420	7.3772	1.1374	1097.3	11709	.536	1.3994	1.3449	1193.2	1983	.601
3000	9.2887-7	6754.8	12.8602	22.866	861	1.7402	-1.0382	6.7036	1.1442	1117.2	10394	.556	1.4022	1.3501	1213.6	2025	.596

TABLE 18.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.016906; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP J/G K	(GAM)S	VS M/S	COND MICRO W/CM K	PRAN	CP J/G K	GAM	VS M/S	COND MICRO W/CM K	PRAN
K	G/CM3	J/G	J/G K														
900	3.8615-5	-450.0	8.9216	28.517	397	1.0000	-1.0000	1.1803	1.3281	590.3	644	.728	1.1799	1.3282	590.4	644	.728
950	3.6582-5	-390.6	8.9857	28.517	412	1.0000	-1.0000	1.1925	1.3236	605.5	676	.727	1.1918	1.3238	605.5	676	.727
1000	3.4753-5	-330.7	9.0472	28.517	427	1.0000	-1.0000	1.2040	1.3195	620.3	708	.726	1.2030	1.3199	620.3	707	.726
1050	3.3098-5	-270.3	9.1062	28.517	441	1.0000	-1.0000	1.2147	1.3158	634.7	738	.726	1.2132	1.3163	634.8	737	.726
1100	3.1594-5	-209.3	9.1630	28.517	455	1.0000	-1.0000	1.2252	1.3123	648.7	768	.725	1.2229	1.3130	648.9	767	.725
1150	3.0220-5	-147.7	9.2177	28.517	468	1.0000	-1.0000	1.2355	1.3089	662.5	798	.725	1.2322	1.3100	662.7	796	.725
1200	2.8961-5	-85.7	9.2705	28.517	482	1.0000	-1.0000	1.2456	1.3056	675.9	827	.725	1.2411	1.3071	676.2	824	.725
1250	2.7803-5	-23.2	9.3215	28.517	495	1.0000	-1.0000	1.2557	1.3024	689.0	857	.725	1.2495	1.3044	689.5	853	.725
1300	2.6733-5	39.8	9.3709	28.517	508	1.0001	-1.0000	1.2658	1.2993	701.8	886	.725	1.2575	1.3018	702.4	881	.725
1350	2.5743-5	103.4	9.4189	28.517	520	1.0001	-1.0000	1.2760	1.2962	714.3	916	.725	1.2652	1.2994	715.2	908	.725
1400	2.4823-5	167.5	9.4655	28.517	533	1.0002	-1.0000	1.2865	1.2932	726.5	946	.724	1.2725	1.2972	727.7	936	.725
1450	2.3967-5	232.0	9.5108	28.517	545	1.0003	-1.0000	1.2974	1.2901	738.5	977	.724	1.2795	1.2951	740.0	963	.724
1500	2.3168-5	297.2	9.5550	28.517	557	1.0004	-1.0000	1.3090	1.2869	750.2	1008	.723	1.2861	1.2932	752.0	990	.724
1550	2.2420-5	363.0	9.5981	28.516	569	1.0007	-1.0000	1.3215	1.2836	761.6	1041	.722	1.2924	1.2913	763.9	1016	.724
1600	2.1719-5	429.4	9.6403	28.515	581	1.0010	-1.0000	1.3351	1.2801	772.8	1076	.721	1.2984	1.2896	775.6	1043	.723
1650	2.1060-5	496.5	9.6816	28.514	593	1.0016	-1.0000	1.3505	1.2764	783.7	1113	.719	1.3041	1.2880	787.2	1070	.723
1700	2.0440-5	564.5	9.7222	28.513	604	1.0023	-1.0001	1.3680	1.2724	794.2	1153	.717	1.3095	1.2865	798.6	1096	.722
1750	1.9854-5	633.4	9.7621	28.510	616	1.0034	-1.0001	1.3885	1.2680	804.4	1198	.714	1.3146	1.2851	809.8	1122	.722
1800	1.9300-5	703.4	9.8016	28.507	627	1.0048	-1.0001	1.4128	1.2631	814.3	1248	.710	1.3195	1.2838	821.0	1147	.721
1850	1.8776-5	774.7	9.8407	28.502	638	1.0069	-1.0002	1.4422	1.2577	823.8	1307	.705	1.3242	1.2825	831.9	1173	.721
1900	1.8278-5	847.7	9.8796	28.496	650	1.0097	-1.0003	1.4780	1.2515	833.0	1376	.698	1.3286	1.2814	842.8	1198	.720
1950	1.7804-5	922.7	9.9185	28.488	661	1.0134	-1.0004	1.5219	1.2447	841.7	1460	.688	1.3328	1.2804	853.6	1223	.720
2000	1.7352-5	1000.1	9.9577	28.476	671	1.0185	-1.0006	1.5760	1.2371	849.9	1564	.677	1.3367	1.2795	864.4	1248	.719
2050	1.6919-5	1080.5	9.9974	28.461	682	1.0252	-1.0008	1.6427	1.2287	857.8	1693	.662	1.3405	1.2787	875.1	1272	.719
2100	1.6505-5	1164.6	10.0380	28.441	693	1.0340	-1.0011	1.7248	1.2197	865.3	1854	.644	1.3441	1.2780	885.8	1297	.718
2150	1.6106-5	1253.2	10.0797	28.415	703	1.0453	-1.0015	1.8253	1.2102	872.5	2057	.624	1.3474	1.2774	896.5	1321	.717
2200	1.5721-5	1347.5	10.1230	28.381	714	1.0597	-1.0020	1.9474	1.2004	879.6	2313	.601	1.3506	1.2770	907.2	1345	.717
2250	1.5348-5	1448.4	10.1684	28.337	724	1.0778	-1.0027	2.0942	1.1905	886.5	2632	.576	1.3537	1.2767	918.1	1369	.716
2300	1.4985-5	1557.3	10.2162	28.282	734	1.1001	-1.0036	2.2687	1.1810	893.6	3026	.550	1.3565	1.2767	929.1	1393	.715
2350	1.4631-5	1675.8	10.2672	28.213	744	1.1272	-1.0047	2.4734	1.1719	900.9	3508	.525	1.3593	1.2768	940.4	1417	.713
2400	1.4283-5	1805.2	10.3217	28.128	754	1.1596	-1.0060	2.7099	1.1636	908.6	4087	.500	1.3618	1.2772	951.9	1442	.712
2450	1.3940-5	1947.3	10.3803	28.025	763	1.1975	-1.0077	2.9790	1.1562	916.7	4771	.477	1.3643	1.2779	963.8	1468	.710
2500	1.3601-5	2103.7	10.4434	27.902	773	1.2413	-1.0096	3.2804	1.1499	925.5	5563	.456	1.3667	1.2788	976.1	1494	.707
2550	1.3265-5	2275.9	10.5116	27.755	782	1.2907	-1.0119	3.6124	1.1445	935.0	6457	.438	1.3689	1.2801	988.9	1522	.704
2600	1.2929-5	2465.4	10.5852	27.585	792	1.3457	-1.0145	3.9725	1.1401	945.2	7441	.423	1.3712	1.2818	1002.2	1551	.700
2650	1.2595-5	2673.5	10.6645	27.388	801	1.4057	-1.0175	4.3565	1.1366	956.2	8490	.411	1.3734	1.2838	1016.2	1582	.695
2700	1.2261-5	2901.3	10.7496	27.165	810	1.4698	-1.0208	4.7587	1.1340	968.0	9571	.403	1.3756	1.2862	1031.0	1616	.690
2750	1.1928-5	3149.5	10.8407	26.916	819	1.5367	-1.0243	5.1710	1.1322	980.7	10639	.398	1.3779	1.2890	1046.4	1651	.684
2800	1.1595-5	3418.4	10.9376	26.640	828	1.6045	-1.0281	5.5822	1.1311	994.2	11644	.397	1.3802	1.2922	1062.6	1689	.677
2850	1.1264-5	3707.5	11.0399	26.341	837	1.6708	-1.0319	5.9777	1.1306	1008.5	12531	.399	1.3826	1.2958	1079.7	1729	.669
2900	1.0935-5	4015.6	11.1471	26.022	846	1.7326	-1.0356	6.3399	1.1308	1023.6	13249	.405	1.3850	1.2999	1097.5	1772	.661
2950	1.0611-5	4340.6	11.2582	25.686	856	1.7864	-1.0391	6.6489	1.1316	1039.5	13753	.414	1.3876	1.3043	1116.0	1817	.653
3000	1.0293-5	4679.3	11.3720	25.339	865	1.8290	-1.0421	6.8848	1.1329	1056.1	14017	.425	1.3902	1.3090	1135.1	1864	.645

TABLE 18.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.016906; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8615-4	-450.0	8.2503	28.517	397	1.0000	-1.0000	1.1803	1.3280	590.3	644	.728	1.1799	1.3282	590.4	644	.728
950	3.6582-4	-390.6	8.3144	28.518	412	1.0000	-1.0000	1.1925	1.3236	605.5	676	.727	1.1918	1.3238	605.5	676	.727
1000	3.4753-4	-330.7	8.3759	28.518	427	1.0000	-1.0000	1.2040	1.3195	620.3	708	.726	1.2030	1.3199	620.3	707	.726
1050	3.3098-4	-270.3	8.4349	28.518	441	1.0000	-1.0000	1.2147	1.3158	634.7	738	.726	1.2132	1.3163	634.8	737	.726
1100	3.1594-4	-209.3	8.4916	28.518	455	1.0000	-1.0000	1.2252	1.3123	648.7	768	.725	1.2229	1.3130	648.9	767	.725
1150	3.0220-4	-147.8	8.5463	28.518	468	1.0000	-1.0000	1.2354	1.3089	662.5	798	.725	1.2322	1.3100	662.7	796	.725
1200	2.8961-4	-85.7	8.5991	28.518	482	1.0000	-1.0000	1.2454	1.3057	675.9	827	.725	1.2411	1.3071	676.2	824	.725
1250	2.7803-4	-23.2	8.6502	28.517	495	1.0000	-1.0000	1.2554	1.3025	689.0	857	.725	1.2495	1.3044	689.5	853	.725
1300	2.6733-4	39.8	8.6996	28.517	508	1.0000	-1.0000	1.2653	1.2994	701.8	886	.725	1.2575	1.3018	702.4	881	.725
1350	2.5743-4	103.3	8.7475	28.517	520	1.0001	-1.0000	1.2752	1.2964	714.3	915	.725	1.2652	1.2994	715.2	908	.725
1400	2.4824-4	167.3	8.7941	28.517	533	1.0001	-1.0000	1.2852	1.2935	726.6	945	.725	1.2725	1.2972	727.7	936	.725
1450	2.3968-4	231.8	8.8394	28.517	545	1.0001	-1.0000	1.2954	1.2905	738.6	975	.724	1.2795	1.2951	739.9	963	.724
1500	2.3169-4	296.9	8.8835	28.517	557	1.0002	-1.0000	1.3059	1.2876	750.4	1005	.724	1.2861	1.2932	752.0	990	.724
1550	2.2421-4	362.4	8.9265	28.517	569	1.0003	-1.0000	1.3168	1.2846	761.9	1036	.723	1.2924	1.2913	763.9	1016	.724
1600	2.1720-4	428.6	8.9684	28.516	581	1.0005	-1.0000	1.3282	1.2816	773.2	1068	.722	1.2984	1.2896	775.6	1043	.723
1650	2.1061-4	495.3	9.0095	28.516	593	1.0008	-1.0000	1.3403	1.2785	784.3	1101	.721	1.3041	1.2880	787.2	1070	.723
1700	2.0441-4	562.6	9.0497	28.515	604	1.0011	-1.0000	1.3533	1.2753	795.1	1136	.720	1.3095	1.2864	798.5	1096	.722
1750	1.9857-4	630.6	9.0891	28.514	616	1.0015	-1.0000	1.3675	1.2720	805.7	1172	.719	1.3146	1.2850	809.8	1122	.722
1800	1.9304-4	699.4	9.1279	28.513	627	1.0022	-1.0001	1.3831	1.2685	816.0	1210	.717	1.3195	1.2837	820.8	1147	.721
1850	1.8781-4	769.0	9.1660	28.511	638	1.0030	-1.0001	1.4006	1.2648	826.1	1251	.715	1.3242	1.2824	831.8	1173	.721
1900	1.8285-4	839.5	9.2036	28.508	650	1.0041	-1.0001	1.4203	1.2609	835.9	1296	.712	1.3286	1.2813	842.6	1198	.720
1950	1.7814-4	911.0	9.2408	28.504	661	1.0056	-1.0002	1.4430	1.2567	845.4	1345	.709	1.3328	1.2802	853.3	1223	.720
2000	1.7366-4	983.8	9.2776	28.500	671	1.0075	-1.0002	1.4691	1.2521	854.7	1401	.704	1.3367	1.2792	863.9	1248	.719
2050	1.6939-4	1058.0	9.3143	28.494	682	1.0099	-1.0003	1.4995	1.2472	863.7	1464	.699	1.3405	1.2782	874.4	1272	.719
2100	1.6531-4	1133.9	9.3508	28.486	693	1.0131	-1.0004	1.5350	1.2419	872.5	1536	.692	1.3441	1.2774	884.9	1296	.719
2150	1.6141-4	1211.6	9.3874	28.476	704	1.0171	-1.0005	1.5767	1.2362	880.9	1621	.684	1.3475	1.2766	895.2	1320	.718
2200	1.5767-4	1291.7	9.4242	28.463	714	1.0222	-1.0007	1.6256	1.2301	889.1	1721	.674	1.3507	1.2759	905.5	1343	.718
2250	1.5408-4	1374.3	9.4614	28.447	724	1.0285	-1.0010	1.6829	1.2236	897.1	1840	.663	1.3537	1.2754	915.8	1367	.717
2300	1.5062-4	1460.1	9.4991	28.426	735	1.0364	-1.0013	1.7499	1.2169	904.8	1980	.649	1.3566	1.2749	926.1	1390	.717
2350	1.4728-4	1549.5	9.5375	28.401	745	1.0459	-1.0016	1.8278	1.2100	912.4	2148	.634	1.3594	1.2745	936.4	1413	.716
2400	1.4406-4	1643.1	9.5769	28.371	755	1.0574	-1.0021	1.9178	1.2030	919.9	2347	.617	1.3620	1.2742	946.7	1436	.716
2450	1.4093-4	1741.5	9.6175	28.333	765	1.0712	-1.0027	2.0212	1.1961	927.3	2583	.599	1.3644	1.2740	957.1	1459	.715
2500	1.3789-4	1845.4	9.6595	28.288	775	1.0875	-1.0034	2.1386	1.1893	934.8	2860	.580	1.3667	1.2740	967.5	1483	.714
2550	1.3493-4	1955.6	9.7031	28.234	785	1.1064	-1.0042	2.2708	1.1828	942.4	3183	.560	1.3689	1.2741	978.1	1506	.713
2600	1.3204-4	2072.8	9.7486	28.170	794	1.1282	-1.0052	2.4179	1.1767	950.3	3557	.540	1.3710	1.2743	988.9	1530	.712
2650	1.2920-4	2197.7	9.7962	28.095	804	1.1529	-1.0064	2.5799	1.1711	958.3	3985	.520	1.3730	1.2748	999.9	1554	.710
2700	1.2641-4	2331.0	9.8460	28.007	813	1.1806	-1.0077	2.7560	1.1661	966.8	4467	.502	1.3749	1.2754	1011.1	1579	.708
2750	1.2367-4	2473.5	9.8983	27.907	823	1.2112	-1.0092	2.9454	1.1616	975.6	5004	.484	1.3767	1.2762	1022.5	1604	.706
2800	1.2097-4	2625.7	9.9532	27.793	832	1.2446	-1.0109	3.1469	1.1578	984.8	5593	.468	1.3784	1.2772	1034.3	1630	.704
2850	1.1829-4	2788.3	10.0107	27.664	841	1.2807	-1.0129	3.3588	1.1546	994.5	6228	.454	1.3801	1.2784	1046.4	1657	.701
2900	1.1565-4	2961.8	10.0711	27.520	851	1.3192	-1.0150	3.5796	1.1520	1004.6	6901	.441	1.3818	1.2798	1058.9	1685	.697
2950	1.1303-4	3146.4	10.1342	27.361	860	1.3599	-1.0172	3.8071	1.1499	1015.3	7601	.431	1.3834	1.2815	1071.8	1714	.694
3000	1.1044-4	3342.6	10.2001	27.187	869	1.4022	-1.0197	4.0390	1.1483	1026.4	8313	.422	1.3851	1.2834	1085.1	1745	.690

TABLE 18.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.016906; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8615-3	-450.0	7.5789	28.518	397	1.0000	-1.0000	1.1803	1.3280	590.3	645	.728	1.1799	1.3282	590.4	644	.728
950	3.6583-3	-390.6	7.6431	28.518	412	1.0000	-1.0000	1.1925	1.3236	605.5	676	.727	1.1918	1.3238	605.5	676	.727
1000	3.4753-3	-330.7	7.7046	28.518	427	1.0000	-1.0000	1.2040	1.3195	620.2	708	.726	1.2030	1.3199	620.3	707	.726
1050	3.3098-3	-270.3	7.7636	28.518	441	1.0000	-1.0000	1.2147	1.3158	634.7	738	.726	1.2132	1.3163	634.8	737	.726
1100	3.1594-3	-209.3	7.8203	28.518	455	1.0000	-1.0000	1.2252	1.3123	648.7	768	.725	1.2229	1.3130	648.9	767	.725
1150	3.0220-3	-147.7	7.8750	28.518	468	1.0000	-1.0000	1.2354	1.3089	662.5	798	.725	1.2322	1.3100	662.7	796	.725
1200	2.8961-3	-85.7	7.9278	28.518	482	1.0000	-1.0000	1.2454	1.3057	675.9	827	.725	1.2411	1.3071	676.2	824	.725
1250	2.7803-3	-23.2	7.9788	28.518	495	1.0000	-1.0000	1.2553	1.3025	689.0	857	.725	1.2495	1.3044	689.5	853	.725
1300	2.6733-3	39.8	8.0282	28.518	508	1.0000	-1.0000	1.2651	1.2995	701.8	886	.725	1.2575	1.3018	702.4	881	.725
1350	2.5743-3	103.3	8.0762	28.518	520	1.0000	-1.0000	1.2748	1.2965	714.4	915	.725	1.2652	1.2994	715.2	908	.725
1400	2.4824-3	167.3	8.1227	28.518	533	1.0000	-1.0000	1.2846	1.2936	726.7	944	.725	1.2725	1.2972	727.7	936	.725
1450	2.3968-3	231.8	8.1680	28.518	545	1.0001	-1.0000	1.2944	1.2908	738.7	974	.724	1.2795	1.2951	739.9	963	.724
1500	2.3169-3	296.7	8.2120	28.517	557	1.0001	-1.0000	1.3044	1.2879	750.5	1004	.724	1.2861	1.2932	752.0	990	.724
1550	2.2421-3	362.2	8.2549	28.517	569	1.0002	-1.0000	1.3145	1.2851	762.1	1034	.724	1.2924	1.2913	763.9	1016	.724
1600	2.1721-3	428.2	8.2968	28.517	581	1.0002	-1.0000	1.3248	1.2823	773.4	1065	.723	1.2984	1.2896	775.6	1043	.723
1650	2.1062-3	494.7	8.3378	28.517	593	1.0004	-1.0000	1.3355	1.2795	784.6	1096	.722	1.3041	1.2880	787.2	1070	.723
1700	2.0442-3	561.7	8.3778	28.516	604	1.0005	-1.0000	1.3465	1.2767	795.5	1128	.722	1.3095	1.2864	798.5	1096	.722
1750	1.9858-3	629.3	8.4170	28.516	616	1.0007	-1.0000	1.3581	1.2739	806.2	1161	.721	1.3146	1.2850	809.7	1122	.722
1800	1.9306-3	697.5	8.4554	28.515	627	1.0010	-1.0000	1.3702	1.2710	816.7	1194	.720	1.3195	1.2837	820.8	1147	.721
1850	1.8783-3	766.4	8.4931	28.514	638	1.0014	-1.0000	1.3830	1.2680	827.1	1229	.718	1.3242	1.2824	831.7	1173	.721
1900	1.8288-3	835.9	8.5302	28.513	650	1.0019	-1.0001	1.3967	1.2650	837.2	1265	.717	1.3286	1.2812	842.5	1198	.720
1950	1.7818-3	906.1	8.5667	28.511	661	1.0025	-1.0001	1.4115	1.2619	847.1	1303	.716	1.3328	1.2801	853.2	1223	.720
2000	1.7372-3	977.0	8.6026	28.509	672	1.0033	-1.0001	1.4275	1.2587	856.8	1343	.714	1.3367	1.2790	863.7	1248	.719
2050	1.6946-3	1048.8	8.6381	28.507	682	1.0043	-1.0001	1.4450	1.2554	866.4	1386	.712	1.3405	1.2781	874.2	1272	.719
2100	1.6541-3	1121.6	8.6731	28.503	693	1.0055	-1.0002	1.4643	1.2520	875.7	1431	.709	1.3441	1.2772	884.5	1296	.719
2150	1.6154-3	1195.3	8.7078	28.499	704	1.0071	-1.0002	1.4856	1.2484	884.9	1481	.706	1.3475	1.2763	894.7	1320	.719
2200	1.5784-3	1270.2	8.7422	28.494	714	1.0090	-1.0003	1.5094	1.2446	893.8	1535	.702	1.3507	1.2756	904.9	1343	.718
2250	1.5430-3	1346.3	8.7765	28.487	725	1.0114	-1.0004	1.5360	1.2407	902.6	1594	.698	1.3538	1.2748	915.0	1366	.718
2300	1.5090-3	1423.8	8.8105	28.479	735	1.0143	-1.0005	1.5659	1.2366	911.2	1661	.693	1.3567	1.2742	925.0	1389	.718
2350	1.4764-3	1502.9	8.8446	28.470	745	1.0178	-1.0006	1.5993	1.2323	919.6	1735	.687	1.3595	1.2736	934.9	1412	.717
2400	1.4450-3	1583.8	8.8786	28.458	755	1.0219	-1.0008	1.6370	1.2279	927.9	1819	.680	1.3621	1.2731	944.8	1435	.717
2450	1.4148-3	1666.7	8.9128	28.444	766	1.0269	-1.0010	1.6792	1.2234	936.0	1914	.672	1.3646	1.2726	954.7	1458	.717
2500	1.3857-3	1751.8	8.9472	28.426	776	1.0328	-1.0012	1.7265	1.2187	944.0	2021	.663	1.3669	1.2722	964.5	1480	.716
2550	1.3575-3	1839.5	8.9819	28.406	785	1.0397	-1.0015	1.7793	1.2140	951.9	2143	.652	1.3692	1.2719	974.3	1503	.716
2600	1.3303-3	1929.9	9.0170	28.382	795	1.0477	-1.0019	1.8381	1.2093	959.7	2282	.641	1.3713	1.2717	984.2	1526	.715
2650	1.3039-3	2023.4	9.0526	28.354	805	1.0569	-1.0023	1.9031	1.2046	967.5	2439	.628	1.3733	1.2715	994.0	1548	.714
2700	1.2783-3	2120.3	9.0889	28.321	815	1.0675	-1.0028	1.9746	1.1999	975.3	2616	.615	1.3752	1.2714	1003.9	1571	.713
2750	1.2534-3	2220.9	9.1258	28.283	824	1.0794	-1.0034	2.0527	1.1954	983.1	2815	.601	1.3771	1.2714	1013.8	1594	.712
2800	1.2291-3	2325.7	9.1635	28.239	834	1.0928	-1.0040	2.1373	1.1912	991.0	3037	.587	1.3788	1.2715	1023.8	1616	.711
2850	1.2054-3	2434.8	9.2021	28.189	843	1.1076	-1.0048	2.2283	1.1871	998.9	3284	.572	1.3804	1.2717	1033.9	1639	.710
2900	1.1822-3	2548.6	9.2417	28.133	853	1.1239	-1.0056	2.3253	1.1833	1007.1	3557	.557	1.3820	1.2720	1044.1	1662	.709
2950	1.1595-3	2667.4	9.2823	28.069	862	1.1416	-1.0066	2.4279	1.1799	1015.4	3856	.543	1.3835	1.2724	1054.5	1685	.708
3000	1.1373-3	2791.5	9.3240	27.998	871	1.1608	-1.0076	2.5355	1.1768	1023.9	4181	.528	1.3850	1.2729	1064.9	1709	.706

TABLE 18.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.016906; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9307-2	-450.0	7.1097	28.518	397	1.0000	-1.0000	1.1803	1.3280	590.3	645	.728	1.1799	1.3282	590.4	644	.728
950	1.8291-2	-390.6	7.1739	28.518	412	1.0000	-1.0000	1.1925	1.3236	605.5	676	.727	1.1918	1.3238	605.5	676	.727
1000	1.7377-2	-330.7	7.2353	28.518	427	1.0000	-1.0000	1.2041	1.3195	620.2	708	.726	1.2030	1.3199	620.3	707	.726
1050	1.6549-2	-270.3	7.2943	28.518	441	1.0000	-1.0000	1.2148	1.3158	634.7	738	.726	1.2132	1.3163	634.8	737	.726
1100	1.5797-2	-209.3	7.3511	28.518	455	1.0000	-1.0000	1.2252	1.3123	648.7	768	.725	1.2229	1.3130	648.9	767	.725
1150	1.5110-2	-147.7	7.4058	28.518	468	1.0000	-1.0000	1.2354	1.3089	662.5	798	.725	1.2322	1.3099	662.7	796	.725
1200	1.4481-2	-85.7	7.4586	28.518	482	1.0000	-1.0000	1.2454	1.3056	675.9	827	.725	1.2411	1.3071	676.2	824	.725
1250	1.3901-2	-23.2	7.5096	28.518	495	1.0000	-1.0000	1.2552	1.3025	689.0	856	.725	1.2495	1.3044	689.5	853	.725
1300	1.3367-2	39.8	7.5590	28.518	508	1.0000	-1.0000	1.2650	1.2995	701.8	886	.725	1.2575	1.3018	702.4	881	.725
1350	1.2872-2	103.3	7.6069	28.518	520	1.0000	-1.0000	1.2747	1.2965	714.4	915	.725	1.2652	1.2994	715.2	908	.725
1400	1.2412-2	167.3	7.6535	28.518	533	1.0000	-1.0000	1.2844	1.2936	726.7	944	.725	1.2725	1.2972	727.7	936	.725
1450	1.1984-2	231.7	7.6987	28.518	545	1.0000	-1.0000	1.2940	1.2908	738.7	974	.725	1.2795	1.2951	739.9	963	.724
1500	1.1585-2	296.7	7.7427	28.518	557	1.0000	-1.0000	1.3038	1.2880	750.5	1003	.724	1.2861	1.2932	752.0	990	.724
1550	1.1211-2	362.1	7.7857	28.518	569	1.0001	-1.0000	1.3136	1.2853	762.1	1033	.724	1.2924	1.2913	763.9	1016	.724
1600	1.0860-2	428.0	7.8275	28.518	581	1.0001	-1.0000	1.3236	1.2826	773.5	1064	.723	1.2984	1.2896	775.6	1043	.723
1650	1.0531-2	494.5	7.8684	28.518	593	1.0002	-1.0000	1.3337	1.2799	784.7	1094	.723	1.3041	1.2879	787.1	1070	.723
1700	1.0221-2	561.4	7.9084	28.517	604	1.0003	-1.0000	1.3440	1.2772	795.6	1125	.722	1.3095	1.2864	798.5	1096	.722
1750	9.9294-3	628.9	7.9475	28.517	616	1.0004	-1.0000	1.3546	1.2745	806.4	1157	.721	1.3146	1.2850	809.7	1122	.722
1800	9.6534-3	696.9	7.9858	28.517	627	1.0006	-1.0000	1.3655	1.2718	817.0	1189	.721	1.3195	1.2836	820.8	1147	.721
1850	9.3923-3	765.4	8.0234	28.516	638	1.0008	-1.0000	1.3768	1.2692	827.4	1222	.720	1.3242	1.2824	831.7	1173	.721
1900	9.1449-3	834.6	8.0602	28.515	650	1.0011	-1.0000	1.3885	1.2665	837.6	1255	.719	1.3286	1.2812	842.5	1198	.720
1950	8.9101-3	904.3	8.0965	28.514	661	1.0015	-1.0001	1.4008	1.2638	847.7	1290	.718	1.3328	1.2801	853.1	1223	.720
2000	8.6870-3	974.7	8.1321	28.513	672	1.0019	-1.0001	1.4137	1.2610	857.6	1325	.716	1.3368	1.2790	863.7	1248	.719
2050	8.4747-3	1045.7	8.1672	28.512	682	1.0025	-1.0001	1.4272	1.2582	867.3	1362	.715	1.3405	1.2780	874.1	1272	.719
2100	8.2724-3	1117.4	8.2017	28.510	693	1.0032	-1.0001	1.4417	1.2554	876.8	1400	.714	1.3441	1.2771	884.4	1296	.719
2150	8.0793-3	1189.9	8.2358	28.507	704	1.0040	-1.0001	1.4571	1.2525	886.2	1440	.712	1.3475	1.2762	894.6	1320	.719
2200	7.8949-3	1263.1	8.2695	28.504	714	1.0050	-1.0002	1.4736	1.2496	895.5	1482	.710	1.3508	1.2754	904.7	1343	.718
2250	7.7184-3	1337.2	8.3028	28.501	725	1.0063	-1.0002	1.4915	1.2466	904.6	1527	.708	1.3538	1.2747	914.7	1366	.718
2300	7.5495-3	1412.3	8.3358	28.496	735	1.0078	-1.0003	1.5108	1.2436	913.5	1574	.705	1.3567	1.2740	924.6	1389	.718
2350	7.3875-3	1488.3	8.3685	28.491	745	1.0096	-1.0003	1.5318	1.2404	922.3	1626	.702	1.3595	1.2733	934.5	1412	.718
2400	7.2320-3	1565.5	8.4010	28.485	756	1.0117	-1.0004	1.5546	1.2372	931.0	1681	.699	1.3622	1.2727	944.2	1435	.717
2450	7.0825-3	1643.8	8.4333	28.477	766	1.0142	-1.0005	1.5796	1.2340	939.5	1741	.695	1.3647	1.2722	953.9	1457	.717
2500	6.9386-3	1723.5	8.4655	28.468	776	1.0172	-1.0007	1.6069	1.2306	947.9	1807	.690	1.3670	1.2717	963.6	1480	.717
2550	6.8000-3	1804.6	8.4976	28.457	786	1.0207	-1.0008	1.6367	1.2272	956.2	1879	.684	1.3693	1.2712	973.2	1502	.716
2600	6.6663-3	1887.2	8.5297	28.445	796	1.0247	-1.0010	1.6693	1.2238	964.4	1958	.678	1.3715	1.2709	982.8	1525	.716
2650	6.5372-3	1971.6	8.5618	28.430	805	1.0293	-1.0012	1.7050	1.2203	972.5	2045	.671	1.3735	1.2705	992.3	1547	.715
2700	6.4123-3	2057.8	8.5941	28.413	815	1.0345	-1.0014	1.7438	1.2168	980.5	2141	.664	1.3755	1.2702	1001.8	1569	.714
2750	6.2914-3	2146.0	8.6264	28.394	825	1.0405	-1.0017	1.7860	1.2133	988.5	2247	.656	1.3773	1.2700	1011.3	1592	.714
2800	6.1742-3	2236.4	8.6590	28.372	835	1.0473	-1.0020	1.8317	1.2099	996.4	2364	.647	1.3791	1.2698	1020.8	1614	.713
2850	6.0604-3	2329.2	8.6919	28.346	844	1.0549	-1.0024	1.8809	1.2065	1004.3	2493	.637	1.3808	1.2697	1030.3	1636	.712
2900	5.9498-3	2424.6	8.7250	28.317	854	1.0633	-1.0028	1.9338	1.2031	1012.2	2633	.627	1.3824	1.2697	1039.8	1658	.712
2950	5.8422-3	2522.7	8.7586	28.284	863	1.0726	-1.0033	1.9901	1.1999	1020.1	2788	.616	1.3840	1.2697	1049.3	1680	.711
3000	5.7373-3	2623.6	8.7925	28.247	872	1.0828	-1.0039	2.0499	1.1969	1028.1	2956	.605	1.3854	1.2698	1058.9	1702	.710

TABLE 18C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.016906; EQUIV.RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.878-5	-1349.7	7.4186	28.517	1.0657	1.789-5	29.364	132	1.000	-1.000	0.9984	1.3959	281	180	.734	200
220	1.703-5	-1325.0	7.5357	28.517	1.5843	1.625-5	29.336	143	1.000	-1.000	0.9993	1.3959	295	195	.731	220
240	1.523-5	-1263.0	7.8031	28.517	6.0557	1.476-5	29.061	151	1.000	-1.000	1.0122	1.3940	309	208	.735	240
						PRESSURE = 0.10 ATM										
200	1.878-4	-1349.9	6.7962	28.517	1.0292	1.789-4	29.365	132	1.000	-1.000	0.9984	1.3959	281	180	.734	200
220	1.707-4	-1328.9	6.8961	28.517	1.0866	1.626-4	29.362	143	1.000	-1.000	0.9981	1.3961	295	196	.730	220
240	1.561-4	-1304.2	7.0035	28.517	1.5165	1.490-4	29.335	154	1.000	-1.000	0.9995	1.3958	308	211	.727	240
260	1.417-4	-1255.3	7.1981	28.517	4.0642	1.366-4	29.147	162	1.000	-1.000	1.0088	1.3942	322	225	.729	260
280	1.241-4	-1133.1	7.6511	28.517	1.0402	1.241-4	28.517	167	1.000	-1.000	1.0402	1.3894	337	233	.743	280
						PRESSURE = 1.00 ATM										
200	1.878-3	-1349.9	6.1749	28.517	1.0255	1.789-3	29.365	132	1.000	-1.000	0.9983	1.3959	281	180	.734	200
220	1.707-3	-1329.3	6.2731	28.517	1.0371	1.627-3	29.365	143	1.000	-1.000	0.9980	1.3961	295	196	.730	220
240	1.564-3	-1308.2	6.3649	28.517	1.0863	1.491-3	29.362	154	1.000	-1.000	0.9982	1.3960	308	212	.726	240
260	1.442-3	-1284.6	6.4592	28.517	1.3378	1.375-3	29.344	164	1.000	-1.000	0.9996	1.3956	321	227	.724	260
280	1.328-3	-1236.1	6.6380	28.517	2.1291	1.273-3	29.255	173	1.000	-1.000	1.0048	1.3944	333	241	.724	280
298	1.220-3	-1183.6	6.8190	28.517	3.9266	1.186-3	29.012	180	1.000	-1.000	1.0175	1.3921	345	251	.729	298
300	1.208-3	-1176.1	6.8442	28.517	4.2210	1.177-3	28.971	181	1.000	-1.000	1.0197	1.3917	346	252	.730	300
320	1.086-3	-1091.4	7.1189	28.517	1.0438	1.086-3	28.517	186	1.000	-1.000	1.0438	1.3876	360	262	.741	320
						PRESSURE = 10.00 ATM										
200	1.876-2	-1349.9	5.5537	28.517	1.0252	1.789-2	29.365	132	1.000	-1.000	0.9983	1.3959	281	180	.734	200
220	1.706-2	-1329.4	5.6517	28.517	1.0321	1.627-2	29.365	143	1.000	-1.000	0.9980	1.3961	295	196	.730	220
240	1.564-2	-1308.6	5.7420	28.517	1.0435	1.491-2	29.365	154	1.000	-1.000	0.9981	1.3960	308	212	.726	240
260	1.443-2	-1287.5	5.8265	28.517	1.0755	1.376-2	29.363	164	1.000	-1.000	0.9987	1.3957	321	227	.723	260
280	1.339-2	-1249.0	5.9685	28.517	1.2469	1.278-2	29.354	174	1.000	-1.000	1.0001	1.3951	333	242	.721	280
298	1.255-2	-1225.1	6.0512	28.517	1.4130	1.199-2	29.330	183	1.000	-1.000	1.0025	1.3942	343	255	.721	298
300	1.247-2	-1222.4	6.0600	28.517	1.4390	1.191-2	29.326	184	1.000	-1.000	1.0028	1.3941	344	256	.721	300
320	1.161-2	-1189.7	6.1653	28.517	1.8854	1.114-2	29.248	193	1.000	-1.000	1.0083	1.3926	356	269	.723	320
340	1.075-2	-1143.9	6.3041	28.517	2.8088	1.042-2	29.064	200	1.000	-1.000	1.0193	1.3902	368	280	.727	340
360	9.801-3	-1071.6	6.5101	28.517	4.6129	9.708-3	28.679	206	1.000	-1.000	1.0408	1.3861	380	291	.737	360
380	9.146-3	-1028.6	6.6276	28.517	1.0519	9.146-3	28.517	213	1.000	-1.000	1.0519	1.3835	392	303	.739	380
						PRESSURE = 50.00 ATM										
200	9.345-2	-1349.9	5.1195	28.517	1.0251	8.947-2	29.365	132	1.000	-1.000	0.9983	1.3959	281	180	.734	200
220	8.499-2	-1329.4	5.2175	28.517	1.0317	8.133-2	29.365	143	1.000	-1.000	0.9980	1.3961	295	196	.730	220
240	7.793-2	-1308.7	5.3076	28.517	1.0397	7.456-2	29.365	154	1.000	-1.000	0.9981	1.3960	308	212	.726	240
260	7.196-2	-1287.8	5.3913	28.517	1.0523	6.882-2	29.365	164	1.000	-1.000	0.9986	1.3957	321	227	.723	260
280	6.685-2	-1250.1	5.5300	28.517	1.1700	6.390-2	29.363	174	1.000	-1.000	0.9997	1.3952	333	242	.721	280
298	6.276-2	-1228.6	5.6044	28.517	1.2031	6.000-2	29.358	183	1.000	-1.000	1.0012	1.3944	343	255	.720	298
300	6.237-2	-1226.4	5.6118	28.517	1.2083	5.963-2	29.357	184	1.000	-1.000	1.0014	1.3944	344	256	.720	300
320	5.841-2	-1201.5	5.6923	28.517	1.2967	5.587-2	29.342	193	1.000	-1.000	1.0039	1.3933	355	270	.720	320
340	5.481-2	-1174.0	5.7756	28.517	1.4716	5.252-2	29.305	202	1.000	-1.000	1.0078	1.3918	366	283	.722	340
360	5.142-2	-1141.7	5.8677	28.517	1.7823	4.947-2	29.228	211	1.000	-1.000	1.0140	1.3900	377	295	.724	360
380	4.811-2	-1101.3	5.9767	28.517	2.2929	4.663-2	29.083	218	1.000	-1.000	1.0238	1.3874	388	307	.727	380
400	4.470-2	-1048.0	6.1132	28.517	3.0933	4.392-2	28.832	225	1.000	-1.000	1.0394	1.3840	400	319	.732	400
420	4.137-2	-986.4	6.2640	28.517	1.0589	4.137-2	28.517	230	1.000	-1.000	1.0589	1.3800	411	331	.738	420

TABLE 19A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.033812; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.5721;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06838; H2O= .10256; N2= .72335; O2= .09703; AR= .00868

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7410-3	8.7050-2	-1912.6	7.9696	7.2995	6.6295	5.9594	5.4911	1.0444	1.3862	284.0	120	162	.7719	200
210	1.6581-3	8.2905-2	-1902.2	8.0205	7.3505	6.6805	6.0104	5.5421	1.0448	1.3860	291.0	125	171	.7682	210
220	1.5827-3	7.9136-2	-1891.7	8.0692	7.3991	6.7291	6.0590	5.5907	1.0454	1.3858	297.9	131	179	.7648	220
230	1.5139-3	7.5695-2	-1881.3	8.1156	7.4456	6.7756	6.1055	5.6372	1.0460	1.3854	304.5	136	187	.7617	230
240	1.4508-3	7.2541-2	-1870.8	8.1602	7.4901	6.8201	6.1500	5.6817	1.0467	1.3851	311.0	142	195	.7589	240
250	1.3928-3	6.9640-2	-1860.4	8.2029	7.5329	6.8628	6.1928	5.7244	1.0476	1.3846	317.4	147	204	.7566	250
260	1.3392-3	6.6961-2	-1849.9	8.2440	7.5740	6.9039	6.2339	5.7656	1.0485	1.3841	323.6	152	211	.7546	260
270	1.2896-3	6.4481-2	-1839.4	8.2836	7.6136	6.9435	6.2735	5.8051	1.0496	1.3836	329.7	157	219	.7529	270
280	1.2436-3	6.2178-2	-1828.9	8.3218	7.6518	6.9817	6.3117	5.8433	1.0507	1.3830	335.7	162	227	.7516	280
290	1.2007-3	6.0034-2	-1818.4	8.3587	7.6887	7.0186	6.3486	5.8802	1.0519	1.3824	341.6	167	235	.7506	290
298	1.1679-3	5.8393-2	-1809.8	8.3879	7.7178	7.0478	6.3777	5.9094	1.0530	1.3819	346.3	171	241	.7500	298
300	1.1607-3	5.8033-2	-1807.8	8.3944	7.7243	7.0543	6.3843	5.9159	1.0533	1.3818	347.3	172	242	.7498	300
310	1.1232-3	5.6161-2	-1797.3	8.4289	7.7589	7.0889	6.4188	5.9505	1.0547	1.3811	353.0	177	249	.7497	310
320	1.0881-3	5.4406-2	-1786.7	8.4625	7.7924	7.1224	6.4523	5.9840	1.0562	1.3803	358.5	182	256	.7497	320
330	1.0551-3	5.2757-2	-1776.2	8.4950	7.8249	7.1549	6.4848	6.0165	1.0577	1.3795	364.0	187	263	.7498	330
340	1.0241-3	5.1206-2	-1765.6	8.5266	7.8565	7.1865	6.5164	6.0481	1.0594	1.3787	369.3	191	270	.7499	340
350	9.9485-4	4.9743-2	-1755.0	8.5573	7.8873	7.2172	6.5472	6.0788	1.0611	1.3779	374.6	196	277	.7499	350
360	9.6722-4	4.8361-2	-1744.4	8.5872	7.9172	7.2471	6.5771	6.1088	1.0629	1.3770	379.8	200	284	.7495	360
370	9.4108-4	4.7054-2	-1733.7	8.6164	7.9463	7.2763	6.6062	6.1379	1.0648	1.3761	384.9	205	291	.7489	370
380	9.1631-4	4.5816-2	-1723.1	8.6448	7.9748	7.3047	6.6347	6.1663	1.0667	1.3751	390.0	209	298	.7482	380
390	8.9282-4	4.4641-2	-1712.4	8.6725	8.0025	7.3324	6.6624	6.1941	1.0687	1.3742	394.9	214	306	.7476	390
400	8.7050-4	4.3525-2	-1701.7	8.6996	8.0296	7.3595	6.6895	6.2211	1.0707	1.3732	399.8	218	313	.7469	400
410	8.4927-4	4.2463-2	-1691.0	8.7261	8.0560	7.3860	6.7159	6.2476	1.0729	1.3722	404.6	222	320	.7466	410
420	8.2905-4	4.1452-2	-1680.2	8.7520	8.0819	7.4119	6.7418	6.2735	1.0750	1.3711	409.4	227	326	.7463	420
430	8.0977-4	4.0488-2	-1669.5	8.7773	8.1072	7.4372	6.7671	6.2988	1.0773	1.3701	414.1	231	333	.7461	430
440	7.9136-4	3.9568-2	-1658.7	8.8021	8.1320	7.4620	6.7919	6.3236	1.0796	1.3690	418.7	235	340	.7459	440
450	7.7378-4	3.8689-2	-1647.9	8.8264	8.1563	7.4863	6.8162	6.3479	1.0819	1.3679	423.2	239	347	.7458	450
460	7.5695-4	3.7848-2	-1637.1	8.8502	8.1801	7.5101	6.8400	6.3717	1.0843	1.3668	427.7	243	353	.7457	460
470	7.4085-4	3.7042-2	-1626.2	8.8735	8.2035	7.5334	6.8634	6.3950	1.0867	1.3657	432.2	247	360	.7457	470
480	7.2541-4	3.6271-2	-1615.3	8.8964	8.2264	7.5563	6.8863	6.4179	1.0892	1.3646	436.6	251	367	.7457	480
490	7.1061-4	3.5531-2	-1604.4	8.9189	8.2489	7.5788	6.9088	6.4404	1.0917	1.3634	440.9	255	373	.7457	490
500	6.9640-4	3.4820-2	-1593.5	8.9410	8.2709	7.6009	6.9308	6.4625	1.0942	1.3623	445.2	259	380	.7457	500
510	6.8274-4	3.4137-2	-1582.5	8.9627	8.2926	7.6226	6.9525	6.4842	1.0968	1.3611	449.4	263	386	.7456	510
520	6.6961-4	3.3481-2	-1571.6	8.9840	8.3140	7.6439	6.9739	6.5055	1.0994	1.3600	453.6	267	393	.7454	520
530	6.5698-4	3.2849-2	-1560.5	9.0050	8.3349	7.6649	6.9948	6.5265	1.1021	1.3588	457.8	270	400	.7452	530
540	6.4481-4	3.2241-2	-1549.5	9.0256	8.3555	7.6855	7.0155	6.5471	1.1048	1.3576	461.9	274	407	.7450	540
550	6.3309-4	3.1654-2	-1538.5	9.0459	8.3758	7.7058	7.0357	6.5674	1.1075	1.3564	465.9	278	413	.7447	550
560	6.2178-4	3.1089-2	-1527.4	9.0659	8.3958	7.7258	7.0557	6.5874	1.1102	1.3552	469.9	282	420	.7445	560
570	6.1088-4	3.0544-2	-1516.2	9.0855	8.4155	7.7454	7.0754	6.6071	1.1129	1.3540	473.9	285	427	.7442	570
580	6.0034-4	3.0017-2	-1505.1	9.1049	8.4349	7.7648	7.0948	6.6264	1.1157	1.3528	477.8	289	433	.7439	580
590	5.9017-4	2.9508-2	-1493.9	9.1240	8.4540	7.7839	7.1139	6.6455	1.1185	1.3516	481.7	293	440	.7436	590

TABLE 19A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.033812; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.5721;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06838; H2O= .10256; N2= .72335; O2= .09703; AR= .00868

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
600	5.8033-4	2.9017-2	-1482.7	9.1428	8.4728	7.8027	7.1327	6.6644	1.1213	1.3505	485.6	296	447	.7433	600
610	5.7082-4	2.8541-2	-1471.5	9.1614	8.4913	7.8213	7.1513	6.6829	1.1242	1.3493	489.4	300	454	.7430	610
620	5.6161-4	2.8081-2	-1460.2	9.1797	8.5097	7.8396	7.1696	6.7012	1.1270	1.3481	493.2	304	461	.7426	620
630	5.5270-4	2.7635-2	-1449.0	9.1978	8.5277	7.8577	7.1876	6.7193	1.1299	1.3469	496.9	307	467	.7422	630
640	5.4406-4	2.7203-2	-1437.7	9.2156	8.5455	7.8755	7.2054	6.7371	1.1327	1.3457	500.6	311	474	.7419	640
650	5.3569-4	2.6785-2	-1426.3	9.2332	8.5631	7.8931	7.2230	6.7547	1.1356	1.3445	504.3	314	481	.7415	650
660	5.2757-4	2.6379-2	-1414.9	9.2505	8.5805	7.9104	7.2404	6.7720	1.1385	1.3434	507.9	318	488	.7411	660
670	5.1970-4	2.5985-2	-1403.5	9.2677	8.5976	7.9276	7.2575	6.7892	1.1414	1.3422	511.6	321	495	.7407	670
680	5.1206-4	2.5603-2	-1392.1	9.2846	8.6145	7.9445	7.2745	6.8061	1.1443	1.3410	515.1	325	502	.7403	680
690	5.0464-4	2.5232-2	-1380.7	9.3013	8.6313	7.9612	7.2912	6.8228	1.1472	1.3399	518.7	328	508	.7400	690
700	4.9743-4	2.4871-2	-1369.2	9.3178	8.6478	7.9777	7.3077	6.8394	1.1501	1.3387	522.2	331	515	.7396	700
710	4.9042-4	2.4521-2	-1357.7	9.3342	8.6641	7.9941	7.3240	6.8557	1.1530	1.3376	525.7	335	522	.7392	710
720	4.8361-4	2.4180-2	-1346.1	9.3503	8.6803	8.0102	7.3402	6.8718	1.1559	1.3365	529.2	338	529	.7388	720
730	4.7698-4	2.3849-2	-1334.5	9.3663	8.6962	8.0262	7.3561	6.8878	1.1587	1.3354	532.6	342	536	.7385	730
740	4.7054-4	2.3527-2	-1322.9	9.3821	8.7120	8.0420	7.3719	6.9036	1.1616	1.3342	536.0	345	543	.7381	740
750	4.6427-4	2.3213-2	-1311.3	9.3977	8.7276	8.0576	7.3875	6.9192	1.1645	1.3331	539.4	348	550	.7377	750
760	4.5816-4	2.2908-2	-1299.6	9.4131	8.7431	8.0730	7.4030	6.9346	1.1674	1.3321	542.8	351	556	.7374	760
770	4.5221-4	2.2610-2	-1288.0	9.4284	8.7584	8.0883	7.4183	6.9499	1.1702	1.3310	546.1	355	563	.7370	770
780	4.4641-4	2.2320-2	-1276.2	9.4435	8.7735	8.1034	7.4334	6.9650	1.1731	1.3299	549.4	358	570	.7367	780
790	4.4076-4	2.2038-2	-1264.5	9.4585	8.7884	8.1184	7.4483	6.9800	1.1759	1.3288	552.7	361	577	.7364	790
800	4.3525-4	2.1762-2	-1252.7	9.4733	8.8032	8.1332	7.4632	6.9948	1.1787	1.3278	556.0	364	584	.7360	800
810	4.2988-4	2.1494-2	-1240.9	9.4880	8.8179	8.1479	7.4778	7.0095	1.1815	1.3268	559.2	368	590	.7358	810
820	4.2463-4	2.1232-2	-1229.1	9.5025	8.8324	8.1624	7.4923	7.0240	1.1843	1.3257	562.4	371	597	.7355	820
830	4.1952-4	2.0976-2	-1217.2	9.5168	8.8468	8.1767	7.5067	7.0384	1.1871	1.3247	565.7	374	604	.7353	830
840	4.1452-4	2.0726-2	-1205.4	9.5311	8.8610	8.1910	7.5209	7.0526	1.1898	1.3237	568.8	377	611	.7350	840
850	4.0965-4	2.0482-2	-1193.4	9.5452	8.8751	8.2051	7.5350	7.0667	1.1926	1.3228	572.0	380	617	.7348	850
860	4.0488-4	2.0244-2	-1181.5	9.5591	8.8891	8.2190	7.5490	7.0807	1.1953	1.3218	575.1	383	624	.7345	860
870	4.0023-4	2.0011-2	-1169.5	9.5730	8.9029	8.2329	7.5628	7.0945	1.1980	1.3208	578.3	387	631	.7343	870
880	3.9568-4	1.9784-2	-1157.5	9.5867	8.9166	8.2466	7.5765	7.1082	1.2007	1.3199	581.4	390	637	.7341	880
890	3.9123-4	1.9562-2	-1145.5	9.6003	8.9302	8.2602	7.5901	7.1218	1.2033	1.3190	584.5	393	644	.7338	890
900	3.8689-4	1.9344-2	-1133.5	9.6137	8.9437	8.2736	7.6036	7.1352	1.2059	1.3181	587.5	396	651	.7336	900
910	3.8264-4	1.9132-2	-1121.4	9.6271	8.9570	8.2870	7.6169	7.1486	1.2085	1.3172	590.6	399	657	.7334	910
920	3.7848-4	1.8924-2	-1109.3	9.6403	8.9702	8.3002	7.6301	7.1618	1.2111	1.3163	593.6	402	664	.7332	920
930	3.7441-4	1.8720-2	-1097.2	9.6534	8.9833	8.3133	7.6432	7.1749	1.2136	1.3154	596.6	405	670	.7330	930
940	3.7042-4	1.8521-2	-1085.0	9.6664	8.9963	8.3263	7.6562	7.1879	1.2162	1.3145	599.6	408	677	.7328	940
950	3.6653-4	1.8326-2	-1072.9	9.6793	9.0092	8.3392	7.6691	7.2008	1.2187	1.3137	602.6	411	683	.7326	950
960	3.6271-4	1.8135-2	-1060.7	9.6920	9.0220	8.3519	7.6819	7.2136	1.2211	1.3129	605.6	414	690	.7325	960
970	3.5897-4	1.7948-2	-1048.4	9.7047	9.0347	8.3646	7.6946	7.2262	1.2235	1.3120	608.6	417	696	.7323	970
980	3.5531-4	1.7765-2	-1036.2	9.7173	9.0472	8.3772	7.7071	7.2388	1.2259	1.3112	611.5	420	703	.7321	980
990	3.5172-4	1.7586-2	-1023.9	9.7297	9.0597	8.3896	7.7196	7.2512	1.2283	1.3105	614.4	423	709	.7319	990

TABLE 19A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.033812; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.5721;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06838; H2O= .10256; N2= .72335; O2= .09703; AR= .00868

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4820-4	1.7410-2	-1011.6	9.7421	9.0720	8.4020	7.7319	7.2636	1.2306	1.3097	617.3	426	716	.7318	1000
1050	3.3162-4	1.6581-2	-949.8	9.8024	9.1323	8.4623	7.7923	7.3239	1.2416	1.3061	631.7	440	747	.7311	1050
1100	3.1654-4	1.5827-2	-887.5	9.8604	9.1903	8.5203	7.8503	7.3819	1.2521	1.3028	645.8	454	778	.7306	1100
1150	3.0278-4	1.5139-2	-824.6	9.9163	9.2462	8.5762	7.9061	7.4378	1.2621	1.2996	659.5	468	808	.7302	1150
1200	2.9017-4	1.4508-2	-761.3	9.9702	9.3001	8.6301	7.9601	7.4917	1.2717	1.2967	672.9	481	839	.7298	1200
1250	2.7856-4	1.3928-2	-697.4	10.0223	9.3522	8.6822	8.0122	7.5438	1.2808	1.2940	686.1	495	868	.7295	1250
1300	2.6785-4	1.3392-2	-633.2	10.0727	9.4027	8.7326	8.0626	7.5942	1.2895	1.2914	699.0	508	898	.7291	1300
1350	2.5793-4	1.2896-2	-568.5	10.1215	9.4515	8.7814	8.1114	7.6430	1.2977	1.2891	711.6	521	927	.7288	1350
1400	2.4871-4	1.2436-2	-503.4	10.1689	9.4988	8.8288	8.1587	7.6904	1.3056	1.2868	724.0	533	956	.7285	1400
1450	2.4014-4	1.2007-2	-438.0	10.2148	9.5448	8.8747	8.2047	7.7363	1.3131	1.2847	736.3	546	984	.7281	1450
1500	2.3213-4	1.1607-2	-372.1	10.2594	9.5894	8.9193	8.2493	7.7810	1.3202	1.2827	748.3	558	1013	.7277	1500
1550	2.2464-4	1.1232-2	-305.9	10.3028	9.6328	8.9628	8.2927	7.8244	1.3270	1.2809	760.1	570	1041	.7271	1550
1600	2.1762-4	1.0881-2	-239.4	10.3451	9.6750	9.0050	8.3349	7.8666	1.3334	1.2792	771.7	583	1069	.7265	1600
1650	2.1103-4	1.0551-2	-172.6	10.3862	9.7162	9.0461	8.3761	7.9077	1.3395	1.2775	783.2	595	1097	.7259	1650
1700	2.0482-4	1.0241-2	-105.5	10.4263	9.7562	9.0862	8.4161	7.9478	1.3454	1.2760	794.5	606	1125	.7253	1700
1750	1.9897-4	9.9485-3	-38.1	10.4654	9.7953	9.1253	8.4552	7.9869	1.3509	1.2746	805.6	618	1152	.7247	1750
1800	1.9344-4	9.6722-3	29.6	10.5035	9.8334	9.1634	8.4933	8.0250	1.3561	1.2732	816.6	630	1179	.7241	1800
1850	1.8822-4	9.4108-3	97.5	10.5407	9.8707	9.2006	8.5306	8.0622	1.3611	1.2719	827.5	641	1206	.7234	1850
1900	1.8326-4	9.1631-3	165.7	10.5771	9.9070	9.2370	8.5669	8.0986	1.3658	1.2707	838.2	652	1233	.7228	1900
1950	1.7856-4	8.9282-3	234.1	10.6126	9.9426	9.2725	8.6025	8.1341	1.3703	1.2696	848.8	663	1259	.7221	1950
2000	1.7410-4	8.7050-3	302.7	10.6474	9.9773	9.3073	8.6372	8.1689	1.3746	1.2686	859.2	675	1285	.7215	2000
2050	1.6985-4	8.4927-3	371.6	10.6813	10.0113	9.3413	8.6712	8.2029	1.3786	1.2676	869.6	686	1311	.7211	2050
2100	1.6581-4	8.2905-3	440.6	10.7146	10.0446	9.3745	8.7045	8.2361	1.3825	1.2666	879.8	696	1336	.7206	2100
2150	1.6195-4	8.0977-3	509.8	10.7472	10.0771	9.4071	8.7371	8.2687	1.3861	1.2657	889.9	707	1361	.7201	2150
2200	1.5827-4	7.9136-3	579.2	10.7791	10.1090	9.4390	8.7690	8.3006	1.3896	1.2649	899.9	718	1386	.7197	2200
2250	1.5476-4	7.7378-3	648.8	10.8104	10.1403	9.4703	8.8002	8.3319	1.3929	1.2641	909.8	728	1411	.7192	2250
2300	1.5139-4	7.5695-3	718.5	10.8410	10.1710	9.5009	8.8309	8.3625	1.3960	1.2633	919.5	739	1435	.7187	2300
2350	1.4817-4	7.4085-3	788.4	10.8711	10.2010	9.5310	8.8609	8.3926	1.3990	1.2626	929.2	749	1460	.7182	2350
2400	1.4508-4	7.2541-3	858.4	10.9005	10.2305	9.5605	8.8904	8.4221	1.4018	1.2620	938.8	760	1484	.7177	2400
2450	1.4212-4	7.1061-3	928.5	10.9295	10.2594	9.5894	8.9193	8.4510	1.4045	1.2613	948.3	770	1508	.7173	2450
2500	1.3928-4	6.9640-3	998.8	10.9579	10.2878	9.6178	8.9477	8.4794	1.4071	1.2607	957.7	780	1531	.7168	2500
2550	1.3655-4	6.8274-3	1069.3	10.9858	10.3157	9.6457	8.9756	8.5073	1.4096	1.2601	967.0	790	1555	.7161	2550
2600	1.3392-4	6.6961-3	1139.8	11.0132	10.3431	9.6731	9.0030	8.5347	1.4120	1.2596	976.2	800	1579	.7154	2600
2650	1.3140-4	6.5698-3	1210.5	11.0401	10.3700	9.7000	9.0299	8.5616	1.4142	1.2591	985.4	810	1603	.7147	2650
2700	1.2896-4	6.4481-3	1281.2	11.0665	10.3965	9.7264	9.0564	8.5881	1.4164	1.2586	994.4	820	1626	.7141	2700
2750	1.2662-4	6.3309-3	1352.1	11.0925	10.4225	9.7525	9.0824	8.6141	1.4185	1.2581	1003.4	830	1650	.7134	2750
2800	1.2436-4	6.2178-3	1423.1	11.1181	10.4481	9.7780	9.1080	8.6396	1.4205	1.2576	1012.3	839	1673	.7128	2800
2850	1.2218-4	6.1088-3	1494.1	11.1433	10.4732	9.8032	9.1331	8.6648	1.4224	1.2572	1021.1	849	1696	.7122	2850
2900	1.2007-4	6.0034-3	1565.3	11.1680	10.4980	9.8279	9.1579	8.6896	1.4243	1.2568	1029.8	859	1719	.7116	2900
2950	1.1803-4	5.9017-3	1636.6	11.1924	10.5224	9.8523	9.1823	8.7139	1.4261	1.2564	1038.5	868	1742	.7110	2950
3000	1.1607-4	5.8033-3	1707.9	11.2164	10.5463	9.8763	9.2062	8.7379	1.4279	1.2560	1047.1	878	1764	.7104	3000

TABLE 19.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.033812; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE		J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.8689-6	-1133.5	9.6138	28.572	396	1.0000 -1.0000	1.2062	1.3180	587.5	651 .734	1.2059	1.3181	587.5	651 .734
950	3.6653-6	-1072.8	9.6793	28.572	411	1.0000 -1.0000	1.2192	1.3135	602.6	684 .733	1.2186	1.3137	602.6	683 .733
1000	3.4820-6	-1011.5	9.7422	28.572	426	1.0000 -1.0000	1.2315	1.3094	617.3	716 .732	1.2306	1.3097	617.3	716 .732
1050	3.3162-6	-949.7	9.8025	28.572	440	1.0000 -1.0000	1.2429	1.3057	631.6	748 .731	1.2416	1.3061	631.7	747 .731
1100	3.1654-6	-887.3	9.8606	28.572	454	1.0000 -1.0000	1.2541	1.3022	645.6	779 .731	1.2521	1.3028	645.8	778 .731
1150	3.0278-6	-824.3	9.9166	28.572	468	1.0000 -1.0000	1.2650	1.2988	659.3	810 .730	1.2621	1.2996	659.5	808 .730
1200	2.9017-6	-760.8	9.9706	28.572	481	1.0000 -1.0000	1.2757	1.2955	672.6	841 .730	1.2717	1.2967	672.9	839 .730
1250	2.7856-6	-696.7	10.0229	28.572	495	1.0001 -1.0000	1.2864	1.2924	685.6	872 .729	1.2808	1.2940	686.1	868 .729
1300	2.6784-6	-632.1	10.0736	28.572	508	1.0001 -1.0000	1.2973	1.2893	698.4	904 .729	1.2895	1.2914	699.0	898 .729
1350	2.5792-6	-567.0	10.1228	28.572	521	1.0002 -1.0000	1.3085	1.2861	710.8	935 .728	1.2977	1.2891	711.6	927 .729
1400	2.4871-6	-501.3	10.1706	28.571	533	1.0004 -1.0000	1.3203	1.2830	723.0	968 .728	1.3056	1.2868	724.1	956 .728
1450	2.4013-6	-434.9	10.2171	28.571	546	1.0006 -1.0000	1.3332	1.2796	734.8	1002 .727	1.3131	1.2847	736.3	984 .728
1500	2.3212-6	-367.9	10.2626	28.570	558	1.0010 -1.0000	1.3477	1.2761	746.4	1037 .725	1.3202	1.2828	748.3	1013 .728
1550	2.2462-6	-300.1	10.3070	28.569	570	1.0016 -1.0000	1.3647	1.2721	757.5	1077 .723	1.3270	1.2809	760.1	1041 .727
1600	2.1759-6	-231.4	10.3507	28.567	583	1.0026 -1.0001	1.3853	1.2676	768.3	1121 .720	1.3334	1.2792	771.8	1069 .726
1650	2.1097-6	-161.5	10.3937	28.564	594	1.0041 -1.0001	1.4112	1.2624	778.6	1173 .715	1.3395	1.2776	783.3	1097 .726
1700	2.0473-6	-90.1	10.4363	28.560	606	1.0063 -1.0002	1.4447	1.2561	788.5	1236 .709	1.3453	1.2761	794.7	1125 .725
1750	1.9884-6	-16.9	10.4788	28.553	618	1.0097 -1.0002	1.4887	1.2487	797.7	1316 .699	1.3508	1.2748	806.0	1152 .724
1800	1.9325-6	59.0	10.5215	28.544	629	1.0146 -1.0004	1.5473	1.2397	806.2	1419 .686	1.3561	1.2736	817.2	1179 .724
1850	1.8794-6	138.2	10.5649	28.530	641	1.0217 -1.0006	1.6256	1.2293	814.1	1557 .669	1.3610	1.2725	828.3	1206 .723
1900	1.8286-6	222.0	10.6096	28.510	652	1.0318 -1.0009	1.7300	1.2174	821.3	1743 .647	1.3657	1.2715	839.4	1233 .722
1950	1.7800-6	311.8	10.6562	28.481	663	1.0460 -1.0014	1.8678	1.2043	828.0	1996 .620	1.3701	1.2708	850.5	1260 .721
2000	1.7330-6	409.5	10.7057	28.441	674	1.0653 -1.0020	2.0475	1.1905	834.3	2338 .590	1.3742	1.2702	861.8	1287 .720
2050	1.6875-6	517.4	10.7589	28.387	685	1.0911 -1.0029	2.2776	1.1768	840.6	2794 .558	1.3781	1.2699	873.2	1313 .718
2100	1.6431-6	638.2	10.8172	28.314	695	1.1248 -1.0041	2.5662	1.1637	847.1	3393 .526	1.3817	1.2699	884.9	1340 .717
2150	1.5994-6	775.1	10.8815	28.217	705	1.1674 -1.0056	2.9194	1.1520	854.3	4165 .494	1.3851	1.2702	897.0	1367 .714
2200	1.5562-6	931.3	10.9534	28.092	715	1.2198 -1.0076	3.3406	1.1418	862.2	5134 .465	1.3883	1.2709	909.7	1395 .712
2250	1.5130-6	1110.3	11.0338	27.935	725	1.2827 -1.0101	3.8302	1.1335	871.2	6315 .440	1.3913	1.2721	923.0	1424 .708
2300	1.4698-6	1315.4	11.1239	27.740	734	1.3559 -1.0131	4.3858	1.1268	881.4	7711 .418	1.3941	1.2739	937.1	1455 .703
2350	1.4263-6	1549.9	11.2248	27.505	743	1.4393 -1.0166	5.0026	1.1218	892.7	9307 .399	1.3969	1.2762	952.1	1488 .698
2400	1.3824-6	1816.6	11.3370	27.225	752	1.5320 -1.0207	5.6737	1.1181	905.2	11060 .386	1.3996	1.2791	968.2	1525 .690
2450	1.3381-6	2117.9	11.4613	26.901	761	1.6323 -1.0254	6.3877	1.1155	919.1	12898 .377	1.4024	1.2827	985.5	1565 .682
2500	1.2933-6	2455.7	11.5978	26.531	769	1.7373 -1.0304	7.1258	1.1140	934.2	14717 .372	1.4054	1.2870	1004.1	1609 .672
2550	1.2483-6	2830.4	11.7461	26.120	777	1.8423 -1.0357	7.8574	1.1133	950.6	16380 .373	1.4085	1.2920	1024.1	1658 .660
2600	1.2033-6	3240.6	11.9054	25.671	786	1.9402 -1.0409	8.5364	1.1135	968.3	17736 .378	1.4119	1.2977	1045.4	1712 .648
2650	1.1587-6	3682.2	12.0736	25.195	794	2.0224 -1.0456	9.1026	1.1144	987.2	18637 .388	1.4154	1.3040	1067.9	1770 .635
2700	1.1150-6	4147.9	12.2477	24.704	802	2.0794 -1.0494	9.4897	1.1161	1007.1	18973 .401	1.4192	1.3109	1091.4	1831 .622
2750	1.0730-6	4627.2	12.4236	24.213	811	2.1034 -1.0516	9.6402	1.1185	1027.7	18702 .418	1.4230	1.3181	1115.7	1893 .609
2800	1.0331-6	5107.4	12.5966	23.737	819	2.0904 -1.0522	9.5229	1.1217	1048.9	17865 .437	1.4268	1.3254	1140.1	1955 .598
2850	9.9600-7	5575.1	12.7622	23.293	828	2.0419 -1.0509	9.1452	1.1259	1070.2	16580 .457	1.4305	1.3325	1164.3	2015 .588
2900	9.6186-7	6018.3	12.9164	22.889	837	1.9643 -1.0481	8.5511	1.1309	1091.5	15007 .477	1.4340	1.3392	1187.8	2071 .580
2950	9.3085-7	6427.8	13.0564	22.533	847	1.8670 -1.0442	7.8087	1.1371	1112.5	13313 .497	1.4373	1.3454	1210.2	2124 .573
3000	9.0290-7	6797.9	13.1809	22.227	856	1.7599 -1.0395	6.9920	1.1444	1133.3	11638 .514	1.4402	1.3509	1231.2	2172 .568

TABLE 19.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.033812; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8689-5	-1133.5	8.9437	28.572	396	1.0000	-1.0000	1.2062	1.3180	587.5	651	.734	1.2059	1.3181	587.5	651	.734
950	3.6652-5	-1072.8	9.0093	28.572	411	1.0000	-1.0000	1.2192	1.3135	602.6	684	.733	1.2186	1.3137	602.6	683	.733
1000	3.4820-5	-1011.5	9.0721	28.572	426	1.0000	-1.0000	1.2315	1.3094	617.3	716	.732	1.2306	1.3097	617.3	716	.732
1050	3.3162-5	-949.7	9.1325	28.572	440	1.0000	-1.0000	1.2429	1.3057	631.6	748	.731	1.2416	1.3061	631.7	747	.731
1100	3.1654-5	-887.3	9.1905	28.572	454	1.0000	-1.0000	1.2540	1.3022	645.6	779	.731	1.2521	1.3028	645.8	778	.731
1150	3.0278-5	-824.3	9.2465	28.572	468	1.0000	-1.0000	1.2648	1.2988	659.3	810	.730	1.2621	1.2996	659.5	808	.730
1200	2.9017-5	-760.8	9.3006	28.572	481	1.0000	-1.0000	1.2754	1.2956	672.6	841	.730	1.2717	1.2967	672.9	839	.730
1250	2.7856-5	-696.8	9.3529	28.572	495	1.0000	-1.0000	1.2859	1.2925	685.7	872	.729	1.2808	1.2940	686.1	868	.729
1300	2.6784-5	-632.2	9.4035	28.572	508	1.0001	-1.0000	1.2963	1.2895	698.4	903	.729	1.2895	1.2914	699.0	898	.729
1350	2.5792-5	-567.1	9.4526	28.572	521	1.0001	-1.0000	1.3069	1.2865	710.9	934	.729	1.2977	1.2891	711.6	927	.729
1400	2.4871-5	-501.5	9.5003	28.572	533	1.0002	-1.0000	1.3176	1.2836	723.1	965	.728	1.3056	1.2868	724.1	956	.728
1450	2.4013-5	-435.4	9.5468	28.572	546	1.0003	-1.0000	1.3287	1.2806	735.1	997	.728	1.3131	1.2847	736.3	984	.728
1500	2.3212-5	-368.6	9.5920	28.571	558	1.0005	-1.0000	1.3405	1.2776	746.8	1030	.727	1.3202	1.2828	748.3	1013	.728
1550	2.2463-5	-301.3	9.6362	28.571	570	1.0008	-1.0000	1.3532	1.2745	758.2	1064	.725	1.3270	1.2809	760.1	1041	.727
1600	2.1761-5	-233.3	9.6793	28.570	583	1.0012	-1.0000	1.3673	1.2712	769.4	1100	.724	1.3334	1.2792	771.8	1069	.727
1650	2.1100-5	-164.5	9.7217	28.568	595	1.0018	-1.0000	1.3833	1.2676	780.2	1139	.722	1.3395	1.2776	783.3	1097	.726
1700	2.0478-5	-94.9	9.7632	28.567	606	1.0027	-1.0001	1.4021	1.2636	790.7	1182	.719	1.3453	1.2761	794.6	1125	.725
1750	1.9891-5	-24.3	9.8042	28.564	618	1.0039	-1.0001	1.4245	1.2592	800.9	1230	.716	1.3509	1.2747	805.8	1152	.725
1800	1.9336-5	47.6	9.8447	28.560	630	1.0057	-1.0001	1.4520	1.2542	810.7	1286	.711	1.3561	1.2734	816.9	1179	.724
1850	1.8810-5	121.0	9.8849	28.555	641	1.0083	-1.0002	1.4860	1.2484	820.1	1352	.705	1.3611	1.2722	827.8	1206	.723
1900	1.8310-5	196.4	9.9251	28.547	652	1.0119	-1.0003	1.5287	1.2418	829.0	1432	.696	1.3657	1.2711	838.7	1233	.723
1950	1.7834-5	274.1	9.9655	28.536	663	1.0168	-1.0005	1.5826	1.2343	837.4	1531	.686	1.3702	1.2701	849.5	1259	.722
2000	1.7379-5	354.9	10.0064	28.522	674	1.0234	-1.0007	1.6506	1.2259	845.4	1656	.672	1.3744	1.2692	860.2	1286	.721
2050	1.6944-5	439.4	10.0481	28.503	685	1.0323	-1.0010	1.7361	1.2166	853.0	1815	.655	1.3784	1.2684	870.9	1311	.720
2100	1.6526-5	528.8	10.0912	28.477	696	1.0440	-1.0014	1.8428	1.2067	860.2	2017	.636	1.3821	1.2678	881.7	1337	.719
2150	1.6122-5	624.2	10.1360	28.442	707	1.0591	-1.0019	1.9747	1.1963	867.1	2273	.614	1.3856	1.2674	892.5	1363	.719
2200	1.5731-5	726.8	10.1832	28.398	717	1.0782	-1.0026	2.1354	1.1859	874.0	2596	.590	1.3889	1.2671	903.4	1388	.717
2250	1.5350-5	838.2	10.2333	28.341	727	1.1021	-1.0035	2.3281	1.1758	881.0	2998	.565	1.3919	1.2670	914.5	1414	.716
2300	1.4978-5	960.2	10.2869	28.268	737	1.1311	-1.0047	2.5546	1.1664	888.3	3493	.539	1.3948	1.2672	925.9	1439	.714
2350	1.4613-5	1094.3	10.3446	28.179	747	1.1656	-1.0061	2.8158	1.1578	896.0	4092	.514	1.3975	1.2677	937.5	1466	.713
2400	1.4253-5	1242.3	10.4069	28.069	757	1.2059	-1.0077	3.1109	1.1504	904.3	4803	.490	1.3999	1.2684	949.6	1492	.710
2450	1.3896-5	1405.9	10.4743	27.937	766	1.2518	-1.0097	3.4378	1.1441	913.3	5631	.468	1.4022	1.2694	962.1	1520	.707
2500	1.3542-5	1586.6	10.5473	27.781	776	1.3031	-1.0120	3.7935	1.1389	923.1	6576	.447	1.4044	1.2708	975.1	1548	.704
2550	1.3190-5	1785.7	10.6262	27.600	785	1.3596	-1.0146	4.1746	1.1348	933.7	7632	.429	1.4065	1.2726	988.7	1578	.699
2600	1.2839-5	2004.4	10.7111	27.392	794	1.4208	-1.0176	4.5776	1.1316	945.0	8783	.414	1.4085	1.2747	1003.0	1611	.694
2650	1.2489-5	2243.7	10.8023	27.156	803	1.4862	-1.0209	4.9986	1.1292	957.2	10005	.401	1.4106	1.2772	1018.0	1645	.688
2700	1.2139-5	2504.5	10.8997	26.894	811	1.5549	-1.0244	5.4326	1.1276	970.2	11264	.391	1.4126	1.2802	1033.7	1682	.681
2750	1.1790-5	2787.1	11.0034	26.604	820	1.6257	-1.0282	5.8724	1.1266	984.0	12513	.385	1.4147	1.2835	1050.3	1722	.674
2800	1.1442-5	3091.6	11.1132	26.289	828	1.6967	-1.0322	6.3073	1.1263	998.7	13697	.381	1.4169	1.2873	1067.7	1765	.665
2850	1.1097-5	3417.5	11.2285	25.951	837	1.7655	-1.0363	6.7225	1.1265	1014.2	14752	.381	1.4193	1.2916	1086.0	1811	.656
2900	1.0755-5	3763.2	11.3488	25.593	845	1.8287	-1.0402	7.0988	1.1272	1030.5	15615	.384	1.4217	1.2962	1105.1	1861	.646
2950	1.0419-5	4126.3	11.4729	25.221	854	1.8827	-1.0438	7.4136	1.1284	1047.5	16229	.390	1.4243	1.3012	1124.9	1913	.636
3000	1.0091-5	4503.2	11.5996	24.841	863	1.9237	-1.0469	7.6436	1.1301	1065.3	16549	.398	1.4270	1.3064	1145.3	1967	.626

TABLE 19.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.033812; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S	
900	3.8689-4	-1133.4	8.2737	28.572	396	1.0000	-1.0000	1.2062	1.3180	587.5	651 .734	1.2059	1.3181	587.5	651 .734
950	3.6653-4	-1072.8	8.3392	28.572	411	1.0000	-1.0000	1.2192	1.3135	602.6	684 .733	1.2186	1.3137	602.6	683 .733
1000	3.4820-4	-1011.5	8.4021	28.572	426	1.0000	-1.0000	1.2315	1.3094	617.3	716 .732	1.2306	1.3097	617.3	716 .732
1050	3.3162-4	-949.7	8.4624	28.572	440	1.0000	-1.0000	1.2429	1.3057	631.6	748 .731	1.2416	1.3061	631.7	747 .731
1100	3.1654-4	-887.3	8.5205	28.572	454	1.0000	-1.0000	1.2539	1.3022	645.6	779 .731	1.2521	1.3028	645.8	778 .731
1150	3.0278-4	-824.3	8.5765	28.572	468	1.0000	-1.0000	1.2647	1.2989	659.3	810 .730	1.2621	1.2996	659.5	808 .730
1200	2.9017-4	-760.8	8.6305	28.572	481	1.0000	-1.0000	1.2753	1.2957	672.6	841 .730	1.2717	1.2967	672.9	839 .730
1250	2.7856-4	-696.8	8.6828	28.572	495	1.0000	-1.0000	1.2856	1.2926	685.7	872 .729	1.2808	1.2940	686.1	868 .729
1300	2.6784-4	-632.2	8.7334	28.572	508	1.0000	-1.0000	1.2958	1.2896	698.5	902 .729	1.2895	1.2914	699.0	898 .729
1350	2.5792-4	-567.2	8.7825	28.572	521	1.0001	-1.0000	1.3060	1.2867	711.0	933 .729	1.2977	1.2891	711.6	927 .729
1400	2.4871-4	-501.6	8.8302	28.572	533	1.0001	-1.0000	1.3162	1.2839	723.2	964 .728	1.3056	1.2868	724.0	956 .728
1450	2.4013-4	-435.6	8.8766	28.572	546	1.0002	-1.0000	1.3265	1.2811	735.2	995 .728	1.3131	1.2847	736.3	984 .728
1500	2.3213-4	-369.0	8.9217	28.572	558	1.0002	-1.0000	1.3371	1.2784	747.0	1026 .727	1.3202	1.2827	748.3	1013 .728
1550	2.2464-4	-301.9	8.9657	28.571	570	1.0004	-1.0000	1.3480	1.2756	758.5	1059 .726	1.3270	1.2809	760.1	1041 .727
1600	2.1762-4	-234.2	9.0087	28.571	583	1.0006	-1.0000	1.3594	1.2728	769.8	1092 .726	1.3334	1.2792	771.8	1069 .727
1650	2.1102-4	-165.9	9.0507	28.570	595	1.0008	-1.0000	1.3716	1.2699	780.9	1126 .724	1.3395	1.2775	783.2	1097 .726
1700	2.0480-4	-97.0	9.0919	28.569	606	1.0012	-1.0000	1.3848	1.2668	791.7	1161 .723	1.3453	1.2760	794.5	1125 .725
1750	1.9894-4	-27.4	9.1322	28.568	618	1.0017	-1.0000	1.3994	1.2637	802.3	1199 .721	1.3509	1.2746	805.7	1152 .725
1800	1.9341-4	43.0	9.1719	28.567	630	1.0025	-1.0001	1.4157	1.2603	812.6	1239 .719	1.3561	1.2733	816.7	1179 .724
1850	1.8816-4	114.2	9.2109	28.564	641	1.0035	-1.0001	1.4344	1.2567	822.6	1283 .717	1.3611	1.2720	827.6	1206 .723
1900	1.8319-4	186.5	9.2494	28.561	652	1.0049	-1.0001	1.4561	1.2527	832.4	1332 .713	1.3658	1.2709	838.4	1233 .723
1950	1.7847-4	259.9	9.2876	28.557	663	1.0067	-1.0002	1.4816	1.2484	841.9	1386 .709	1.3702	1.2698	849.1	1259 .722
2000	1.7397-4	334.7	9.3254	28.551	675	1.0091	-1.0003	1.5118	1.2436	851.1	1448 .704	1.3745	1.2688	859.6	1285 .721
2050	1.6968-4	411.2	9.3632	28.544	686	1.0123	-1.0004	1.5480	1.2383	859.9	1521 .698	1.3785	1.2679	870.1	1311 .721
2100	1.6559-4	489.6	9.4010	28.534	696	1.0164	-1.0005	1.5913	1.2325	868.5	1606 .690	1.3823	1.2671	880.5	1336 .720
2150	1.6166-4	570.4	9.4391	28.521	707	1.0218	-1.0007	1.6434	1.2262	876.7	1707 .681	1.3858	1.2664	890.9	1362 .720
2200	1.5790-4	654.1	9.4775	28.505	718	1.0286	-1.0009	1.7057	1.2195	884.6	1829 .669	1.3892	1.2658	901.2	1387 .719
2250	1.5428-4	741.2	9.5167	28.484	728	1.0371	-1.0012	1.7800	1.2123	892.3	1975 .656	1.3924	1.2652	911.6	1412 .718
2300	1.5078-4	832.3	9.5567	28.457	739	1.0476	-1.0016	1.8679	1.2048	899.8	2151 .641	1.3954	1.2648	921.9	1436 .717
2350	1.4740-4	928.3	9.5980	28.425	749	1.0605	-1.0022	1.9710	1.1973	907.2	2362 .625	1.3982	1.2645	932.3	1461 .717
2400	1.4413-4	1029.7	9.6407	28.384	759	1.0761	-1.0028	2.0904	1.1897	914.6	2614 .607	1.4008	1.2644	942.8	1486 .716
2450	1.4094-4	1137.6	9.6852	28.334	769	1.0944	-1.0035	2.2270	1.1824	922.0	2912 .588	1.4033	1.2644	953.4	1510 .714
2500	1.3783-4	1252.7	9.7317	28.274	779	1.1158	-1.0044	2.3809	1.1755	929.6	3260 .569	1.4056	1.2646	964.2	1535 .713
2550	1.3478-4	1376.0	9.7805	28.203	788	1.1403	-1.0055	2.5516	1.1692	937.5	3664 .549	1.4077	1.2649	975.1	1560 .711
2600	1.3180-4	1508.1	9.8318	28.119	798	1.1678	-1.0068	2.7379	1.1635	945.8	4126 .529	1.4097	1.2654	986.3	1586 .709
2650	1.2886-4	1650.0	9.8858	28.021	807	1.1983	-1.0082	2.9383	1.1585	954.4	4648 .510	1.4115	1.2662	997.8	1612 .707
2700	1.2597-4	1802.2	9.9427	27.909	817	1.2315	-1.0098	3.1507	1.1542	963.5	5229 .492	1.4132	1.2671	1009.6	1638 .705
2750	1.2311-4	1965.2	10.0026	27.781	826	1.2673	-1.0116	3.3730	1.1507	973.1	5869 .475	1.4149	1.2683	1021.7	1665 .702
2800	1.2029-4	2139.6	10.0654	27.639	835	1.3054	-1.0135	3.6032	1.1477	983.2	6562 .458	1.4164	1.2697	1034.1	1693 .698
2850	1.1751-4	2325.6	10.1312	27.480	844	1.3455	-1.0157	3.8395	1.1454	993.8	7305 .444	1.4179	1.2713	1047.0	1722 .695
2900	1.1475-4	2523.6	10.2001	27.306	853	1.3874	-1.0180	4.0804	1.1437	1005.0	8088 .430	1.4194	1.2731	1060.3	1753 .691
2950	1.1202-4	2733.7	10.2719	27.115	862	1.4309	-1.0205	4.3245	1.1425	1016.6	8900 .419	1.4208	1.2752	1074.0	1785 .686
3000	1.0931-4	2956.1	10.3467	26.910	870	1.4756	-1.0231	4.5698	1.1417	1028.7	9725 .409	1.4223	1.2775	1088.2	1818 .681

TABLE 19.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.033812; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8689-3	-1133.4	7.6036	28.572	396	1.0000	-1.0000	1.2062	1.3179	587.5	651	.734	1.2059	1.3181	587.5	651	.734
950	3.6653-3	-1072.8	7.6692	28.572	411	1.0000	-1.0000	1.2192	1.3135	602.6	684	.733	1.2186	1.3137	602.6	683	.733
1000	3.4820-3	-1011.5	7.7320	28.572	426	1.0000	-1.0000	1.2315	1.3094	617.3	716	.732	1.2306	1.3097	617.3	716	.732
1050	3.3162-3	-949.7	7.7924	28.572	440	1.0000	-1.0000	1.2429	1.3057	631.6	748	.731	1.2416	1.3061	631.7	747	.731
1100	3.1655-3	-887.3	7.8505	28.572	454	1.0000	-1.0000	1.2539	1.3022	645.6	779	.731	1.2521	1.3028	645.8	778	.731
1150	3.0278-3	-824.3	7.9064	28.572	468	1.0000	-1.0000	1.2647	1.2989	659.3	810	.730	1.2621	1.2996	659.5	808	.730
1200	2.9017-3	-760.8	7.9605	28.572	481	1.0000	-1.0000	1.2752	1.2957	672.6	841	.730	1.2717	1.2967	672.9	839	.730
1250	2.7856-3	-696.8	8.0127	28.572	495	1.0000	-1.0000	1.2855	1.2926	685.7	871	.730	1.2808	1.2940	686.1	868	.729
1300	2.6785-3	-632.3	8.0634	28.572	508	1.0000	-1.0000	1.2956	1.2897	698.5	902	.729	1.2895	1.2914	699.0	898	.729
1350	2.5793-3	-567.2	8.1124	28.572	521	1.0000	-1.0000	1.3056	1.2868	711.0	933	.729	1.2977	1.2890	711.6	927	.729
1400	2.4871-3	-501.7	8.1601	28.572	533	1.0000	-1.0000	1.3155	1.2841	723.3	963	.728	1.3056	1.2868	724.0	956	.728
1450	2.4014-3	-435.7	8.2064	28.572	546	1.0001	-1.0000	1.3254	1.2814	735.3	994	.728	1.3131	1.2847	736.3	984	.728
1500	2.3213-3	-369.2	8.2515	28.572	558	1.0001	-1.0000	1.3354	1.2787	747.1	1025	.728	1.3202	1.2827	748.3	1013	.728
1550	2.2464-3	-302.1	8.2955	28.572	570	1.0002	-1.0000	1.3454	1.2761	758.7	1056	.727	1.3270	1.2809	760.1	1041	.727
1600	2.1762-3	-234.6	8.3384	28.572	583	1.0003	-1.0000	1.3557	1.2735	770.0	1088	.726	1.3334	1.2792	771.7	1069	.727
1650	2.1102-3	-166.6	8.3802	28.571	595	1.0004	-1.0000	1.3662	1.2709	781.2	1120	.725	1.3395	1.2775	783.2	1097	.726
1700	2.0481-3	-98.0	8.4212	28.571	606	1.0006	-1.0000	1.3771	1.2683	792.1	1153	.724	1.3453	1.2760	794.5	1125	.725
1750	1.9896-3	-28.8	8.4613	28.570	618	1.0008	-1.0000	1.3885	1.2657	802.9	1186	.723	1.3509	1.2746	805.7	1152	.725
1800	1.9343-3	40.9	8.5006	28.570	630	1.0012	-1.0000	1.4006	1.2630	813.4	1221	.722	1.3561	1.2732	816.7	1179	.724
1850	1.8819-3	111.2	8.5391	28.568	641	1.0016	-1.0000	1.4135	1.2602	823.7	1257	.721	1.3611	1.2720	827.6	1206	.723
1900	1.8323-3	182.3	8.5770	28.567	652	1.0022	-1.0001	1.4275	1.2574	833.9	1295	.719	1.3658	1.2708	838.3	1233	.723
1950	1.7852-3	254.0	8.6143	28.565	664	1.0029	-1.0001	1.4428	1.2544	843.8	1335	.717	1.3703	1.2697	848.9	1259	.722
2000	1.7404-3	326.6	8.6510	28.563	675	1.0039	-1.0001	1.4597	1.2513	853.5	1377	.715	1.3745	1.2687	859.4	1285	.721
2050	1.6978-3	400.0	8.6873	28.560	686	1.0051	-1.0002	1.4787	1.2480	863.0	1423	.713	1.3785	1.2677	869.8	1311	.721
2100	1.6571-3	474.5	8.7232	28.556	696	1.0067	-1.0002	1.5001	1.2445	872.3	1472	.710	1.3823	1.2668	880.1	1336	.721
2150	1.6183-3	550.1	8.7587	28.550	707	1.0087	-1.0003	1.5244	1.2408	881.4	1527	.706	1.3859	1.2660	890.3	1361	.720
2200	1.5812-3	627.0	8.7941	28.544	718	1.0112	-1.0004	1.5521	1.2369	890.3	1588	.702	1.3894	1.2653	900.5	1386	.719
2250	1.5456-3	705.3	8.8293	28.536	729	1.0143	-1.0005	1.5840	1.2327	899.0	1657	.696	1.3926	1.2646	910.5	1411	.719
2300	1.5115-3	785.4	8.8645	28.526	739	1.0181	-1.0006	1.6205	1.2282	907.4	1735	.690	1.3957	1.2640	920.5	1436	.718
2350	1.4786-3	867.5	8.8998	28.513	749	1.0228	-1.0008	1.6625	1.2235	915.7	1823	.683	1.3986	1.2634	930.5	1460	.718
2400	1.4471-3	951.8	8.9353	28.498	760	1.0284	-1.0010	1.7106	1.2186	923.7	1925	.675	1.4013	1.2630	940.4	1484	.717
2450	1.4166-3	1038.7	8.9711	28.479	770	1.0352	-1.0013	1.7655	1.2135	931.6	2041	.666	1.4039	1.2626	950.3	1509	.716
2500	1.3872-3	1128.5	9.0074	28.457	780	1.0433	-1.0016	1.8278	1.2083	939.4	2174	.656	1.4063	1.2622	960.2	1533	.716
2550	1.3587-3	1221.6	9.0443	28.430	790	1.0527	-1.0020	1.8981	1.2030	947.2	2328	.644	1.4086	1.2620	970.1	1557	.715
2600	1.3311-3	1318.4	9.0819	28.398	800	1.0637	-1.0025	1.9766	1.1977	954.9	2502	.632	1.4107	1.2619	980.1	1581	.714
2650	1.3042-3	1419.4	9.1204	28.360	810	1.0763	-1.0031	2.0636	1.1926	962.6	2700	.619	1.4127	1.2619	990.1	1605	.712
2700	1.2781-3	1524.9	9.1598	28.316	819	1.0905	-1.0037	2.1589	1.1877	970.3	2924	.605	1.4146	1.2619	1000.2	1629	.711
2750	1.2526-3	1635.4	9.2003	28.265	829	1.1063	-1.0045	2.2622	1.1830	978.2	3174	.591	1.4164	1.2621	1010.4	1653	.710
2800	1.2277-3	1751.3	9.2421	28.207	838	1.1238	-1.0053	2.3727	1.1787	986.3	3452	.576	1.4180	1.2624	1020.8	1677	.709
2850	1.2033-3	1872.8	9.2851	28.140	848	1.1428	-1.0063	2.4895	1.1747	994.6	3759	.561	1.4196	1.2628	1031.2	1702	.707
2900	1.1794-3	2000.3	9.3295	28.065	857	1.1633	-1.0073	2.6117	1.1712	1003.1	4094	.547	1.4210	1.2634	1041.8	1726	.705
2950	1.1560-3	2134.0	9.3752	27.982	866	1.1851	-1.0085	2.7379	1.1682	1011.9	4457	.532	1.4224	1.2641	1052.6	1751	.704
3000	1.1329-3	2274.1	9.4223	27.890	875	1.2080	-1.0097	2.8670	1.1655	1021.0	4848	.518	1.4237	1.2649	1063.6	1776	.702

TABLE 19.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.033812; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9344-2	-1133.4	7.1353	28.572	396	1.0000	-1.0000	1.2062	1.3179	587.5	651	.734	1.2059	1.3181	587.5	651	.734
950	1.8326-2	-1072.8	7.2008	28.572	411	1.0000	-1.0000	1.2192	1.3135	602.6	684	.733	1.2186	1.3137	602.6	683	.733
1000	1.7410-2	-1011.5	7.2637	28.572	426	1.0000	-1.0000	1.2315	1.3094	617.3	716	.732	1.2306	1.3097	617.3	716	.732
1050	1.6581-2	-949.7	7.3240	28.572	440	1.0000	-1.0000	1.2429	1.3057	631.6	748	.731	1.2416	1.3061	631.7	747	.731
1100	1.5827-2	-887.3	7.3821	28.572	454	1.0000	-1.0000	1.2539	1.3022	645.6	779	.731	1.2521	1.3028	645.8	778	.731
1150	1.5139-2	-824.3	7.4381	28.572	468	1.0000	-1.0000	1.2647	1.2988	659.3	810	.730	1.2621	1.2996	659.5	808	.730
1200	1.4508-2	-760.8	7.4921	28.572	481	1.0000	-1.0000	1.2752	1.2957	672.6	841	.730	1.2717	1.2967	672.9	839	.730
1250	1.3928-2	-696.8	7.5444	28.572	495	1.0000	-1.0000	1.2854	1.2926	685.7	871	.730	1.2808	1.2940	686.1	868	.729
1300	1.3392-2	-632.3	7.5950	28.572	508	1.0000	-1.0000	1.2955	1.2897	698.5	902	.729	1.2895	1.2914	699.0	898	.729
1350	1.2896-2	-567.2	7.6441	28.572	521	1.0000	-1.0000	1.3054	1.2868	711.0	932	.729	1.2977	1.2890	711.6	927	.729
1400	1.2436-2	-501.7	7.6917	28.572	533	1.0000	-1.0000	1.3152	1.2841	723.3	963	.729	1.3056	1.2868	724.0	956	.728
1450	1.2007-2	-435.7	7.7381	28.572	546	1.0000	-1.0000	1.3250	1.2814	735.3	993	.728	1.3131	1.2847	736.3	984	.728
1500	1.1607-2	-369.2	7.7832	28.572	558	1.0001	-1.0000	1.3347	1.2788	747.1	1024	.728	1.3202	1.2827	748.3	1013	.728
1550	1.1232-2	-302.2	7.8271	28.572	570	1.0001	-1.0000	1.3445	1.2763	758.7	1055	.727	1.3270	1.2809	760.1	1041	.727
1600	1.0881-2	-234.8	7.8699	28.572	583	1.0002	-1.0000	1.3543	1.2738	770.1	1086	.726	1.3334	1.2792	771.7	1069	.727
1650	1.0551-2	-166.8	7.9117	28.572	595	1.0002	-1.0000	1.3642	1.2713	781.3	1118	.726	1.3395	1.2775	783.2	1097	.726
1700	1.0241-2	-98.3	7.9526	28.572	606	1.0003	-1.0000	1.3743	1.2688	792.3	1150	.725	1.3453	1.2760	794.5	1125	.725
1750	9.9483-3	-29.4	7.9926	28.571	618	1.0005	-1.0000	1.3846	1.2664	803.1	1182	.724	1.3509	1.2746	805.7	1152	.725
1800	9.6718-3	40.1	8.0318	28.571	630	1.0007	-1.0000	1.3953	1.2639	813.7	1215	.723	1.3561	1.2732	816.7	1179	.724
1850	9.4102-3	110.2	8.0701	28.570	641	1.0009	-1.0000	1.4064	1.2615	824.1	1249	.722	1.3611	1.2720	827.5	1206	.723
1900	9.1623-3	180.8	8.1078	28.569	652	1.0013	-1.0000	1.4179	1.2590	834.4	1283	.721	1.3658	1.2708	838.3	1233	.723
1950	8.9270-3	252.0	8.1448	28.568	664	1.0017	-1.0001	1.4301	1.2565	844.4	1319	.720	1.3703	1.2697	848.9	1259	.722
2000	8.7034-3	323.8	8.1812	28.567	675	1.0022	-1.0001	1.4431	1.2539	854.3	1356	.718	1.3745	1.2686	859.3	1285	.722
2050	8.4906-3	396.3	8.2170	28.565	686	1.0029	-1.0001	1.4570	1.2513	864.1	1394	.717	1.3785	1.2677	869.7	1311	.721
2100	8.2878-3	469.5	8.2522	28.563	697	1.0037	-1.0001	1.4720	1.2486	873.6	1434	.715	1.3824	1.2667	880.0	1336	.721
2150	8.0942-3	543.5	8.2871	28.560	707	1.0048	-1.0002	1.4884	1.2458	883.0	1477	.713	1.3860	1.2659	890.1	1361	.720
2200	7.9093-3	618.4	8.3215	28.557	718	1.0061	-1.0002	1.5063	1.2429	892.3	1522	.711	1.3894	1.2651	900.2	1386	.720
2250	7.7323-3	694.2	8.3556	28.552	729	1.0077	-1.0003	1.5262	1.2399	901.3	1571	.708	1.3927	1.2644	910.2	1411	.719
2300	7.5628-3	771.0	8.3893	28.547	739	1.0096	-1.0003	1.5482	1.2367	910.2	1624	.705	1.3957	1.2637	920.1	1436	.719
2350	7.4002-3	849.0	8.4229	28.540	750	1.0120	-1.0004	1.5727	1.2335	918.9	1682	.701	1.3987	1.2631	929.9	1460	.718
2400	7.2440-3	928.3	8.4563	28.532	760	1.0148	-1.0005	1.6000	1.2300	927.5	1745	.697	1.4014	1.2625	939.7	1484	.717
2450	7.0938-3	1009.1	8.4896	28.522	770	1.0182	-1.0007	1.6306	1.2265	935.9	1815	.692	1.4041	1.2620	949.4	1508	.717
2500	6.9491-3	1091.5	8.5229	28.511	780	1.0222	-1.0008	1.6648	1.2228	944.2	1893	.686	1.4065	1.2616	959.0	1532	.716
2550	6.8095-3	1175.6	8.5562	28.497	790	1.0269	-1.0010	1.7029	1.2190	952.3	1979	.680	1.4089	1.2612	968.7	1556	.715
2600	6.6747-3	1261.8	8.5897	28.481	800	1.0324	-1.0013	1.7453	1.2151	960.4	2076	.673	1.4111	1.2608	978.3	1580	.715
2650	6.5443-3	1350.2	8.6234	28.461	810	1.0388	-1.0015	1.7922	1.2112	968.3	2183	.665	1.4132	1.2606	987.9	1604	.714
2700	6.4181-3	1441.1	8.6573	28.439	820	1.0461	-1.0019	1.8440	1.2072	976.2	2303	.657	1.4152	1.2604	997.5	1628	.713
2750	6.2956-3	1534.7	8.6917	28.413	830	1.0544	-1.0023	1.9007	1.2032	984.0	2436	.647	1.4171	1.2602	1007.1	1651	.712
2800	6.1766-3	1631.3	8.7265	28.383	839	1.0638	-1.0027	1.9624	1.1994	991.8	2583	.638	1.4188	1.2602	1016.7	1675	.711
2850	6.0608-3	1731.0	8.7618	28.348	849	1.0742	-1.0032	2.0289	1.1956	999.7	2745	.627	1.4205	1.2602	1026.4	1698	.710
2900	5.9481-3	1834.2	8.7977	28.309	858	1.0856	-1.0038	2.1000	1.1920	1007.6	2923	.617	1.4221	1.2603	1036.1	1722	.709
2950	5.8381-3	1941.1	8.8342	28.264	868	1.0981	-1.0044	2.1754	1.1886	1015.6	3117	.606	1.4236	1.2605	1045.9	1745	.708
3000	5.7307-3	2051.8	8.8714	28.215	877	1.1116	-1.0051	2.2544	1.1854	1023.7	3327	.594	1.4250	1.2607	1055.7	1769	.707

TABLE 19C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.033812; EQUIV.RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.940-5	-2095.6	7.2193	28.572	1.0654	1.814-5	29.777	131	1.000	-1.000	0.9889	1.3935	279	176	.734	200
220	1.759-5	-2071.1	7.3360	28.572	1.5714	1.648-5	29.748	142	1.000	-1.000	0.9911	1.3928	293	192	.731	220
240	1.573-5	-2010.2	7.5984	28.572	5.9039	1.496-5	29.463	150	1.000	-1.000	1.0052	1.3903	307	205	.735	240
						PRESSURE = 0.10 ATM										
200	1.940-4	-2095.9	6.6168	28.572	1.0300	1.814-4	29.778	131	1.000	-1.000	0.9888	1.3935	279	176	.734	200
220	1.763-4	-2074.9	6.7169	28.572	1.0896	1.649-4	29.775	142	1.000	-1.000	0.9899	1.3929	293	193	.730	220
240	1.612-4	-2050.1	6.8243	28.572	1.5097	1.510-4	29.747	153	1.000	-1.000	0.9924	1.3920	306	208	.727	240
260	1.464-4	-2001.9	7.0161	28.572	3.9800	1.385-4	29.552	161	1.000	-1.000	1.0029	1.3899	319	222	.730	260
280	1.251-4	-1837.7	7.6202	28.572	12.6161	1.246-4	28.632	163	1.000	-1.000	1.0478	1.3834	335	228	.750	280
						PRESSURE = 1.00 ATM										
200	1.940-3	-2095.9	6.0154	28.572	1.0265	1.815-3	29.779	131	1.000	-1.000	0.9888	1.3935	279	176	.734	200
220	1.763-3	-2075.2	6.1138	28.572	1.0417	1.650-3	29.778	142	1.000	-1.000	0.9897	1.3930	293	193	.730	220
240	1.616-3	-2054.0	6.2061	28.572	1.0933	1.512-3	29.775	153	1.000	-1.000	0.9912	1.3922	305	209	.726	240
260	1.489-3	-2030.3	6.3009	28.572	1.3408	1.395-3	29.756	163	1.000	-1.000	0.9937	1.3912	318	224	.724	260
280	1.372-3	-1975.8	6.5017	28.572	2.1493	1.291-3	29.664	172	1.000	-1.000	0.9999	1.3895	330	238	.725	280
298	1.261-3	-1923.4	6.6824	28.572	3.8898	1.202-3	29.412	179	1.000	-1.000	1.0135	1.3868	342	249	.730	298
300	1.248-3	-1915.9	6.7073	28.572	4.1748	1.193-3	29.370	180	1.000	-1.000	1.0156	1.3864	343	250	.731	300
320	1.088-3	-1786.7	7.1224	28.572	1.0562	1.088-3	28.572	182	1.000	-1.000	1.0562	1.3803	359	256	.750	320
						PRESSURE = 10.00 ATM										
200	1.937-2	-2095.9	5.4140	28.572	1.0261	1.815-2	29.779	131	1.000	-1.000	0.9888	1.3935	279	176	.734	200
220	1.761-2	-2075.3	5.5123	28.572	1.0369	1.650-2	29.779	142	1.000	-1.000	0.9897	1.3930	293	193	.730	220
240	1.615-2	-2054.4	5.6031	28.572	1.0518	1.512-2	29.778	153	1.000	-1.000	0.9911	1.3922	305	209	.726	240
260	1.490-2	-2033.1	5.6884	28.572	1.0868	1.396-2	29.776	163	1.000	-1.000	0.9928	1.3913	318	224	.724	260
280	1.383-2	-1988.2	5.8535	28.572	1.2954	1.296-2	29.767	173	1.000	-1.000	0.9953	1.3901	330	239	.722	280
298	1.296-2	-1963.5	5.9392	28.572	1.4566	1.216-2	29.742	182	1.000	-1.000	0.9986	1.3888	340	252	.722	298
300	1.288-2	-1960.7	5.9483	28.572	1.4817	1.208-2	29.738	183	1.000	-1.000	0.9990	1.3886	341	253	.722	300
320	1.199-2	-1927.3	6.0559	28.572	1.9147	1.129-2	29.657	192	1.000	-1.000	1.0053	1.3867	353	266	.724	320
340	1.110-2	-1881.1	6.1958	28.572	2.8095	1.056-2	29.466	199	1.000	-1.000	1.0170	1.3840	364	278	.729	340
360	1.012-2	-1809.4	6.4004	28.572	4.5570	9.840-3	29.067	205	1.000	-1.000	1.0390	1.3799	377	288	.738	360
380	9.163-3	-1723.1	6.6347	28.572	1.0667	9.163-3	28.572	209	1.000	-1.000	1.0667	1.3751	390	298	.748	380
						PRESSURE = 50.00 ATM										
200	9.634-2	-2095.9	4.9937	28.572	1.0261	9.073-2	29.778	131	1.000	-1.000	0.9888	1.3935	279	176	.734	200
220	8.763-2	-2075.3	5.0920	28.572	1.0365	8.248-2	29.779	142	1.000	-1.000	0.9897	1.3930	293	193	.730	220
240	8.037-2	-2054.4	5.1826	28.572	1.0482	7.560-2	29.778	153	1.000	-1.000	0.9911	1.3922	305	209	.726	240
260	7.422-2	-2033.3	5.2671	28.572	1.0643	6.979-2	29.778	163	1.000	-1.000	0.9928	1.3913	318	224	.724	260
280	6.896-2	-1989.3	5.4291	28.572	1.2209	6.480-2	29.776	173	1.000	-1.000	0.9949	1.3902	330	239	.722	280
298	6.475-2	-1966.9	5.5067	28.572	1.2534	6.084-2	29.771	182	1.000	-1.000	0.9972	1.3890	340	252	.721	298
300	6.435-2	-1964.6	5.5144	28.572	1.2585	6.047-2	29.770	183	1.000	-1.000	0.9975	1.3888	341	254	.721	300
320	6.026-2	-1938.7	5.5981	28.572	1.3447	5.666-2	29.754	193	1.000	-1.000	1.0009	1.3873	352	267	.721	320
340	5.655-2	-1910.2	5.6842	28.572	1.5150	5.326-2	29.716	201	1.000	-1.000	1.0056	1.3855	363	280	.723	340
360	5.307-2	-1877.2	5.7785	28.572	1.8169	5.016-2	29.636	210	1.000	-1.000	1.0125	1.3833	374	293	.725	360
380	4.965-2	-1836.3	5.8890	28.572	2.3124	4.728-2	29.486	217	1.000	-1.000	1.0230	1.3805	385	305	.729	380
400	4.614-2	-1782.8	6.0259	28.572	3.0885	4.452-2	29.226	224	1.000	-1.000	1.0390	1.3770	396	317	.734	400
420	4.235-2	-1710.0	6.2035	28.572	4.2857	4.179-2	28.808	229	1.000	-1.000	1.0634	1.3725	408	328	.742	420

TABLE 20A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.050718; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.6252;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .10097; H2O= .12962; N2= .71304; O2= .04782; AR= .00855

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7442-3	8.7211-2	-2586.7	7.9516	7.2828	6.6140	5.9452	5.4778	1.0502	1.3823	283.4	116	155	.7826	200
210	1.6612-3	8.3058-2	-2576.2	8.0029	7.3341	6.6653	5.9965	5.5290	1.0512	1.3818	290.3	121	164	.7783	210
220	1.5857-3	7.9283-2	-2565.6	8.0518	7.3830	6.7142	6.0454	5.5779	1.0523	1.3812	297.1	127	172	.7744	220
230	1.5167-3	7.5836-2	-2555.1	8.0986	7.4298	6.7610	6.0922	5.6247	1.0535	1.3806	303.7	132	180	.7710	230
240	1.4535-3	7.2676-2	-2544.6	8.1435	7.4747	6.8059	6.1371	5.6696	1.0548	1.3800	310.2	137	189	.7680	240
250	1.3954-3	6.9769-2	-2534.0	8.1866	7.5178	6.8490	6.1802	5.7127	1.0562	1.3793	316.5	143	197	.7655	250
260	1.3417-3	6.7086-2	-2523.4	8.2280	7.5592	6.8904	6.2216	5.7542	1.0577	1.3786	322.7	148	205	.7634	260
270	1.2920-3	6.4601-2	-2512.9	8.2680	7.5992	6.9304	6.2616	5.7941	1.0593	1.3778	328.7	153	213	.7617	270
280	1.2459-3	6.2294-2	-2502.3	8.3065	7.6377	6.9689	6.3001	5.8327	1.0609	1.3770	334.6	158	220	.7603	280
290	1.2029-3	6.0146-2	-2491.6	8.3438	7.6750	7.0062	6.3374	5.8699	1.0626	1.3762	340.5	163	228	.7593	290
298	1.1700-3	5.8502-2	-2483.0	8.3733	7.7045	7.0357	6.3669	5.8994	1.0640	1.3755	345.1	167	234	.7587	298
300	1.1628-3	5.8141-2	-2481.0	8.3798	7.7110	7.0422	6.3734	5.9060	1.0644	1.3753	346.2	168	236	.7586	300
310	1.1253-3	5.6265-2	-2470.3	8.4148	7.7460	7.0772	6.4084	5.9409	1.0662	1.3744	351.8	173	243	.7585	310
320	1.0901-3	5.4507-2	-2459.7	8.4487	7.7799	7.1111	6.4423	5.9748	1.0682	1.3735	357.3	177	250	.7585	320
330	1.0571-3	5.2855-2	-2449.0	8.4816	7.8128	7.1440	6.4751	6.0077	1.0701	1.3725	362.7	182	257	.7587	330
340	1.0260-3	5.1301-2	-2438.3	8.5135	7.8447	7.1759	6.5071	6.0397	1.0722	1.3716	368.0	187	264	.7588	340
350	9.9670-4	4.9835-2	-2427.5	8.5446	7.8758	7.2070	6.5382	6.0708	1.0743	1.3705	373.3	192	271	.7589	350
360	9.6902-4	4.8451-2	-2416.8	8.5749	7.9061	7.2373	6.5685	6.1011	1.0765	1.3695	378.4	196	278	.7583	360
370	9.4283-4	4.7141-2	-2406.0	8.6045	7.9357	7.2669	6.5981	6.1306	1.0787	1.3685	383.5	201	286	.7576	370
380	9.1801-4	4.5901-2	-2395.2	8.6333	7.9645	7.2957	6.6269	6.1594	1.0810	1.3674	388.5	205	293	.7569	380
390	8.9448-4	4.4724-2	-2384.4	8.6614	7.9926	7.3238	6.6550	6.1875	1.0834	1.3663	393.4	210	300	.7561	390
400	8.7211-4	4.3606-2	-2373.5	8.6888	8.0200	7.3512	6.6824	6.2150	1.0858	1.3652	398.3	214	308	.7553	400
410	8.5084-4	4.2542-2	-2362.7	8.7157	8.0469	7.3781	6.7093	6.2418	1.0882	1.3641	403.0	218	315	.7549	410
420	8.3058-4	4.1529-2	-2351.8	8.7419	8.0731	7.4043	6.7355	6.2680	1.0907	1.3630	407.8	223	322	.7546	420
430	8.1127-4	4.0563-2	-2340.9	8.7676	8.0988	7.4300	6.7612	6.2937	1.0932	1.3618	412.4	227	329	.7543	430
440	7.9283-4	3.9642-2	-2329.9	8.7928	8.1240	7.4552	6.7864	6.3189	1.0958	1.3607	417.0	231	336	.7542	440
450	7.7521-4	3.8761-2	-2318.9	8.8174	8.1486	7.4798	6.8110	6.3436	1.0984	1.3595	421.5	235	342	.7540	450
460	7.5836-4	3.7918-2	-2307.9	8.8416	8.1728	7.5040	6.8352	6.3677	1.1011	1.3583	426.0	239	349	.7540	460
470	7.4222-4	3.7111-2	-2296.9	8.8653	8.1965	7.5277	6.8589	6.3914	1.1038	1.3571	430.4	243	356	.7540	470
480	7.2676-4	3.6338-2	-2285.9	8.8886	8.2198	7.5510	6.8822	6.4147	1.1065	1.3559	434.8	247	363	.7540	480
490	7.1193-4	3.5597-2	-2274.8	8.9114	8.2426	7.5738	6.9050	6.4375	1.1093	1.3547	439.1	251	369	.7541	490
500	6.9769-4	3.4885-2	-2263.7	8.9339	8.2651	7.5963	6.9275	6.4600	1.1121	1.3535	443.4	255	376	.7541	500
510	6.8401-4	3.4201-2	-2252.5	8.9559	8.2871	7.6183	6.9495	6.4820	1.1149	1.3523	447.6	259	383	.7539	510
520	6.7086-4	3.3543-2	-2241.4	8.9776	8.3088	7.6400	6.9712	6.5037	1.1178	1.3511	451.7	263	390	.7537	520
530	6.5820-4	3.2910-2	-2230.2	8.9989	8.3301	7.6613	6.9925	6.5250	1.1207	1.3499	455.9	267	397	.7534	530
540	6.4601-4	3.2301-2	-2219.0	9.0199	8.3511	7.6823	7.0135	6.5460	1.1236	1.3486	459.9	271	404	.7531	540
550	6.3426-4	3.1713-2	-2207.7	9.0405	8.3717	7.7029	7.0341	6.5667	1.1265	1.3474	464.0	274	411	.7528	550
560	6.2294-4	3.1147-2	-2196.4	9.0609	8.3921	7.7233	7.0545	6.5870	1.1294	1.3462	467.9	278	418	.7525	560
570	6.1201-4	3.0601-2	-2185.1	9.0809	8.4121	7.7433	7.0745	6.6070	1.1324	1.3450	471.9	282	424	.7521	570
580	6.0146-4	3.0073-2	-2173.8	9.1006	8.4318	7.7630	7.0942	6.6267	1.1354	1.3438	475.8	286	431	.7518	580
590	5.9126-4	2.9563-2	-2162.4	9.1200	8.4512	7.7824	7.1136	6.6461	1.1384	1.3425	479.7	289	438	.7514	590

TABLE 20A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.050718; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.6252;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .10097; H2O= .12962; N2= .71304; O2= .04782; AR= .00855

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8141-4	2.9070-2	-2151.0	9.1392	8.4704	7.8016	7.1328	6.6653	1.1414	1.3413	483.5	293	445	.7510	600
610	5.7188-4	2.8594-2	-2139.6	9.1581	8.4893	7.8205	7.1517	6.6842	1.1444	1.3401	487.3	297	452	.7506	610
620	5.6265-4	2.8133-2	-2128.1	9.1767	8.5079	7.8391	7.1703	6.7028	1.1475	1.3389	491.0	300	459	.7501	620
630	5.5372-4	2.7686-2	-2116.6	9.1951	8.5263	7.8575	7.1887	6.7212	1.1505	1.3377	494.8	304	466	.7497	630
640	5.4507-4	2.7254-2	-2105.1	9.2132	8.5444	7.8756	7.2068	6.7394	1.1536	1.3365	498.4	308	473	.7492	640
650	5.3669-4	2.6834-2	-2093.6	9.2312	8.5624	7.8935	7.2247	6.7573	1.1566	1.3353	502.1	311	480	.7488	650
660	5.2855-4	2.6428-2	-2082.0	9.2488	8.5800	7.9112	7.2424	6.7750	1.1597	1.3342	505.7	315	488	.7483	660
670	5.2066-4	2.6033-2	-2070.4	9.2663	8.5975	7.9287	7.2599	6.7924	1.1628	1.3330	509.3	318	495	.7478	670
680	5.1301-4	2.5650-2	-2058.7	9.2835	8.6147	7.9459	7.2771	6.8097	1.1658	1.3318	512.9	322	502	.7474	680
690	5.0557-4	2.5279-2	-2047.1	9.3006	8.6318	7.9630	7.2942	6.8267	1.1689	1.3307	516.4	325	509	.7469	690
700	4.9835-4	2.4918-2	-2035.4	9.3174	8.6486	7.9798	7.3110	6.8435	1.1720	1.3295	519.9	329	516	.7465	700
710	4.9133-4	2.4567-2	-2023.6	9.3341	8.6653	7.9965	7.3277	6.8602	1.1750	1.3284	523.4	332	523	.7460	710
720	4.8451-4	2.4225-2	-2011.9	9.3505	8.6817	8.0129	7.3441	6.8766	1.1781	1.3272	526.8	335	530	.7456	720
730	4.7787-4	2.3894-2	-2000.1	9.3668	8.6980	8.0292	7.3604	6.8929	1.1811	1.3261	530.3	339	537	.7451	730
740	4.7141-4	2.3571-2	-1988.2	9.3829	8.7141	8.0453	7.3765	6.9090	1.1842	1.3250	533.7	342	544	.7447	740
750	4.6513-4	2.3256-2	-1976.4	9.3988	8.7300	8.0612	7.3924	6.9249	1.1872	1.3239	537.0	345	551	.7443	750
760	4.5901-4	2.2950-2	-1964.5	9.4146	8.7458	8.0769	7.4081	6.9407	1.1903	1.3228	540.4	349	558	.7438	760
770	4.5305-4	2.2652-2	-1952.6	9.4301	8.7613	8.0925	7.4237	6.9562	1.1933	1.3217	543.7	352	565	.7434	770
780	4.4724-4	2.2362-2	-1940.6	9.4456	8.7767	8.1079	7.4391	6.9717	1.1963	1.3207	547.0	355	572	.7430	780
790	4.4158-4	2.2079-2	-1928.6	9.4608	8.7920	8.1232	7.4544	6.9869	1.1993	1.3196	550.3	359	579	.7426	790
800	4.3606-4	2.1803-2	-1916.6	9.4759	8.8071	8.1383	7.4695	7.0020	1.2023	1.3185	553.5	362	586	.7422	800
810	4.3067-4	2.1534-2	-1904.6	9.4909	8.8221	8.1533	7.4845	7.0170	1.2052	1.3175	556.8	365	593	.7419	810
820	4.2542-4	2.1271-2	-1892.5	9.5057	8.8369	8.1681	7.4993	7.0318	1.2082	1.3165	560.0	368	600	.7416	820
830	4.2030-4	2.1015-2	-1880.4	9.5203	8.8515	8.1827	7.5139	7.0465	1.2111	1.3155	563.1	372	607	.7413	830
840	4.1529-4	2.0765-2	-1868.3	9.5349	8.8661	8.1973	7.5284	7.0610	1.2140	1.3145	566.3	375	614	.7410	840
850	4.1041-4	2.0520-2	-1856.2	9.5492	8.8804	8.2116	7.5428	7.0754	1.2169	1.3135	569.5	378	621	.7407	850
860	4.0563-4	2.0282-2	-1844.0	9.5635	8.8947	8.2259	7.5571	7.0896	1.2198	1.3125	572.6	381	628	.7404	860
870	4.0097-4	2.0049-2	-1831.8	9.5776	8.9088	8.2400	7.5712	7.1037	1.2227	1.3116	575.7	384	635	.7402	870
880	3.9642-4	1.9821-2	-1819.5	9.5916	8.9228	8.2540	7.5852	7.1177	1.2255	1.3106	578.8	387	642	.7399	880
890	3.9196-4	1.9598-2	-1807.3	9.6055	8.9367	8.2679	7.5991	7.1316	1.2283	1.3097	581.9	391	649	.7396	890
900	3.8761-4	1.9380-2	-1795.0	9.6192	8.9504	8.2816	7.6128	7.1453	1.2311	1.3088	584.9	394	655	.7394	900
910	3.8335-4	1.9167-2	-1782.6	9.6328	8.9640	8.2952	7.6264	7.1589	1.2338	1.3079	588.0	397	662	.7391	910
920	3.7918-4	1.8959-2	-1770.3	9.6463	8.9775	8.3087	7.6399	7.1724	1.2366	1.3070	591.0	400	669	.7389	920
930	3.7510-4	1.8755-2	-1757.9	9.6597	8.9909	8.3221	7.6533	7.1858	1.2393	1.3061	594.0	403	676	.7387	930
940	3.7111-4	1.8556-2	-1745.5	9.6730	9.0042	8.3354	7.6666	7.1991	1.2420	1.3053	597.0	406	683	.7384	940
950	3.6721-4	1.8360-2	-1733.1	9.6861	9.0173	8.3485	7.6797	7.2122	1.2446	1.3044	599.9	409	689	.7382	950
960	3.6338-4	1.8169-2	-1720.6	9.6992	9.0304	8.3616	7.6928	7.2253	1.2472	1.3036	602.9	412	696	.7380	960
970	3.5963-4	1.7982-2	-1708.1	9.7121	9.0433	8.3745	7.7057	7.2382	1.2498	1.3028	605.8	415	703	.7378	970
980	3.5596-4	1.7798-2	-1695.6	9.7249	9.0561	8.3873	7.7185	7.2511	1.2524	1.3020	608.8	418	709	.7376	980
990	3.5237-4	1.7618-2	-1683.1	9.7377	9.0689	8.4001	7.7313	7.2638	1.2549	1.3012	611.7	421	716	.7374	990

TABLE 20A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.050718; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.6252;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .10097; H2O= .12962; N2= .71304; O2= .04782; AR= .00855

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4885-4	1.7442-2	-1670.5	9.7503	9.0815	8.4127	7.7439	7.2764	1.2574	1.3004	614.6	424	723	.7372	1000
1050	3.3223-4	1.6612-2	-1607.3	9.8119	9.1431	8.4743	7.8055	7.3380	1.2692	1.2968	628.9	438	756	.7363	1050
1100	3.1713-4	1.5857-2	-1543.6	9.8712	9.2024	8.5336	7.8648	7.3974	1.2804	1.2934	642.8	453	788	.7356	1100
1150	3.0334-4	1.5167-2	-1479.3	9.9284	9.2596	8.5908	7.9220	7.4545	1.2911	1.2903	656.5	467	820	.7349	1150
1200	2.9070-4	1.4535-2	-1414.5	9.9836	9.3148	8.6460	7.9771	7.5097	1.3013	1.2873	669.8	480	851	.7343	1200
1250	2.7908-4	1.3954-2	-1349.2	10.0369	9.3681	8.6993	8.0305	7.5630	1.3111	1.2846	682.9	494	882	.7337	1250
1300	2.6834-4	1.3417-2	-1283.4	10.0885	9.4197	8.7509	8.0821	7.6146	1.3204	1.2820	695.8	507	913	.7332	1300
1350	2.5840-4	1.2920-2	-1217.2	10.1385	9.4697	8.8009	8.1321	7.6646	1.3292	1.2796	708.4	520	944	.7327	1350
1400	2.4918-4	1.2459-2	-1150.5	10.1870	9.5182	8.8494	8.1806	7.7131	1.3376	1.2774	720.7	533	974	.7321	1400
1450	2.4058-4	1.2029-2	-1083.4	10.2341	9.5653	8.8964	8.2276	7.7602	1.3456	1.2753	732.9	546	1004	.7316	1450
1500	2.3256-4	1.1628-2	-1015.9	10.2798	9.6110	8.9422	8.2734	7.8059	1.3532	1.2733	744.8	558	1034	.7310	1500
1550	2.2506-4	1.1253-2	-948.1	10.3243	9.6555	8.9867	8.3179	7.8504	1.3605	1.2715	756.6	571	1063	.7303	1550
1600	2.1803-4	1.0901-2	-879.9	10.3676	9.6988	9.0300	8.3612	7.8937	1.3673	1.2697	768.2	583	1093	.7296	1600
1650	2.1142-4	1.0571-2	-811.4	10.4098	9.7410	9.0722	8.4034	7.9359	1.3739	1.2681	779.6	595	1122	.7289	1650
1700	2.0520-4	1.0260-2	-742.5	10.4509	9.7821	9.1133	8.4445	7.9770	1.3801	1.2666	790.8	607	1151	.7281	1700
1750	1.9934-4	9.9670-3	-673.4	10.4910	9.8222	9.1534	8.4846	8.0171	1.3859	1.2651	801.9	619	1180	.7274	1750
1800	1.9380-4	9.6902-3	-603.9	10.5301	9.8613	9.1925	8.5237	8.0562	1.3915	1.2638	812.9	631	1208	.7267	1800
1850	1.8857-4	9.4283-3	-534.2	10.5683	9.8995	9.2307	8.5619	8.0944	1.3968	1.2625	823.7	643	1237	.7259	1850
1900	1.8360-4	9.1802-3	-464.2	10.6056	9.9368	9.2680	8.5992	8.1317	1.4018	1.2613	834.3	654	1265	.7251	1900
1950	1.7890-4	8.9448-3	-394.0	10.6421	9.9733	9.3045	8.6357	8.1682	1.4066	1.2602	844.9	665	1292	.7244	1950
2000	1.7442-4	8.7211-3	-323.6	10.6778	10.0090	9.3401	8.6713	8.2039	1.4111	1.2592	855.3	677	1320	.7236	2000
2050	1.7017-4	8.5084-3	-252.9	10.7127	10.0438	9.3750	8.7062	8.2388	1.4154	1.2582	865.6	688	1347	.7230	2050
2100	1.6612-4	8.3059-3	-182.0	10.7468	10.0780	9.4092	8.7404	8.2729	1.4195	1.2573	875.7	699	1374	.7223	2100
2150	1.6225-4	8.1127-3	-111.0	10.7803	10.1115	9.4426	8.7738	8.3064	1.4233	1.2564	885.8	710	1400	.7216	2150
2200	1.5857-4	7.9283-3	-39.7	10.8130	10.1442	9.4754	8.8066	8.3391	1.4270	1.2556	895.7	721	1427	.7210	2200
2250	1.5504-4	7.7521-3	31.7	10.8451	10.1763	9.5075	8.8387	8.3712	1.4305	1.2548	905.6	732	1453	.7203	2250
2300	1.5167-4	7.5836-3	103.3	10.8766	10.2078	9.5390	8.8702	8.4027	1.4338	1.2541	915.3	742	1479	.7196	2300
2350	1.4844-4	7.4222-3	175.1	10.9075	10.2387	9.5699	8.9011	8.4336	1.4369	1.2534	924.9	753	1505	.7189	2350
2400	1.4535-4	7.2676-3	247.0	10.9378	10.2690	9.6001	8.9313	8.4639	1.4399	1.2527	934.5	763	1530	.7181	2400
2450	1.4239-4	7.1193-3	319.1	10.9675	10.2987	9.6299	8.9611	8.4936	1.4427	1.2521	943.9	774	1556	.7174	2450
2500	1.3954-4	6.9769-3	391.3	10.9966	10.3278	9.6590	8.9902	8.5228	1.4454	1.2515	953.3	784	1581	.7166	2500
2550	1.3680-4	6.8401-3	463.6	11.0253	10.3565	9.6877	9.0189	8.5514	1.4480	1.2509	962.6	794	1607	.7157	2550
2600	1.3417-4	6.7086-3	536.1	11.0534	10.3846	9.7158	9.0470	8.5796	1.4504	1.2504	971.7	804	1632	.7148	2600
2650	1.3164-4	6.5820-3	608.7	11.0811	10.4123	9.7435	9.0747	8.6072	1.4528	1.2499	980.8	814	1657	.7139	2650
2700	1.2920-4	6.4601-3	681.4	11.1083	10.4395	9.7707	9.1019	8.6344	1.4550	1.2494	989.9	824	1682	.7130	2700
2750	1.2685-4	6.3426-3	754.2	11.1350	10.4662	9.7974	9.1286	8.6611	1.4572	1.2489	998.8	834	1707	.7122	2750
2800	1.2459-4	6.2294-3	827.1	11.1613	10.4925	9.8237	9.1548	8.6874	1.4593	1.2485	1007.7	844	1731	.7114	2800
2850	1.2240-4	6.1201-3	900.1	11.1871	10.5183	9.8495	9.1807	8.7132	1.4613	1.2481	1016.4	854	1756	.7106	2850
2900	1.2029-4	6.0146-3	973.2	11.2125	10.5437	9.8749	9.2061	8.7387	1.4632	1.2477	1025.2	863	1780	.7098	2900
2950	1.1825-4	5.9126-3	1046.4	11.2376	10.5688	9.9000	9.2312	8.7637	1.4651	1.2473	1033.8	873	1804	.7090	2950
3000	1.1628-4	5.8141-3	1119.7	11.2622	10.5934	9.9246	9.2558	8.7883	1.4669	1.2469	1042.4	883	1828	.7083	3000

TABLE 20.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.050718; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8761-6	-1794.9	9.6192	28.625	394	1.0000	-1.0000	1.2313	1.3087	584.9	655	.739	1.2311	1.3088	584.9	655	.739
950	3.6721-6	-1733.0	9.6862	28.625	409	1.0000	-1.0000	1.2450	1.3043	599.9	690	.738	1.2446	1.3044	599.9	689	.738
1000	3.4885-6	-1670.5	9.7504	28.625	424	1.0000	-1.0000	1.2580	1.3002	614.5	723	.737	1.2574	1.3004	614.6	723	.737
1050	3.3223-6	-1607.3	9.8120	28.625	438	1.0000	-1.0000	1.2701	1.2965	628.8	756	.736	1.2692	1.2968	628.9	756	.736
1100	3.1713-6	-1543.5	9.8714	28.625	453	1.0000	-1.0000	1.2818	1.2930	642.7	789	.736	1.2804	1.2934	642.8	788	.736
1150	3.0334-6	-1479.1	9.9286	28.625	467	1.0000	-1.0000	1.2932	1.2897	656.3	821	.735	1.2911	1.2903	656.5	820	.735
1200	2.9070-6	-1414.1	9.9839	28.625	480	1.0000	-1.0000	1.3043	1.2865	669.6	853	.734	1.3013	1.2873	669.8	851	.734
1250	2.7908-6	-1348.6	10.0373	28.625	494	1.0001	-1.0000	1.3153	1.2835	682.6	885	.734	1.3111	1.2846	682.9	882	.734
1300	2.6834-6	-1282.6	10.0892	28.625	507	1.0001	-1.0000	1.3264	1.2805	695.3	918	.733	1.3204	1.2820	695.8	913	.733
1350	2.5840-6	-1216.0	10.1394	28.625	520	1.0002	-1.0000	1.3378	1.2775	707.8	950	.732	1.3292	1.2796	708.4	944	.733
1400	2.4917-6	-1148.8	10.1883	28.624	533	1.0004	-1.0000	1.3497	1.2745	719.9	984	.731	1.3376	1.2774	720.7	974	.732
1450	2.4057-6	-1081.0	10.2359	28.624	546	1.0007	-1.0000	1.3629	1.2713	731.7	1019	.730	1.3456	1.2753	732.9	1004	.732
1500	2.3255-6	-1012.5	10.2823	28.623	558	1.0011	-1.0000	1.3780	1.2678	743.2	1057	.728	1.3532	1.2733	744.9	1034	.731
1550	2.2503-6	-943.2	10.3278	28.622	571	1.0019	-1.0000	1.3961	1.2639	754.4	1099	.725	1.3605	1.2715	756.6	1063	.730
1600	2.1799-6	-872.8	10.3725	28.620	583	1.0031	-1.0001	1.4191	1.2593	765.1	1147	.721	1.3673	1.2698	768.3	1093	.730
1650	2.1135-6	-801.1	10.4166	28.616	595	1.0050	-1.0001	1.4494	1.2537	775.3	1206	.715	1.3738	1.2682	779.7	1122	.729
1700	2.0510-6	-727.7	10.4604	28.611	607	1.0079	-1.0002	1.4902	1.2468	784.8	1280	.707	1.3800	1.2668	791.1	1151	.728
1750	1.9918-6	-651.9	10.5044	28.602	619	1.0125	-1.0003	1.5463	1.2382	793.7	1376	.696	1.3859	1.2654	802.3	1180	.727
1800	1.9356-6	-572.7	10.5490	28.590	631	1.0193	-1.0005	1.6236	1.2279	801.7	1506	.680	1.3914	1.2642	813.5	1209	.726
1850	1.8821-6	-489.0	10.5948	28.571	642	1.0293	-1.0008	1.7296	1.2157	809.0	1684	.660	1.3966	1.2632	824.7	1237	.725
1900	1.8308-6	-399.1	10.6428	28.543	654	1.0436	-1.0013	1.8728	1.2021	815.7	1928	.635	1.4015	1.2624	835.9	1265	.724
1950	1.7814-6	-301.0	10.6938	28.504	665	1.0633	-1.0019	2.0622	1.1877	821.9	2258	.607	1.4060	1.2618	847.2	1293	.723
2000	1.7335-6	-192.0	10.7489	28.450	676	1.0899	-1.0028	2.3062	1.1734	828.2	2700	.577	1.4103	1.2614	858.7	1322	.721
2050	1.6868-6	-69.3	10.8095	28.375	686	1.1242	-1.0039	2.6109	1.1600	834.7	3277	.547	1.4142	1.2613	870.4	1350	.719
2100	1.6409-6	70.2	10.8767	28.276	697	1.1672	-1.0054	2.9791	1.1481	842.0	4013	.517	1.4178	1.2617	882.6	1378	.717
2150	1.5955-6	229.6	10.9517	28.148	707	1.2192	-1.0073	3.4104	1.1382	850.2	4928	.489	1.4211	1.2624	895.4	1407	.714
2200	1.5504-6	412.2	11.0356	27.988	716	1.2804	-1.0097	3.9017	1.1301	859.4	6040	.463	1.4241	1.2636	908.8	1437	.710
2250	1.5052-6	620.7	11.1293	27.791	726	1.3506	-1.0125	4.4494	1.1238	869.8	7362	.439	1.4269	1.2653	922.9	1468	.705
2300	1.4600-6	858.0	11.2336	27.554	735	1.4297	-1.0157	5.0504	1.1191	881.3	8897	.417	1.4296	1.2676	937.9	1502	.699
2350	1.4144-6	1126.6	11.3491	27.275	744	1.5176	-1.0195	5.7025	1.1156	893.9	10636	.399	1.4321	1.2704	954.0	1539	.692
2400	1.3686-6	1429.1	11.4765	26.953	752	1.6138	-1.0239	6.4027	1.1131	907.8	12546	.384	1.4347	1.2739	971.2	1579	.684
2450	1.3224-6	1767.6	11.6160	26.586	760	1.7170	-1.0287	7.1438	1.1115	922.9	14563	.373	1.4375	1.2781	989.6	1623	.673
2500	1.2760-6	2143.9	11.7680	26.175	768	1.8246	-1.0340	7.9094	1.1108	939.2	16583	.366	1.4404	1.2829	1009.3	1673	.661
2550	1.2294-6	2558.4	11.9322	25.724	776	1.9318	-1.0395	8.6687	1.1107	956.8	18464	.364	1.4435	1.2885	1030.5	1729	.648
2600	1.1829-6	3009.8	12.1075	25.238	784	2.0312	-1.0449	9.3723	1.1113	975.6	20034	.367	1.4470	1.2948	1053.1	1790	.634
2650	1.1371-6	3493.6	12.2918	24.727	792	2.1134	-1.0497	9.9535	1.1125	995.7	21114	.373	1.4507	1.3017	1077.0	1856	.619
2700	1.0925-6	4001.9	12.4818	24.204	800	2.1681	-1.0535	10.3368	1.1145	1016.7	21558	.383	1.4546	1.3092	1101.9	1925	.604
2750	1.0496-6	4522.9	12.6730	23.685	808	2.1864	-1.0556	10.4548	1.1172	1038.5	21289	.397	1.4586	1.3169	1127.5	1996	.590
2800	1.0092-6	5042.3	12.8602	23.187	816	2.1640	-1.0559	10.2700	1.1206	1060.7	20331	.412	1.4627	1.3247	1153.3	2067	.577
2850	9.7176-7	5544.9	13.0381	22.726	824	2.1025	-1.0541	9.7902	1.1250	1083.1	18811	.429	1.4667	1.3323	1178.7	2135	.566
2900	9.3759-7	6017.3	13.2024	22.311	833	2.0097	-1.0506	9.0703	1.1304	1105.2	16928	.446	1.4704	1.3395	1203.1	2199	.557
2950	9.0678-7	6449.4	13.3502	21.950	842	1.8968	-1.0459	8.1954	1.1369	1127.1	14896	.463	1.4739	1.3459	1226.3	2259	.550
3000	8.7921-7	6835.8	13.4801	21.644	851	1.7757	-1.0405	7.2574	1.1447	1148.5	12898	.479	1.4770	1.3515	1248.0	2314	.543

TABLE 20.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.050718; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.8761-5	-1794.9	8.9504	28.625	394	1.0000	-1.0000	1 2313	1.3087	584.9	655 .739	1.2311	1.3088	584.9	655 .739
950	3.6721-5	-1733.0	9.0174	28.625	409	1.0000	-1.0000	1.2449	1.3043	599.9	690 .738	1.2446	1.3044	599.9	689 .738
1000	3.4885-5	-1670.5	9.0815	28.625	424	1.0000	-1.0000	1.2580	1.3002	614.5	723 .737	1.2574	1.3004	614.6	723 .737
1050	3.3223-5	-1607.3	9.1432	28.625	438	1.0000	-1.0000	1.2700	1.2965	628.8	756 .736	1.2692	1.2968	628.9	756 .736
1100	3.1713-5	-1543.5	9.2026	28.625	453	1.0000	-1.0000	1.2817	1.2930	642.7	789 .736	1.2804	1.2934	642.8	788 .736
1150	3.0334-5	-1479.1	9.2598	28.625	467	1.0000	-1.0000	1.2930	1.2897	656.4	821 .735	1.2911	1.2903	656.5	820 .735
1200	2.9070-5	-1414.2	9.3151	28.625	480	1.0000	-1.0000	1.3040	1.2866	669.7	853 .734	1.3013	1.2873	669.8	851 .734
1250	2.7908-5	-1348.7	9.3685	28.625	494	1.0000	-1.0000	1.3148	1.2836	682.7	885 .734	1.3111	1.2846	682.9	882 .734
1300	2.6834-5	-1282.7	9.4203	28.625	507	1.0001	-1.0000	1.3255	1.2807	695.4	917 .733	1.3204	1.2820	695.8	913 .733
1350	2.5840-5	-1216.1	9.4705	28.625	520	1.0001	-1.0000	1.3361	1.2779	707.9	949 .732	1.3292	1.2796	708.4	944 .733
1400	2.4917-5	-1149.1	9.5193	28.625	533	1.0002	-1.0000	1.3468	1.2751	720.1	981 .732	1.3376	1.2774	720.7	974 .732
1450	2.4058-5	-1081.5	9.5667	28.625	546	1.0003	-1.0000	1.3579	1.2723	732.0	1014 .731	1.3456	1.2753	732.9	1004 .732
1500	2.3256-5	-1013.3	9.6130	28.624	558	1.0005	-1.0000	1.3697	1.2695	743.7	1048 .730	1.3532	1.2733	744.8	1034 .731
1550	2.2505-5	-944.5	9.6581	28.624	571	1.0008	-1.0000	1.3825	1.2665	755.1	1084 .728	1.3605	1.2715	756.6	1063 .730
1600	2.1801-5	-875.0	9.7022	28.623	583	1.0013	-1.0000	1.3970	1.2633	766.3	1121 .727	1.3673	1.2698	768.2	1093 .730
1650	2.1139-5	-804.7	9.7455	28.621	595	1.0020	-1.0000	1.4140	1.2598	777.1	1162 .724	1.3739	1.2681	779.6	1122 .729
1700	2.0516-5	-733.5	9.7880	28.619	607	1.0031	-1.0001	1.4346	1.2558	787.5	1209 .721	1.3800	1.2666	790.9	1151 .728
1750	1.9927-5	-661.2	9.8299	28.616	619	1.0048	-1.0001	1.4602	1.2512	797.6	1262 .716	1.3859	1.2653	802.1	1180 .727
1800	1.9371-5	-587.4	9.8715	28.611	631	1.0072	-1.0002	1.4929	1.2457	807.2	1326 .711	1.3915	1.2640	813.1	1208 .726
1850	1.8843-5	-511.7	9.9129	28.604	642	1.0106	-1.0003	1.5353	1.2393	816.3	1404 .703	1.3967	1.2628	824.1	1237 .726
1900	1.8340-5	-433.6	9.9546	28.594	654	1.0156	-1.0004	1.5904	1.2317	824.9	1502 .693	1.4017	1.2617	834.9	1265 .725
1950	1.7861-5	-352.4	9.9968	28.580	665	1.0225	-1.0007	1.6620	1.2230	832.9	1627 .680	1.4064	1.2608	845.7	1293 .724
2000	1.7403-5	-267.1	10.0400	28.561	676	1.0319	-1.0010	1.7544	1.2132	840.4	1788 .664	1.4108	1.2600	856.5	1320 .723
2050	1.6963-5	-176.6	10.0847	28.534	687	1.0445	-1.0014	1.8720	1.2026	847.5	1994 .645	1.4149	1.2593	867.3	1347 .722
2100	1.6538-5	-79.4	10.1315	28.498	698	1.0609	-1.0019	2.0191	1.1915	854.4	2258 .624	1.4188	1.2589	878.2	1374 .721
2150	1.6126-5	25.9	10.1810	28.451	709	1.0818	-1.0027	2.1991	1.1804	861.2	2589 .602	1.4223	1.2586	889.3	1401 .719
2200	1.5726-5	141.1	10.2340	28.389	719	1.1076	-1.0036	2.4138	1.1699	868.2	3000 .579	1.4256	1.2586	900.5	1428 .718
2250	1.5334-5	267.9	10.2910	28.311	729	1.1387	-1.0048	2.6633	1.1603	875.6	3500 .555	1.4286	1.2588	912.0	1456 .716
2300	1.4949-5	408.0	10.3525	28.214	739	1.1750	-1.0062	2.9460	1.1519	883.6	4098 .532	1.4314	1.2593	923.9	1483 .714
2350	1.4570-5	563.0	10.4192	28.096	749	1.2164	-1.0079	3.2586	1.1448	892.3	4799 .509	1.4339	1.2601	936.1	1511 .711
2400	1.4195-5	734.3	10.4913	27.955	759	1.2626	-1.0098	3.5975	1.1389	901.7	5611 .486	1.4362	1.2612	948.8	1539 .708
2450	1.3823-5	923.1	10.5692	27.789	768	1.3134	-1.0120	3.9591	1.1342	911.8	6535 .465	1.4383	1.2626	962.1	1569 .704
2500	1.3453-5	1130.5	10.6530	27.599	777	1.3686	-1.0145	4.3406	1.1305	922.7	7574 .445	1.4403	1.2645	975.9	1600 .699
2550	1.3086-5	1357.5	10.7428	27.382	786	1.4278	-1.0173	4.7404	1.1277	934.4	8725 .427	1.4422	1.2667	990.3	1633 .694
2600	1.2721-5	1604.8	10.8389	27.139	794	1.4911	-1.0204	5.1571	1.1257	946.9	9976 .411	1.4441	1.2693	1005.5	1669 .688
2650	1.2357-5	1873.4	10.9412	26.870	803	1.5580	-1.0238	5.5892	1.1243	960.2	11308 .397	1.4460	1.2723	1021.4	1707 .680
2700	1.1994-5	2164.0	11.0498	26.574	811	1.6279	-1.0276	6.0337	1.1234	974.2	12688 .386	1.4479	1.2757	1038.1	1748 .672
2750	1.1634-5	2476.9	11.1646	26.252	819	1.6998	-1.0315	6.4844	1.1231	989.0	14071 .378	1.4500	1.2795	1055.6	1792 .663
2800	1.1275-5	2812.3	11.2855	25.906	828	1.7719	-1.0357	6.9308	1.1232	1004.7	15397 .373	1.4522	1.2837	1074.1	1840 .653
2850	1.0921-5	3169.6	11.4120	25.539	836	1.8413	-1.0398	7.3570	1.1238	1021.1	16599 .370	1.4545	1.2884	1093.3	1892 .642
2900	1.0570-5	3547.3	11.5433	25.154	844	1.9048	-1.0439	7.7419	1.1249	1038.4	17601 .371	1.4570	1.2934	1113.5	1948 .631
2950	1.0227-5	3942.7	11.6785	24.756	852	1.9583	-1.0476	8.0603	1.1264	1056.4	18333 .375	1.4597	1.2988	1134.4	2006 .620
3000	9.8923-6	4351.8	11.8160	24.352	860	1.9977	-1.0507	8.2858	1.1284	1075.1	18735 .380	1.4625	1.3045	1156.0	2068 .608

TABLE 20.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.050718; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8761-4	-1794.9	8.2816	28.625	394	1.0000	-1.0000	1.2313	1.3087	584.9	655	.739	1.2311	1.3088	584.9	655	.739
950	3.6721-4	-1733.0	8.3486	28.625	409	1.0000	-1.0000	1.2449	1.3043	599.9	690	.738	1.2446	1.3044	599.9	689	.738
1000	3.4885-4	-1670.5	8.4127	28.625	424	1.0000	-1.0000	1.2579	1.3002	614.5	723	.737	1.2574	1.3004	614.6	723	.737
1050	3.3223-4	-1607.3	8.4744	28.625	438	1.0000	-1.0000	1.2700	1.2965	628.8	756	.736	1.2692	1.2968	628.9	756	.736
1100	3.1713-4	-1543.5	8.5338	28.625	453	1.0000	-1.0000	1.2817	1.2930	642.8	789	.736	1.2804	1.2934	642.8	788	.736
1150	3.0334-4	-1479.1	8.5910	28.625	467	1.0000	-1.0000	1.2929	1.2897	656.4	821	.735	1.2911	1.2903	656.5	820	.735
1200	2.9070-4	-1414.2	8.6462	28.625	480	1.0000	-1.0000	1.3039	1.2866	669.7	853	.734	1.3013	1.2873	669.8	851	.734
1250	2.7908-4	-1348.7	8.6997	28.625	494	1.0000	-1.0000	1.3145	1.2836	682.7	885	.734	1.3111	1.2846	682.9	882	.734
1300	2.6834-4	-1282.7	8.7514	28.625	507	1.0000	-1.0000	1.3250	1.2808	695.4	916	.733	1.3204	1.2820	695.8	913	.733
1350	2.5840-4	-1216.2	8.8016	28.625	520	1.0001	-1.0000	1.3352	1.2780	707.9	948	.733	1.3292	1.2796	708.4	944	.733
1400	2.4917-4	-1149.2	8.8504	28.625	533	1.0001	-1.0000	1.3454	1.2754	720.2	980	.732	1.3376	1.2774	720.7	974	.732
1450	2.4058-4	-1081.7	8.8978	28.625	546	1.0002	-1.0000	1.3557	1.2728	732.2	1012	.731	1.3456	1.2753	732.9	1004	.732
1500	2.3256-4	-1013.6	8.9439	28.625	558	1.0002	-1.0000	1.3660	1.2702	743.9	1044	.731	1.3532	1.2733	744.8	1034	.731
1550	2.2506-4	-945.1	8.9889	28.624	571	1.0004	-1.0000	1.3768	1.2676	755.5	1077	.730	1.3605	1.2715	756.6	1063	.730
1600	2.1802-4	-875.9	9.0328	28.624	583	1.0006	-1.0000	1.3880	1.2650	766.8	1111	.728	1.3673	1.2697	768.2	1093	.730
1650	2.1141-4	-806.2	9.0757	28.623	595	1.0009	-1.0000	1.4001	1.2623	777.8	1146	.727	1.3739	1.2681	779.6	1122	.729
1700	2.0518-4	-735.9	9.1177	28.622	607	1.0013	-1.0000	1.4134	1.2595	788.7	1183	.725	1.3801	1.2666	790.9	1151	.728
1750	1.9931-4	-664.9	9.1588	28.621	619	1.0020	-1.0000	1.4285	1.2565	799.2	1223	.723	1.3859	1.2652	802.0	1180	.727
1800	1.9376-4	-593.0	9.1993	28.619	631	1.0029	-1.0001	1.4459	1.2532	809.5	1266	.721	1.3915	1.2639	813.0	1208	.727
1850	1.8851-4	-520.2	9.2392	28.616	643	1.0042	-1.0001	1.4666	1.2495	819.5	1313	.718	1.3968	1.2626	823.8	1237	.726
1900	1.8352-4	-446.3	9.2786	28.612	654	1.0060	-1.0002	1.4915	1.2453	829.2	1367	.714	1.4018	1.2615	834.6	1265	.725
1950	1.7878-4	-371.0	9.3178	28.607	665	1.0084	-1.0002	1.5220	1.2406	838.5	1429	.709	1.4065	1.2605	845.2	1292	.724
2000	1.7427-4	-294.0	9.3568	28.600	677	1.0117	-1.0003	1.5596	1.2353	847.5	1503	.702	1.4110	1.2595	855.8	1320	.723
2050	1.6996-4	-214.9	9.3958	28.590	688	1.0162	-1.0005	1.6060	1.2293	856.1	1590	.695	1.4152	1.2586	866.2	1347	.723
2100	1.6584-4	-133.2	9.4352	28.577	699	1.0221	-1.0007	1.6634	1.2225	864.3	1696	.685	1.4192	1.2579	876.7	1374	.722
2150	1.6188-4	-48.3	9.4751	28.560	710	1.0297	-1.0009	1.7339	1.2152	872.1	1825	.674	1.4229	1.2572	887.1	1400	.721
2200	1.5808-4	40.4	9.5159	28.537	720	1.0394	-1.0013	1.8195	1.2073	879.7	1982	.661	1.4264	1.2567	897.5	1427	.720
2250	1.5441-4	133.9	9.5579	28.508	731	1.0516	-1.0017	1.9222	1.1991	887.1	2172	.647	1.4297	1.2563	908.0	1453	.719
2300	1.5086-4	233.0	9.6015	28.471	741	1.0664	-1.0023	2.0433	1.1908	894.3	2401	.631	1.4327	1.2560	918.5	1480	.718
2350	1.4741-4	338.6	9.6469	28.426	752	1.0843	-1.0030	2.1835	1.1827	901.6	2673	.614	1.4355	1.2559	929.1	1506	.717
2400	1.4405-4	451.6	9.6945	28.369	762	1.1052	-1.0038	2.3427	1.1751	909.1	2992	.596	1.4381	1.2560	939.9	1532	.715
2450	1.4077-4	573.1	9.7446	28.301	772	1.1291	-1.0048	2.5196	1.1680	916.9	3361	.578	1.4405	1.2562	950.9	1558	.713
2500	1.3756-4	703.9	9.7974	28.220	781	1.1560	-1.0060	2.7123	1.1617	925.0	3783	.560	1.4427	1.2566	962.1	1584	.711
2550	1.3441-4	844.6	9.8531	28.124	791	1.1856	-1.0073	2.9182	1.1563	933.6	4260	.542	1.4447	1.2573	973.6	1611	.709
2600	1.3131-4	995.9	9.9119	28.015	800	1.2177	-1.0087	3.1347	1.1516	942.7	4792	.524	1.4465	1.2581	985.3	1638	.707
2650	1.2826-4	1158.2	9.9737	27.890	810	1.2519	-1.0103	3.3591	1.1478	952.2	5380	.505	1.4482	1.2592	997.4	1666	.704
2700	1.2525-4	1331.9	10.0386	27.749	819	1.2881	-1.0121	3.5895	1.1447	962.3	6025	.488	1.4497	1.2605	1009.8	1694	.700
2750	1.2228-4	1517.2	10.1066	27.594	828	1.3260	-1.0140	3.8242	1.1422	972.9	6726	.471	1.4511	1.2621	1022.6	1724	.697
2800	1.1935-4	1714.3	10.1777	27.422	836	1.3655	-1.0161	4.0624	1.1403	983.9	7481	.454	1.4525	1.2638	1035.8	1754	.693
2850	1.1646-4	1923.5	10.2517	27.236	845	1.4066	-1.0183	4.3035	1.1390	995.5	8287	.439	1.4539	1.2658	1049.4	1786	.688
2900	1.1360-4	2144.7	10.3287	27.034	854	1.4492	-1.0208	4.5472	1.1380	1007.5	9137	.425	1.4552	1.2680	1063.5	1819	.683
2950	1.1078-4	2378.2	10.4085	26.817	862	1.4931	-1.0233	4.7933	1.1375	1020.0	10021	.412	1.4565	1.2704	1077.9	1854	.677
3000	1.0800-4	2624.1	10.4911	26.586	871	1.5381	-1.0261	5.0406	1.1373	1033.0	10925	.402	1.4579	1.2731	1092.9	1891	.671

TABLE 20.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.050718; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP J/G K	(GAM)S	VS M/S	COND PRAN MICRO W/CM K		CP J/G K	GAM	VS M/S	COND PRAN MICRO W/CM K	
K	G/CM3	J/G	J/G K														
900	3.8761-3	-1794.9	7.6128	28.625	394	1.0000	-1.0000	1.2313	1.3087	584.9	655	.739	1.2311	1.3088	584.9	655	.739
950	3.6721-3	-1733.0	7.6797	28.625	409	1.0000	-1.0000	1.2449	1.3043	599.9	690	.738	1.2446	1.3044	599.9	689	.738
1000	3.4885-3	-1670.5	7.7439	28.625	424	1.0000	-1.0000	1.2579	1.3002	614.5	723	.737	1.2574	1.3004	614.6	723	.737
1050	3.3223-3	-1607.3	7.8056	28.625	438	1.0000	-1.0000	1.2700	1.2965	628.8	756	.736	1.2692	1.2968	628.9	756	.736
1100	3.1713-3	-1543.5	7.8650	28.625	453	1.0000	-1.0000	1.2817	1.2930	642.8	789	.736	1.2804	1.2934	642.8	788	.736
1150	3.0334-3	-1479.1	7.9222	28.625	467	1.0000	-1.0000	1.2929	1.2897	656.4	821	.735	1.2911	1.2903	656.5	820	.735
1200	2.9071-3	-1414.2	7.9774	28.625	480	1.0000	-1.0000	1.3038	1.2866	669.7	853	.734	1.3013	1.2873	669.8	851	.734
1250	2.7908-3	-1348.7	8.0309	28.625	494	1.0000	-1.0000	1.3144	1.2837	682.7	884	.734	1.3111	1.2846	682.9	882	.734
1300	2.6834-3	-1282.7	8.0826	28.625	507	1.0000	-1.0000	1.3247	1.2808	695.4	916	.733	1.3204	1.2820	695.8	913	.733
1350	2.5840-3	-1216.3	8.1328	28.625	520	1.0000	-1.0000	1.3348	1.2781	707.9	948	.733	1.3292	1.2796	708.4	944	.733
1400	2.4917-3	-1149.3	8.1815	28.625	533	1.0000	-1.0000	1.3447	1.2755	720.2	979	.732	1.3376	1.2774	720.7	974	.732
1450	2.4058-3	-1081.8	8.2289	28.625	546	1.0001	-1.0000	1.3545	1.2730	732.2	1011	.731	1.3456	1.2753	732.9	1004	.732
1500	2.3256-3	-1013.8	8.2750	28.625	558	1.0001	-1.0000	1.3643	1.2706	744.0	1042	.731	1.3532	1.2733	744.8	1034	.731
1550	2.2506-3	-945.3	8.3199	28.625	571	1.0002	-1.0000	1.3741	1.2682	755.6	1075	.730	1.3605	1.2715	756.6	1063	.730
1600	2.1802-3	-876.4	8.3637	28.625	583	1.0003	-1.0000	1.3840	1.2658	767.0	1107	.729	1.3673	1.2697	768.2	1093	.730
1650	2.1142-3	-806.9	8.4064	28.624	595	1.0004	-1.0000	1.3942	1.2634	778.2	1140	.728	1.3739	1.2681	779.6	1122	.729
1700	2.0519-3	-737.0	8.4482	28.624	607	1.0006	-1.0000	1.4047	1.2611	789.1	1173	.727	1.3801	1.2666	790.8	1151	.728
1750	1.9933-3	-666.5	8.4891	28.623	619	1.0009	-1.0000	1.4158	1.2587	799.9	1208	.726	1.3859	1.2652	802.0	1180	.727
1800	1.9378-3	-595.4	8.5291	28.622	631	1.0013	-1.0000	1.4276	1.2562	810.5	1243	.724	1.3915	1.2638	812.9	1208	.727
1850	1.8854-3	-523.7	8.5684	28.621	643	1.0018	-1.0000	1.4406	1.2536	820.8	1281	.723	1.3968	1.2626	823.7	1237	.726
1900	1.8357-3	-451.3	8.6070	28.620	654	1.0025	-1.0001	1.4549	1.2509	831.0	1320	.721	1.4018	1.2614	834.4	1265	.725
1950	1.7885-3	-378.2	8.6450	28.617	665	1.0034	-1.0001	1.4711	1.2480	840.9	1362	.719	1.4066	1.2603	845.0	1292	.724
2000	1.7436-3	-304.2	8.6825	28.615	677	1.0046	-1.0001	1.4896	1.2449	850.6	1408	.716	1.4110	1.2593	855.5	1320	.724
2050	1.7008-3	-229.2	8.7195	28.611	688	1.0063	-1.0002	1.5111	1.2415	860.0	1458	.713	1.4153	1.2584	865.8	1347	.723
2100	1.6600-3	-153.0	8.7562	28.606	699	1.0084	-1.0003	1.5363	1.2378	869.2	1514	.709	1.4193	1.2575	876.1	1374	.722
2150	1.6211-3	-75.5	8.7927	28.599	710	1.0111	-1.0003	1.5659	1.2338	878.2	1578	.705	1.4231	1.2567	886.3	1400	.721
2200	1.5838-3	3.7	8.8291	28.591	721	1.0146	-1.0005	1.6009	1.2293	886.8	1650	.699	1.4267	1.2560	896.4	1427	.721
2250	1.5480-3	84.7	8.8655	28.580	731	1.0191	-1.0006	1.6423	1.2245	895.3	1734	.693	1.4301	1.2554	906.5	1453	.720
2300	1.5136-3	168.1	8.9021	28.566	742	1.0246	-1.0008	1.6911	1.2193	903.4	1830	.686	1.4333	1.2548	916.5	1479	.719
2350	1.4805-3	254.0	8.9391	28.549	752	1.0313	-1.0011	1.7482	1.2137	911.4	1942	.677	1.4363	1.2543	926.5	1505	.718
2400	1.4486-3	343.0	8.9766	28.528	763	1.0395	-1.0014	1.8145	1.2080	919.2	2073	.668	1.4391	1.2539	936.5	1531	.717
2450	1.4177-3	435.6	9.0148	28.502	773	1.0493	-1.0018	1.8906	1.2020	926.9	2223	.657	1.4417	1.2537	946.6	1556	.716
2500	1.3878-3	532.3	9.0538	28.470	783	1.0608	-1.0023	1.9769	1.1961	934.5	2396	.646	1.4442	1.2535	956.6	1582	.715
2550	1.3588-3	633.5	9.0939	28.433	793	1.0740	-1.0028	2.0735	1.1903	942.1	2593	.634	1.4465	1.2534	966.8	1607	.714
2600	1.3306-3	739.8	9.1352	28.388	803	1.0891	-1.0035	2.1797	1.1847	949.8	2816	.622	1.4486	1.2534	977.0	1633	.712
2650	1.3031-3	851.6	9.1778	28.335	813	1.1059	-1.0042	2.2949	1.1794	957.7	3065	.609	1.4505	1.2536	987.3	1658	.711
2700	1.2762-3	969.4	9.2218	28.274	822	1.1243	-1.0051	2.4178	1.1746	965.7	3340	.595	1.4523	1.2539	997.8	1684	.709
2750	1.2499-3	1093.5	9.2673	28.205	832	1.1442	-1.0060	2.5468	1.1703	974.0	3642	.582	1.4540	1.2543	1008.4	1709	.707
2800	1.2242-3	1224.1	9.3144	28.126	841	1.1654	-1.0070	2.6803	1.1665	982.6	3971	.568	1.4555	1.2549	1019.1	1735	.706
2850	1.1989-3	1361.6	9.3631	28.039	850	1.1877	-1.0082	2.8167	1.1633	991.5	4325	.554	1.4569	1.2556	1030.1	1761	.704
2900	1.1742-3	1505.8	9.4132	27.942	859	1.2109	-1.0094	2.9546	1.1605	1000.7	4705	.540	1.4582	1.2564	1041.2	1787	.701
2950	1.1499-3	1657.0	9.4649	27.835	869	1.2348	-1.0106	3.0927	1.1582	1010.2	5111	.526	1.4594	1.2573	1052.6	1813	.699
3000	1.1261-3	1815.1	9.5181	27.720	877	1.2593	-1.0120	3.2300	1.1564	1020.1	5542	.511	1.4605	1.2584	1064.1	1840	.697

TABLE 20.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.050718; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP J/G K	(GAM)S	VS M/S	COND PRAN MICRO W/CM K	CP J/G K	GAM	VS M/S	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K												
900	1.9380-2	-1794.9	7.1453	28.625	394	1.0000	-1.0000	1.2313	1.3087	584.9	655 .739	1.2311	1.3088	584.9	655 .739
950	1.8360-2	-1733.0	7.2123	28.625	409	1.0000	-1.0000	1.2450	1.3043	599.9	690 .738	1.2446	1.3044	599.9	689 .738
1000	1.7442-2	-1670.5	7.2765	28.625	424	1.0000	-1.0000	1.2579	1.3002	614.5	723 .737	1.2574	1.3004	614.6	723 .737
1050	1.6612-2	-1607.3	7.3381	28.625	438	1.0000	-1.0000	1.2700	1.2965	628.8	756 .736	1.2692	1.2968	628.9	756 .736
1100	1.5857-2	-1543.5	7.3975	28.625	453	1.0000	-1.0000	1.2817	1.2930	642.7	789 .736	1.2804	1.2934	642.8	788 .736
1150	1.5167-2	-1479.1	7.4547	28.625	467	1.0000	-1.0000	1.2929	1.2897	656.4	821 .735	1.2911	1.2903	656.5	820 .735
1200	1.4535-2	-1414.2	7.5100	28.625	480	1.0000	-1.0000	1.3038	1.2866	669.7	853 .734	1.3013	1.2873	669.8	851 .734
1250	1.3954-2	-1348.7	7.5634	28.625	494	1.0000	-1.0000	1.3143	1.2837	682.7	884 .734	1.3111	1.2846	682.9	882 .734
1300	1.3417-2	-1282.7	7.6152	28.625	507	1.0000	-1.0000	1.3246	1.2809	695.4	916 .733	1.3204	1.2820	695.8	913 .733
1350	1.2920-2	-1216.3	7.6653	28.625	520	1.0000	-1.0000	1.3346	1.2782	707.9	947 .733	1.3292	1.2796	708.4	944 .733
1400	1.2459-2	-1149.3	7.7141	28.625	533	1.0000	-1.0000	1.3445	1.2756	720.2	979 .732	1.3376	1.2774	720.7	974 .732
1450	1.2029-2	-1081.8	7.7614	28.625	546	1.0000	-1.0000	1.3541	1.2731	732.2	1010 .732	1.3456	1.2753	732.9	1004 .732
1500	1.1628-2	-1013.9	7.8075	28.625	558	1.0001	-1.0000	1.3637	1.2707	744.1	1042 .731	1.3532	1.2733	744.8	1034 .731
1550	1.1253-2	-945.5	7.8523	28.625	571	1.0001	-1.0000	1.3731	1.2684	755.7	1074 .730	1.3605	1.2715	756.6	1063 .730
1600	1.0901-2	-876.6	7.8961	28.625	583	1.0002	-1.0000	1.3826	1.2661	767.1	1105 .729	1.3673	1.2697	768.2	1093 .730
1650	1.0571-2	-807.2	7.9388	28.625	595	1.0003	-1.0000	1.3920	1.2638	778.3	1138 .729	1.3739	1.2681	779.6	1122 .729
1700	1.0260-2	-737.4	7.9805	28.624	607	1.0004	-1.0000	1.4016	1.2616	789.3	1170 .728	1.3801	1.2666	790.8	1151 .728
1750	9.9667-3	-667.0	8.0212	28.624	619	1.0005	-1.0000	1.4115	1.2594	800.1	1203 .727	1.3859	1.2652	801.9	1180 .727
1800	9.6896-3	-596.2	8.0611	28.624	631	1.0007	-1.0000	1.4216	1.2572	810.8	1236 .725	1.3915	1.2638	812.9	1208 .727
1850	9.4275-3	-524.9	8.1002	28.623	643	1.0010	-1.0000	1.4322	1.2550	821.2	1271 .724	1.3968	1.2626	823.7	1237 .726
1900	9.1791-3	-453.0	8.1386	28.622	654	1.0014	-1.0000	1.4434	1.2528	831.5	1306 .723	1.4018	1.2614	834.4	1264 .725
1950	8.9434-3	-380.5	8.1762	28.621	665	1.0019	-1.0001	1.4555	1.2505	841.6	1343 .721	1.4066	1.2603	844.9	1292 .724
2000	8.7193-3	-307.4	8.2132	28.619	677	1.0025	-1.0001	1.4686	1.2481	851.6	1381 .720	1.4111	1.2593	855.4	1320 .724
2050	8.5060-3	-233.6	8.2497	28.617	688	1.0034	-1.0001	1.4830	1.2455	861.3	1421 .718	1.4153	1.2583	865.7	1347 .723
2100	8.3027-3	-159.1	8.2856	28.614	699	1.0045	-1.0001	1.4991	1.2429	870.9	1464 .716	1.4194	1.2574	875.9	1374 .722
2150	8.1087-3	-83.7	8.3211	28.611	710	1.0058	-1.0002	1.5172	1.2401	880.2	1510 .713	1.4232	1.2566	886.1	1400 .722
2200	7.9232-3	-7.3	8.3562	28.607	721	1.0076	-1.0002	1.5378	1.2370	889.4	1560 .710	1.4268	1.2558	896.1	1427 .721
2250	7.7456-3	70.2	8.3910	28.601	731	1.0098	-1.0003	1.5614	1.2338	898.3	1616 .707	1.4302	1.2551	906.1	1453 .720
2300	7.5754-3	148.9	8.4256	28.594	742	1.0125	-1.0004	1.5884	1.2304	907.1	1677 .703	1.4335	1.2545	915.9	1479 .719
2350	7.4120-3	229.1	8.4601	28.585	753	1.0158	-1.0005	1.6195	1.2267	915.7	1746 .698	1.4365	1.2539	925.8	1505 .719
2400	7.2548-3	310.9	8.4946	28.575	763	1.0199	-1.0007	1.6552	1.2227	924.0	1823 .693	1.4394	1.2534	935.6	1530 .718
2450	7.1035-3	394.7	8.5291	28.562	773	1.0248	-1.0009	1.6961	1.2185	932.2	1909 .687	1.4421	1.2529	945.3	1556 .717
2500	6.9576-3	480.6	8.5638	28.546	784	1.0306	-1.0011	1.7426	1.2142	940.3	2007 .680	1.4447	1.2525	955.0	1581 .716
2550	6.8165-3	569.0	8.5989	28.527	794	1.0375	-1.0014	1.7952	1.2097	948.2	2117 .673	1.4471	1.2522	964.7	1607 .715
2600	6.6801-3	660.2	8.6343	28.504	804	1.0455	-1.0018	1.8542	1.2051	956.0	2241 .665	1.4493	1.2520	974.4	1632 .714
2650	6.5478-3	754.6	8.6702	28.476	814	1.0547	-1.0022	1.9198	1.2005	963.8	2380 .656	1.4515	1.2518	984.2	1658 .712
2700	6.4194-3	852.3	8.7067	28.445	823	1.0651	-1.0026	1.9916	1.1960	971.5	2534 .647	1.4534	1.2517	993.9	1683 .711
2750	6.2945-3	953.8	8.7440	28.408	833	1.0768	-1.0032	2.0696	1.1916	979.3	2705 .638	1.4553	1.2517	1003.7	1708 .710
2800	6.1728-3	1059.4	8.7820	28.365	843	1.0896	-1.0038	2.1530	1.1875	987.2	2891 .628	1.4570	1.2519	1013.6	1732 .709
2850	6.0542-3	1169.2	8.8209	28.317	852	1.1035	-1.0044	2.2411	1.1836	995.2	3094 .617	1.4586	1.2520	1023.6	1757 .707
2900	5.9383-3	1283.5	8.8607	28.262	862	1.1184	-1.0052	2.3329	1.1800	1003.4	3312 .607	1.4601	1.2523	1033.6	1782 .706
2950	5.8251-3	1402.5	8.9014	28.201	871	1.1341	-1.0060	2.4274	1.1768	1011.7	3546 .596	1.4614	1.2527	1043.8	1807 .705
3000	5.7143-3	1526.3	8.9430	28.134	880	1.1506	-1.0068	2.5235	1.1740	1020.2	3795 .585	1.4627	1.2532	1054.1	1831 .703

TABLE 20C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.050718; EQUIV.RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.004-5	-2817.6	7.0141	28.625	1.0651	1.840-5	30.203	130	1.000	-1.000	0.9793	1.3910	277	173	.734	200
220	1.817-5	-2793.1	7.1305	28.625	1.5589	1.671-5	30.173	141	1.000	-1.000	0.9828	1.3896	290	189	.731	220
240	1.625-5	-2733.4	7.3879	28.625	5.7569	1.517-5	29.879	149	1.000	-1.000	0.9980	1.3866	304	202	.735	240
						PRESSURE = 0.10 ATM										
200	2.004-4	-2817.8	6.4309	28.625	1.0308	1.840-4	30.205	130	1.000	-1.000	0.9792	1.3910	277	173	.734	200
220	1.821-4	-2796.8	6.5312	28.625	1.0925	1.673-4	30.202	141	1.000	-1.000	0.9816	1.3898	290	189	.730	220
240	1.665-4	-2772.0	6.6386	28.625	1.5031	1.532-4	30.173	151	1.000	-1.000	0.9854	1.3882	303	205	.727	240
260	1.512-4	-2724.4	6.8278	28.625	3.8984	1.405-4	29.971	160	1.000	-1.000	0.9969	1.3856	316	219	.730	260
280	1.292-4	-2558.0	7.4402	28.625	12.3012	1.263-4	29.017	161	1.000	-1.000	1.0426	1.3790	333	224	.751	280
						PRESSURE = 1.00 ATM										
200	2.004-3	-2817.8	5.8486	28.625	1.0274	1.841-3	30.205	130	1.000	-1.000	0.9792	1.3910	277	173	.734	200
220	1.821-3	-2797.1	5.9474	28.625	1.0461	1.673-3	30.205	141	1.000	-1.000	0.9815	1.3898	290	189	.730	220
240	1.669-3	-2775.8	6.0402	28.625	1.1000	1.534-3	30.202	152	1.000	-1.000	0.9842	1.3884	303	205	.727	240
260	1.538-3	-2751.9	6.1355	28.625	1.3436	1.415-3	30.182	162	1.000	-1.000	0.9878	1.3867	315	221	.724	260
280	1.417-3	-2691.6	6.3575	28.625	2.1689	1.309-3	30.086	171	1.000	-1.000	0.9950	1.3845	327	235	.725	280
298	1.302-3	-2639.3	6.5380	28.625	3.8541	1.219-3	29.826	178	1.000	-1.000	1.0093	1.3816	339	246	.731	298
300	1.290-3	-2631.9	6.5627	28.625	4.1301	1.210-3	29.782	178	1.000	-1.000	1.0116	1.3812	340	247	.732	300
320	1.123-3	-2503.8	6.9741	28.625	9.6376	1.102-3	28.946	180	1.000	-1.000	1.0531	1.3751	356	253	.751	320
						PRESSURE = 10.00 ATM										
200	2.000-2	-2817.8	5.2665	28.625	1.0271	1.841-2	30.205	130	1.000	-1.000	0.9792	1.3910	277	173	.734	200
220	1.819-2	-2797.2	5.3651	28.625	1.0415	1.673-2	30.205	141	1.000	-1.000	0.9815	1.3898	290	189	.730	220
240	1.667-2	-2776.2	5.4564	28.625	1.0599	1.534-2	30.205	152	1.000	-1.000	0.9840	1.3884	303	206	.726	240
260	1.539-2	-2754.6	5.5425	28.625	1.0977	1.416-2	30.203	162	1.000	-1.000	0.9869	1.3868	315	221	.724	260
280	1.428-2	-2703.7	5.7300	28.625	1.3422	1.314-2	30.193	172	1.000	-1.000	0.9904	1.3851	327	236	.722	280
298	1.339-2	-2678.1	5.8185	28.625	1.4987	1.233-2	30.167	181	1.000	-1.000	0.9946	1.3833	337	249	.722	298
300	1.330-2	-2675.3	5.8279	28.625	1.5231	1.225-2	30.163	182	1.000	-1.000	0.9951	1.3831	338	250	.722	300
320	1.238-2	-2641.2	5.9378	28.625	1.9430	1.146-2	30.079	191	1.000	-1.000	1.0023	1.3808	349	264	.725	320
340	1.147-2	-2594.6	6.0787	28.625	2.8102	1.071-2	29.882	198	1.000	-1.000	1.0147	1.3778	361	275	.730	340
360	1.045-2	-2523.3	6.2819	28.625	4.5030	9.976-3	29.468	204	1.000	-1.000	1.0372	1.3737	374	285	.740	360
380	9.235-3	-2403.7	6.6046	28.625	7.8639	9.201-3	28.689	206	1.000	-1.000	1.0780	1.3677	388	293	.756	380
						PRESSURE = 50.00 ATM										
200	9.931-2	-2817.8	4.8596	28.625	1.0270	9.203-2	30.205	130	1.000	-1.000	0.9792	1.3910	277	173	.734	200
220	9.036-2	-2797.2	4.9582	28.625	1.0411	8.366-2	30.205	141	1.000	-1.000	0.9815	1.3898	290	189	.730	220
240	8.288-2	-2776.2	5.0494	28.625	1.0564	7.669-2	30.205	152	1.000	-1.000	0.9840	1.3884	303	206	.726	240
260	7.655-2	-2754.9	5.1347	28.625	1.0760	7.079-2	30.205	162	1.000	-1.000	0.9869	1.3868	315	221	.724	260
280	7.114-2	-2704.7	5.3192	28.625	1.2701	6.573-2	30.203	172	1.000	-1.000	0.9900	1.3851	327	236	.722	280
298	6.681-2	-2681.4	5.3998	28.625	1.3020	6.172-2	30.198	181	1.000	-1.000	0.9933	1.3835	337	250	.722	298
300	6.639-2	-2679.0	5.4079	28.625	1.3070	6.133-2	30.197	182	1.000	-1.000	0.9936	1.3833	338	251	.722	300
320	6.218-2	-2652.1	5.4946	28.625	1.3913	5.747-2	30.180	192	1.000	-1.000	0.9979	1.3813	349	265	.723	320
340	5.835-2	-2622.8	5.5834	28.625	1.5571	5.402-2	30.141	201	1.000	-1.000	1.0034	1.3791	360	278	.724	340
360	5.476-2	-2589.0	5.6799	28.625	1.8504	5.088-2	30.058	209	1.000	-1.000	1.0110	1.3766	370	291	.727	360
380	5.124-2	-2547.6	5.7919	28.625	2.3312	4.795-2	29.902	216	1.000	-1.000	1.0221	1.3737	381	303	.730	380
400	4.761-2	-2494.0	5.9292	28.625	3.0838	4.514-2	29.632	223	1.000	-1.000	1.0386	1.3701	392	314	.736	400
420	4.371-2	-2421.5	6.1057	28.625	4.2442	4.236-2	29.199	227	1.000	-1.000	1.0633	1.3657	404	325	.744	420

TABLE 21A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.067624; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.6768;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .13264; H2O= .15592; N2= .70301; O2= .00000; AR= .00843

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7474-3	8.7369-2	-3239.3	7.9103	7.2427	6.5751	5.9075	5.4409	1.0557	1.3786	282.7	111	148	.7932	200
210	1.6642-3	8.3208-2	-3228.8	7.9619	7.2943	6.6267	5.9591	5.4924	1.0573	1.3778	289.6	117	157	.7882	210
220	1.5885-3	7.9426-2	-3218.2	8.0111	7.3435	6.6759	6.0083	5.5416	1.0591	1.3770	296.4	122	165	.7839	220
230	1.5195-3	7.5973-2	-3207.6	8.0582	7.3906	6.7230	6.0554	5.5888	1.0608	1.3761	302.9	128	173	.7801	230
240	1.4561-3	7.2807-2	-3197.0	8.1034	7.4358	6.7682	6.1006	5.6340	1.0627	1.3752	309.3	133	182	.7769	240
250	1.3979-3	6.9895-2	-3186.3	8.1468	7.4792	6.8116	6.1440	5.6774	1.0646	1.3743	315.6	138	190	.7742	250
260	1.3441-3	6.7207-2	-3175.7	8.1886	7.5210	6.8534	6.1858	5.7192	1.0666	1.3733	321.8	143	198	.7720	260
270	1.2943-3	6.4717-2	-3165.0	8.2289	7.5613	6.8937	6.2261	5.7595	1.0686	1.3723	327.8	148	206	.7702	270
280	1.2481-3	6.2406-2	-3154.3	8.2678	7.6002	6.9326	6.2650	5.7984	1.0707	1.3713	333.7	153	214	.7688	280
290	1.2051-3	6.0254-2	-3143.6	8.3054	7.6378	6.9702	6.3026	5.8360	1.0729	1.3703	339.4	158	221	.7678	290
298	1.1721-3	5.8607-2	-3134.8	8.3352	7.6676	7.0000	6.3324	5.8657	1.0747	1.3694	344.1	162	228	.7672	298
300	1.1649-3	5.8246-2	-3132.8	8.3418	7.6742	7.0066	6.3390	5.8724	1.0751	1.3692	345.1	163	229	.7671	300
310	1.1273-3	5.6367-2	-3122.1	8.3771	7.7095	7.0419	6.3743	5.9077	1.0774	1.3682	350.7	168	236	.7670	310
320	1.0921-3	5.4605-2	-3111.3	8.4114	7.7438	7.0762	6.4086	5.9419	1.0798	1.3671	356.1	173	244	.7671	320
330	1.0590-3	5.2951-2	-3100.5	8.4446	7.7770	7.1094	6.4418	5.9752	1.0822	1.3660	361.5	178	251	.7673	330
340	1.0279-3	5.1393-2	-3089.6	8.4770	7.8094	7.1418	6.4742	6.0075	1.0846	1.3648	366.8	182	258	.7674	340
350	9.9850-4	4.9925-2	-3078.8	8.5084	7.8408	7.1732	6.5056	6.0390	1.0871	1.3637	372.0	187	265	.7675	350
360	9.7076-4	4.8538-2	-3067.9	8.5391	7.8715	7.2039	6.5363	6.0697	1.0897	1.3625	377.1	192	272	.7669	360
370	9.4452-4	4.7226-2	-3057.0	8.5690	7.9014	7.2338	6.5662	6.0996	1.0923	1.3614	382.2	196	280	.7661	370
380	9.1967-4	4.5983-2	-3046.1	8.5982	7.9305	7.2629	6.5953	6.1287	1.0949	1.3602	387.1	201	287	.7652	380
390	8.9609-4	4.4804-2	-3035.1	8.6266	7.9590	7.2914	6.6238	6.1572	1.0976	1.3590	392.0	205	295	.7642	390
400	8.7369-4	4.3684-2	-3024.1	8.6544	7.9868	7.3192	6.6516	6.1850	1.1003	1.3578	396.8	210	302	.7633	400
410	8.5238-4	4.2619-2	-3013.1	8.6817	8.0141	7.3464	6.6788	6.2122	1.1031	1.3566	401.6	214	309	.7629	410
420	8.3208-4	4.1604-2	-3002.0	8.7083	8.0407	7.3731	6.7055	6.2388	1.1059	1.3553	406.3	218	317	.7625	420
430	8.1273-4	4.0637-2	-2991.0	8.7343	8.0667	7.3991	6.7315	6.2649	1.1087	1.3541	410.9	223	324	.7623	430
440	7.9426-4	3.9713-2	-2979.9	8.7598	8.0922	7.4246	6.7570	6.2904	1.1116	1.3529	415.4	227	331	.7621	440
450	7.7661-4	3.8830-2	-2968.7	8.7849	8.1173	7.4497	6.7821	6.3154	1.1145	1.3516	419.9	231	338	.7620	450
460	7.5973-4	3.7986-2	-2957.6	8.8094	8.1418	7.4742	6.8066	6.3399	1.1174	1.3504	424.4	235	345	.7620	460
470	7.4356-4	3.7178-2	-2946.4	8.8334	8.1658	7.4982	6.8306	6.3640	1.1204	1.3491	428.8	239	351	.7620	470
480	7.2807-4	3.6404-2	-2935.2	8.8571	8.1895	7.5219	6.8543	6.3876	1.1233	1.3479	433.1	243	358	.7620	480
490	7.1321-4	3.5661-2	-2923.9	8.8803	8.2127	7.5451	6.8775	6.4108	1.1264	1.3466	437.4	247	365	.7621	490
500	6.9895-4	3.4947-2	-2912.6	8.9030	8.2354	7.5678	6.9002	6.4336	1.1294	1.3454	441.6	251	372	.7622	500
510	6.8524-4	3.4262-2	-2901.3	8.9254	8.2578	7.5902	6.9226	6.4560	1.1325	1.3441	445.8	255	379	.7619	510
520	6.7207-4	3.3603-2	-2890.0	8.9475	8.2799	7.6123	6.9447	6.4780	1.1356	1.3429	450.0	259	386	.7616	520
530	6.5939-4	3.2969-2	-2878.6	8.9691	8.3015	7.6339	6.9663	6.4997	1.1387	1.3416	454.0	263	393	.7613	530
540	6.4717-4	3.2359-2	-2867.2	8.9904	8.3228	7.6552	6.9876	6.5210	1.1418	1.3404	458.1	267	400	.7609	540
550	6.3541-4	3.1770-2	-2855.8	9.0114	8.3438	7.6762	7.0086	6.5420	1.1449	1.3391	462.1	271	407	.7606	550
560	6.2405-4	3.1203-2	-2844.3	9.0321	8.3645	7.6969	7.0293	6.5626	1.1481	1.3379	466.1	274	414	.7601	560
570	6.1311-4	3.0656-2	-2832.8	9.0524	8.3848	7.7172	7.0496	6.5830	1.1513	1.3366	470.0	278	422	.7597	570
580	6.0254-4	3.0127-2	-2821.3	9.0725	8.4049	7.7373	7.0697	6.6030	1.1544	1.3354	473.9	282	429	.7593	580
590	5.9233-4	2.9616-2	-2809.7	9.0922	8.4246	7.7570	7.0894	6.6228	1.1576	1.3341	477.7	286	436	.7588	590

TABLE 21A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.067624; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.6768;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .13264; H2O= .15592; N2= .70301; O2= .00000; AR= .00843

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.8246-4	2.9123-2	-2798.1	9.1117	8.4441	7.7765	7.1089	6.6423	1.1608	1.3329	481.5	289	443	.7583	600
610	5.7291-4	2.8645-2	-2786.5	9.1309	8.4633	7.7957	7.1281	6.6615	1.1641	1.3317	485.3	293	450	.7578	610
620	5.6367-4	2.8183-2	-2774.9	9.1499	8.4823	7.8147	7.1471	6.6804	1.1673	1.3305	489.0	297	457	.7573	620
630	5.5472-4	2.7736-2	-2763.2	9.1686	8.5010	7.8334	7.1658	6.6991	1.1705	1.3293	492.7	300	465	.7568	630
640	5.4605-4	2.7303-2	-2751.5	9.1870	8.5194	7.8518	7.1842	6.7176	1.1737	1.3281	496.4	304	472	.7562	640
650	5.3765-4	2.6883-2	-2739.7	9.2053	8.5377	7.8701	7.2025	6.7358	1.1770	1.3269	500.1	308	479	.7557	650
660	5.2951-4	2.6475-2	-2727.9	9.2233	8.5557	7.8881	7.2205	6.7538	1.1802	1.3257	503.7	311	486	.7552	660
670	5.2160-4	2.6080-2	-2716.1	9.2410	8.5734	7.9058	7.2382	6.7716	1.1835	1.3245	507.2	315	494	.7546	670
680	5.1393-4	2.5697-2	-2704.2	9.2586	8.5910	7.9234	7.2558	6.7892	1.1867	1.3233	510.8	318	501	.7541	680
690	5.0648-4	2.5324-2	-2692.4	9.2759	8.6083	7.9407	7.2731	6.8065	1.1899	1.3222	514.3	322	508	.7535	690
700	4.9925-4	2.4962-2	-2680.4	9.2931	8.6255	7.9579	7.2903	6.8236	1.1932	1.3210	517.8	325	515	.7530	700
710	4.9222-4	2.4611-2	-2668.5	9.3100	8.6424	7.9748	7.3072	6.8406	1.1964	1.3199	521.2	329	523	.7525	710
720	4.8538-4	2.4269-2	-2656.5	9.3268	8.6592	7.9916	7.3240	6.8574	1.1996	1.3187	524.7	332	530	.7519	720
730	4.7873-4	2.3937-2	-2644.5	9.3434	8.6758	8.0082	7.3406	6.8739	1.2028	1.3176	528.1	336	537	.7514	730
740	4.7226-4	2.3613-2	-2632.5	9.3597	8.6921	8.0245	7.3569	6.8903	1.2060	1.3165	531.5	339	544	.7509	740
750	4.6597-4	2.3298-2	-2620.4	9.3760	8.7084	8.0408	7.3731	6.9065	1.2093	1.3154	534.8	342	552	.7504	750
760	4.5983-4	2.2992-2	-2608.3	9.3920	8.7244	8.0568	7.3892	6.9226	1.2124	1.3143	538.1	346	559	.7499	760
770	4.5386-4	2.2693-2	-2596.1	9.4079	8.7403	8.0727	7.4051	6.9384	1.2156	1.3132	541.5	349	566	.7494	770
780	4.4804-4	2.2402-2	-2584.0	9.4236	8.7560	8.0884	7.4208	6.9541	1.2188	1.3121	544.7	352	573	.7490	780
790	4.4237-4	2.2119-2	-2571.8	9.4391	8.7715	8.1039	7.4363	6.9697	1.2219	1.3111	548.0	356	581	.7485	790
800	4.3684-4	2.1842-2	-2559.5	9.4545	8.7869	8.1193	7.4517	6.9851	1.2251	1.3100	551.2	359	588	.7481	800
810	4.3145-4	2.1573-2	-2547.3	9.4697	8.8021	8.1345	7.4669	7.0003	1.2282	1.3090	554.5	362	595	.7477	810
820	4.2619-4	2.1309-2	-2535.0	9.4848	8.8172	8.1496	7.4820	7.0154	1.2313	1.3080	557.6	365	602	.7473	820
830	4.2105-4	2.1053-2	-2522.6	9.4998	8.8322	8.1646	7.4970	7.0303	1.2344	1.3070	560.8	369	609	.7470	830
840	4.1604-4	2.0802-2	-2510.3	9.5146	8.8470	8.1794	7.5118	7.0451	1.2375	1.3060	564.0	372	616	.7466	840
850	4.1115-4	2.0557-2	-2497.9	9.5292	8.8616	8.1940	7.5264	7.0598	1.2405	1.3050	567.1	375	624	.7463	850
860	4.0637-4	2.0318-2	-2485.5	9.5438	8.8762	8.2086	7.5410	7.0743	1.2435	1.3040	570.2	378	631	.7460	860
870	4.0169-4	2.0085-2	-2473.0	9.5582	8.8906	8.2230	7.5554	7.0887	1.2466	1.3031	573.3	382	638	.7457	870
880	3.9713-4	1.9857-2	-2460.5	9.5724	8.9048	8.2372	7.5696	7.1030	1.2495	1.3021	576.4	385	645	.7454	880
890	3.9267-4	1.9633-2	-2448.0	9.5866	8.9190	8.2514	7.5838	7.1171	1.2525	1.3012	579.5	388	652	.7451	890
900	3.8830-4	1.9415-2	-2435.5	9.6006	8.9330	8.2654	7.5978	7.1311	1.2554	1.3003	582.5	391	659	.7448	900
910	3.8404-4	1.9202-2	-2422.9	9.6145	8.9469	8.2793	7.6117	7.1450	1.2583	1.2994	585.5	394	666	.7445	910
920	3.7986-4	1.8993-2	-2410.3	9.6282	8.9606	8.2930	7.6254	7.1588	1.2612	1.2985	588.5	397	673	.7442	920
930	3.7578-4	1.8789-2	-2397.7	9.6419	8.9743	8.3067	7.6391	7.1724	1.2641	1.2976	591.5	400	680	.7440	930
940	3.7178-4	1.8589-2	-2385.0	9.6554	8.9878	8.3202	7.6526	7.1860	1.2669	1.2968	594.5	403	687	.7437	940
950	3.6787-4	1.8393-2	-2372.3	9.6688	9.0012	8.3336	7.6660	7.1994	1.2697	1.2959	597.4	406	694	.7435	950
960	3.6404-4	1.8202-2	-2359.6	9.6821	9.0145	8.3469	7.6793	7.2127	1.2725	1.2951	600.4	409	701	.7432	960
970	3.6028-4	1.8014-2	-2346.9	9.6953	9.0277	8.3601	7.6925	7.2259	1.2752	1.2943	603.3	412	708	.7430	970
980	3.5661-4	1.7830-2	-2334.1	9.7084	9.0408	8.3732	7.7056	7.2390	1.2779	1.2935	606.2	415	715	.7427	980
990	3.5300-4	1.7650-2	-2321.3	9.7214	9.0538	8.3862	7.7186	7.2520	1.2806	1.2927	609.1	418	722	.7425	990

TABLE 21A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A=0.067624; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.6768;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .13264; H2O= .15592; N2= .70301; O2= .00000; AR= .00843

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4947-4	1.7474-2	-2308.5	9.7343	9.0667	8.3991	7.7315	7.2649	1.2833	1.2919	612.0	421	729	.7423	1000
1050	3.3283-4	1.6642-2	-2244.0	9.7972	9.1296	8.4620	7.7944	7.3278	1.2958	1.2882	626.2	436	763	.7412	1050
1100	3.1770-4	1.5885-2	-2178.9	9.8578	9.1902	8.5226	7.8550	7.3884	1.3078	1.2849	640.1	451	796	.7402	1100
1150	3.0389-4	1.5195-2	-2113.3	9.9162	9.2486	8.5810	7.9134	7.4467	1.3192	1.2817	653.7	465	829	.7393	1150
1200	2.9123-4	1.4561-2	-2047.0	9.9725	9.3049	8.6373	7.9697	7.5031	1.3301	1.2787	667.0	479	862	.7385	1200
1250	2.7958-4	1.3979-2	-1980.3	10.0271	9.3595	8.6919	8.0243	7.5576	1.3404	1.2760	680.0	492	894	.7377	1250
1300	2.6883-4	1.3441-2	-1913.0	10.0798	9.4122	8.7446	8.0770	7.6104	1.3503	1.2734	692.8	506	927	.7370	1300
1350	2.5887-4	1.2943-2	-1845.3	10.1310	9.4634	8.7958	8.1282	7.6615	1.3597	1.2710	705.3	519	959	.7362	1350
1400	2.4962-4	1.2481-2	-1777.0	10.1806	9.5130	8.8454	8.1778	7.7111	1.3686	1.2688	717.6	532	990	.7355	1400
1450	2.4102-4	1.2051-2	-1708.4	10.2287	9.5611	8.8935	8.2259	7.7593	1.3771	1.2667	729.7	545	1022	.7348	1450
1500	2.3298-4	1.1649-2	-1639.3	10.2756	9.6080	8.9404	8.2728	7.8061	1.3852	1.2647	741.6	558	1053	.7341	1500
1550	2.2547-4	1.1273-2	-1569.9	10.3211	9.6535	8.9859	8.3183	7.8517	1.3929	1.2629	753.3	570	1084	.7333	1550
1600	2.1842-4	1.0921-2	-1500.1	10.3655	9.6979	9.0303	8.3627	7.8960	1.4002	1.2611	764.9	583	1114	.7324	1600
1650	2.1180-4	1.0590-2	-1429.9	10.4087	9.7411	9.0735	8.4058	7.9392	1.4071	1.2595	776.2	595	1145	.7316	1650
1700	2.0557-4	1.0279-2	-1359.4	10.4508	9.7832	9.1156	8.4480	7.9813	1.4137	1.2580	787.4	608	1175	.7308	1700
1750	1.9970-4	9.9850-3	-1288.5	10.4918	9.8242	9.1566	8.4890	8.0224	1.4199	1.2566	798.5	620	1205	.7299	1750
1800	1.9415-4	9.7076-3	-1217.4	10.5319	9.8643	9.1967	8.5291	8.0625	1.4258	1.2553	809.4	632	1235	.7291	1800
1850	1.8890-4	9.4453-3	-1145.9	10.5711	9.9035	9.2358	8.5682	8.1016	1.4314	1.2540	820.1	643	1265	.7282	1850
1900	1.8393-4	9.1967-3	-1074.2	10.6093	9.9417	9.2741	8.6065	8.1399	1.4367	1.2528	830.8	655	1294	.7273	1900
1950	1.7922-4	8.9609-3	-1002.3	10.6467	9.9791	9.3115	8.6439	8.1772	1.4417	1.2517	841.2	667	1323	.7264	1950
2000	1.7474-4	8.7369-3	-930.1	10.6832	10.0156	9.3480	8.6804	8.2138	1.4465	1.2507	851.6	678	1352	.7256	2000
2050	1.7048-4	8.5238-3	-857.6	10.7190	10.0514	9.3838	8.7162	8.2496	1.4510	1.2497	861.9	689	1380	.7248	2050
2100	1.6642-4	8.3208-3	-785.0	10.7540	10.0864	9.4188	8.7512	8.2846	1.4553	1.2488	872.0	701	1408	.7239	2100
2150	1.6255-4	8.1273-3	-712.1	10.7883	10.1207	9.4531	8.7855	8.3189	1.4594	1.2479	882.0	712	1436	.7231	2150
2200	1.5885-4	7.9426-3	-639.0	10.8219	10.1543	9.4867	8.8191	8.3525	1.4632	1.2471	891.9	723	1464	.7222	2200
2250	1.5532-4	7.7661-3	-565.8	10.8548	10.1872	9.5196	8.8520	8.3854	1.4668	1.2464	901.7	734	1492	.7214	2250
2300	1.5195-4	7.5973-3	-492.3	10.8871	10.2195	9.5519	8.8843	8.4177	1.4703	1.2456	911.4	744	1519	.7204	2300
2350	1.4871-4	7.4356-3	-418.8	10.9188	10.2512	9.5836	8.9160	8.4493	1.4736	1.2450	921.0	755	1546	.7195	2350
2400	1.4561-4	7.2807-3	-345.0	10.9498	10.2822	9.6146	8.9470	8.4804	1.4767	1.2443	930.5	766	1573	.7186	2400
2450	1.4264-4	7.1321-3	-271.1	10.9803	10.3127	9.6451	8.9775	8.5109	1.4797	1.2437	939.9	776	1600	.7176	2450
2500	1.3979-4	6.9895-3	-197.0	11.0102	10.3426	9.6750	9.0074	8.5408	1.4825	1.2431	949.2	787	1627	.7166	2500
2550	1.3705-4	6.8524-3	-122.8	11.0396	10.3720	9.7044	9.0368	8.5702	1.4851	1.2426	958.5	797	1654	.7155	2550
2600	1.3441-4	6.7207-3	-48.5	11.0685	10.4009	9.7333	9.0657	8.5990	1.4877	1.2421	967.6	807	1681	.7143	2600
2650	1.3188-4	6.5939-3	25.9	11.0968	10.4292	9.7616	9.0940	8.6274	1.4901	1.2416	976.7	817	1708	.7132	2650
2700	1.2943-4	6.4717-3	100.5	11.1247	10.4571	9.7895	9.1219	8.6553	1.4925	1.2411	985.7	827	1734	.7122	2700
2750	1.2708-4	6.3541-3	175.2	11.1521	10.4845	9.8169	9.1493	8.6827	1.4947	1.2407	994.6	837	1760	.7111	2750
2800	1.2481-4	6.2406-3	250.0	11.1791	10.5115	9.8439	9.1763	8.7096	1.4968	1.2402	1003.4	847	1786	.7101	2800
2850	1.2262-4	6.1311-3	324.9	11.2056	10.5380	9.8704	9.2028	8.7362	1.4989	1.2398	1012.2	857	1812	.7092	2850
2900	1.2051-4	6.0254-3	399.9	11.2317	10.5641	9.8965	9.2289	8.7622	1.5009	1.2394	1020.8	867	1837	.7082	2900
2950	1.1847-4	5.9233-3	474.9	11.2573	10.5897	9.9221	9.2545	8.7879	1.5028	1.2391	1029.5	877	1863	.7073	2950
3000	1.1649-4	5.8246-3	550.1	11.2826	10.6150	9.9474	9.2798	8.8132	1.5046	1.2387	1038.0	886	1888	.7065	3000

TABLE 21.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.067624; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.8831-6	-2435.5	9.6006	28.677	391	1.0000	-1.0000	1.2554	1.3003	582.5	659 .745	1.2554	1.3003	582.5	659 .745
950	3.6787-6	-2372.4	9.6688	28.677	406	1.0000	-1.0000	1.2697	1.2959	597.4	694 .743	1.2697	1.2959	597.4	694 .743
1000	3.4948-6	-2308.5	9.7343	28.677	421	1.0000	-1.0000	1.2834	1.2919	612.0	729 .742	1.2833	1.2919	612.0	729 .742
1050	3.3283-6	-2244.0	9.7972	28.677	436	1.0000	-1.0000	1.2960	1.2882	626.2	763 .741	1.2958	1.2882	626.2	763 .741
1100	3.1770-6	-2178.9	9.8578	28.677	451	1.0000	-1.0000	1.3083	1.2847	640.1	797 .740	1.3078	1.2849	640.1	796 .740
1150	3.0389-6	-2113.2	9.9162	28.677	465	1.0001	-1.0000	1.3204	1.2814	653.7	830 .739	1.3192	1.2817	653.7	829 .739
1200	2.9123-6	-2046.9	9.9727	28.677	479	1.0001	-1.0000	1.3324	1.2782	666.9	864 .738	1.3301	1.2788	667.0	862 .738
1250	2.7957-6	-1980.0	10.0273	28.676	492	1.0003	-1.0000	1.3449	1.2750	679.8	898 .737	1.3404	1.2760	680.0	894 .738
1300	2.6882-6	-1912.4	10.0803	28.676	506	1.0005	-1.0000	1.3585	1.2717	692.3	934 .735	1.3503	1.2734	692.8	927 .737
1350	2.5885-6	-1844.1	10.1319	28.675	519	1.0010	-1.0000	1.3739	1.2681	704.6	972 .734	1.3597	1.2711	705.4	959 .736
1400	2.4960-6	-1774.9	10.1822	28.674	532	1.0017	-1.0000	1.3923	1.2641	716.4	1012 .732	1.3686	1.2688	717.7	990 .735
1450	2.4097-6	-1704.8	10.2314	28.671	545	1.0028	-1.0001	1.4151	1.2595	727.7	1058 .729	1.3771	1.2668	729.8	1022 .735
1500	2.3291-6	-1633.3	10.2799	28.668	558	1.0045	-1.0001	1.4442	1.2540	738.6	1110 .726	1.3852	1.2648	741.8	1053 .734
1550	2.2536-6	-1560.2	10.3278	28.663	570	1.0070	-1.0002	1.4820	1.2474	748.9	1173 .721	1.3928	1.2631	753.6	1084 .733
1600	2.1825-6	-1484.9	10.3756	28.655	583	1.0107	-1.0003	1.5311	1.2397	758.6	1248 .715	1.4000	1.2614	765.3	1115 .732
1650	2.1155-6	-1406.9	10.4236	28.643	595	1.0158	-1.0004	1.5949	1.2306	767.7	1342 .707	1.4069	1.2600	776.8	1145 .731
1700	2.0521-6	-1325.1	10.4724	28.627	607	1.0228	-1.0006	1.6769	1.2204	776.3	1460 .698	1.4133	1.2587	788.3	1176 .730
1750	1.9919-6	-1238.8	10.5225	28.604	619	1.0323	-1.0008	1.7813	1.2092	784.3	1609 .686	1.4194	1.2575	799.8	1206 .729
1800	1.9345-6	-1146.6	10.5744	28.573	631	1.0447	-1.0012	1.9124	1.1974	791.9	1798 .671	1.4251	1.2566	811.3	1236 .727
1850	1.8795-6	-1047.0	10.6290	28.532	642	1.0608	-1.0017	2.0748	1.1853	799.4	2040 .653	1.4304	1.2558	822.8	1266 .726
1900	1.8266-6	-938.5	10.6868	28.479	654	1.0812	-1.0023	2.2730	1.1735	806.8	2347 .633	1.4353	1.2554	834.5	1295 .724
1950	1.7755-6	-819.1	10.7489	28.410	665	1.1067	-1.0032	2.5113	1.1622	814.4	2735 .610	1.4398	1.2551	846.3	1325 .722
2000	1.7258-6	-686.6	10.8159	28.322	676	1.1380	-1.0042	2.7934	1.1519	822.4	3225 .585	1.4440	1.2552	858.5	1355 .720
2050	1.6772-6	-538.9	10.8888	28.213	686	1.1757	-1.0055	3.1226	1.1428	830.9	3837 .558	1.4478	1.2556	870.9	1384 .717
2100	1.6295-6	-373.5	10.9685	28.079	696	1.2206	-1.0071	3.5016	1.1349	840.1	4596 .530	1.4513	1.2563	883.9	1415 .714
2150	1.5824-6	-187.9	11.0559	27.917	706	1.2731	-1.0091	3.9323	1.1282	850.0	5529 .502	1.4545	1.2575	897.3	1446 .710
2200	1.5357-6	20.6	11.1517	27.723	716	1.3338	-1.0115	4.4167	1.1227	860.7	6662 .475	1.4574	1.2591	911.5	1478 .706
2250	1.4892-6	254.7	11.2569	27.495	725	1.4033	-1.0143	4.9566	1.1184	872.3	8018 .448	1.4601	1.2612	926.3	1513 .700
2300	1.4428-6	517.2	11.3723	27.230	734	1.4820	-1.0176	5.5539	1.1150	884.9	9612 .424	1.4627	1.2638	942.1	1549 .693
2350	1.3962-6	811.1	11.4986	26.924	743	1.5700	-1.0215	6.2096	1.1124	898.5	11440 .403	1.4653	1.2670	958.9	1590 .684
2400	1.3495-6	1139.1	11.6368	26.576	751	1.6670	-1.0259	6.9223	1.1107	913.2	13477 .386	1.4680	1.2708	976.8	1634 .674
2450	1.3025-6	1504.1	11.7873	26.185	759	1.7718	-1.0309	7.6846	1.1096	929.1	15659 .372	1.4708	1.2753	996.0	1684 .663
2500	1.2553-6	1908.1	11.9505	25.752	766	1.8814	-1.0363	8.4783	1.1092	946.2	17881 .363	1.4738	1.2805	1016.7	1739 .650
2550	1.2081-6	2351.9	12.1262	25.279	774	1.9907	-1.0420	9.2688	1.1094	964.6	19990 .359	1.4771	1.2864	1038.7	1801 .635
2600	1.1611-6	2834.1	12.3134	24.772	781	2.0918	-1.0476	10.0020	1.1102	984.3	21796 .359	1.4808	1.2931	1062.3	1869 .619
2650	1.1148-6	3349.9	12.5099	24.242	789	2.1747	-1.0525	10.6048	1.1116	1005.1	23091 .362	1.4847	1.3004	1087.1	1942 .603
2700	1.0698-6	3891.0	12.7122	23.703	796	2.2283	-1.0563	10.9940	1.1137	1027.0	23692 .370	1.4888	1.3082	1113.1	2019 .587
2750	1.0268-6	4444.5	12.9153	23.170	804	2.2432	-1.0584	11.0945	1.1165	1049.7	23489 .380	1.4932	1.3164	1139.7	2097 .573
2800	9.8629-7	4994.9	13.1137	22.661	812	2.2145	-1.0584	10.8632	1.1201	1072.7	22486 .392	1.4975	1.3245	1166.5	2176 .559
2850	9.4892-7	5525.4	13.3015	22.192	820	2.1441	-1.0563	10.3084	1.1246	1095.8	20813 .406	1.5017	1.3324	1192.8	2252 .547
2900	9.1497-7	6021.3	13.4740	21.773	829	2.0405	-1.0523	9.4926	1.1302	1118.7	18696 .421	1.5057	1.3398	1218.1	2323 .537
2950	8.8452-7	6472.0	13.6281	21.411	838	1.9165	-1.0471	8.5145	1.1369	1141.2	16390 .435	1.5094	1.3464	1241.9	2390 .529
3000	8.5742-7	6871.9	13.7625	21.107	847	1.7855	-1.0412	7.4804	1.1451	1163.3	14118 .449	1.5126	1.3521	1264.1	2450 .523

TABLE 21.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.067624; EQUIV. RATIO ◘ 1.000; CHEM. EQUIV. RATIO ◘ 1.0000; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8831-5	-2435.5	8.9330	28.677	391	1.0000	-1.0000	1.2554	1.3003	582.5	659	.745	1.2554	1.3003	582.5	659	.745
950	3.6787-5	-2372.4	9.0012	28.677	406	1.0000	-1.0000	1.2697	1.2959	597.4	694	.743	1.2697	1.2959	597.4	694	.743
1000	3.4948-5	-2308.5	9.0667	28.677	421	1.0000	-1.0000	1.2833	1.2919	612.0	729	.742	1.2833	1.2919	612.0	729	.742
1050	3.3283-5	-2244.0	9.1296	28.677	436	1.0000	-1.0000	1.2959	1.2882	626.2	763	.741	1.2958	1.2882	626.2	763	.741
1100	3.1770-5	-2178.9	9.1902	28.677	451	1.0000	-1.0000	1.3080	1.2848	640.1	796	.740	1.3078	1.2849	640.1	796	.740
1150	3.0389-5	-2113.3	9.2486	28.677	465	1.0000	-1.0000	1.3197	1.2816	653.7	830	.739	1.3192	1.2817	653.7	829	.739
1200	2.9123-5	-2047.0	9.3050	28.677	479	1.0001	-1.0000	1.3312	1.2785	666.9	863	.738	1.3301	1.2788	667.0	862	.738
1250	2.7958-5	-1980.1	9.3596	28.677	492	1.0001	-1.0000	1.3426	1.2755	679.9	896	.737	1.3404	1.2760	680.0	894	.738
1300	2.6882-5	-1912.7	9.4125	28.676	506	1.0003	-1.0000	1.3542	1.2726	692.6	930	.736	1.3503	1.2734	692.8	927	.737
1350	2.5886-5	-1844.7	9.4638	28.676	519	1.0005	-1.0000	1.3664	1.2696	705.0	965	.735	1.3597	1.2710	705.3	959	.736
1400	2.4961-5	-1776.0	9.5137	28.675	532	1.0008	-1.0000	1.3798	1.2666	717.0	1001	.734	1.3686	1.2688	717.7	990	.735
1450	2.4100-5	-1706.7	9.5624	28.674	545	1.0013	-1.0000	1.3951	1.2632	728.8	1039	.732	1.3771	1.2667	729.8	1022	.735
1500	2.3295-5	-1636.5	9.6100	28.673	558	1.0021	-1.0000	1.4131	1.2595	740.2	1080	.730	1.3852	1.2648	741.7	1053	.734
1550	2.2541-5	-1565.3	9.6567	28.670	570	1.0033	-1.0001	1.4349	1.2553	751.2	1125	.728	1.3928	1.2630	753.5	1084	.733
1600	2.1834-5	-1492.9	9.7026	28.666	583	1.0050	-1.0001	1.4619	1.2504	761.8	1176	.725	1.4001	1.2613	765.1	1115	.732
1650	2.1169-5	-1419.0	9.7481	28.661	595	1.0074	-1.0002	1.4954	1.2448	771.9	1235	.721	1.4070	1.2597	776.5	1145	.731
1700	2.0541-5	-1343.2	9.7934	28.653	607	1.0106	-1.0003	1.5373	1.2384	781.6	1304	.716	1.4135	1.2583	787.9	1175	.730
1750	1.9946-5	-1265.1	9.8386	28.643	619	1.0150	-1.0004	1.5894	1.2311	790.8	1386	.710	1.4197	1.2570	799.1	1206	.729
1800	1.9383-5	-1184.1	9.8843	28.629	631	1.0207	-1.0006	1.6538	1.2231	799.6	1485	.703	1.4254	1.2559	810.3	1235	.728
1850	1.8846-5	-1099.5	9.9306	28.610	643	1.0281	-1.0008	1.7327	1.2143	808.0	1603	.695	1.4309	1.2549	821.4	1265	.727
1900	1.8334-5	-1010.5	9.9781	28.585	654	1.0375	-1.0011	1.8281	1.2051	816.1	1747	.685	1.4360	1.2540	832.5	1294	.726
1950	1.7844-5	-916.4	10.0270	28.553	666	1.0493	-1.0014	1.9424	1.1956	824.0	1922	.673	1.4408	1.2533	843.6	1323	.725
2000	1.7373-5	-816.0	10.0778	28.512	677	1.0637	-1.0019	2.0774	1.1861	831.7	2133	.659	1.4452	1.2528	854.8	1352	.723
2050	1.6919-5	-708.2	10.1310	28.461	688	1.0812	-1.0025	2.2349	1.1769	839.5	2388	.644	1.4493	1.2525	866.1	1381	.722
2100	1.6480-5	-592.1	10.1870	28.399	699	1.1021	-1.0032	2.4164	1.1681	847.5	2695	.626	1.4531	1.2523	877.5	1410	.720
2150	1.6054-5	-466.2	10.2462	28.323	709	1.1266	-1.0041	2.6226	1.1600	855.7	3062	.607	1.4566	1.2524	889.1	1438	.718
2200	1.5638-5	-329.4	10.3091	28.231	719	1.1550	-1.0052	2.8541	1.1527	864.2	3500	.587	1.4597	1.2527	900.9	1467	.716
2250	1.5232-5	-180.4	10.3761	28.123	730	1.1874	-1.0064	3.1109	1.1462	873.2	4019	.565	1.4626	1.2533	913.1	1496	.713
2300	1.4834-5	-17.9	10.4475	27.997	739	1.2241	-1.0079	3.3923	1.1406	882.7	4629	.542	1.4653	1.2542	925.6	1525	.711
2350	1.4443-5	159.3	10.5237	27.850	749	1.2650	-1.0096	3.6978	1.1359	892.7	5342	.518	1.4677	1.2554	938.5	1555	.707
2400	1.4056-5	352.3	10.6050	27.682	758	1.3104	-1.0115	4.0266	1.1319	903.3	6169	.495	1.4699	1.2568	951.8	1586	.703
2450	1.3675-5	562.3	10.6916	27.492	767	1.3601	-1.0138	4.3782	1.1287	914.5	7118	.472	1.4719	1.2586	965.7	1618	.698
2500	1.3297-5	790.5	10.7837	27.278	776	1.4144	-1.0163	4.7523	1.1261	926.4	8194	.450	1.4739	1.2607	980.1	1652	.693
2550	1.2922-5	1037.9	10.8817	27.039	785	1.4731	-1.0191	5.1487	1.1242	938.9	9400	.430	1.4757	1.2632	995.2	1688	.686
2600	1.2550-5	1305.7	10.9857	26.776	793	1.5363	-1.0223	5.5672	1.1228	952.1	10726	.412	1.4776	1.2661	1011.0	1727	.679
2650	1.2181-5	1595.0	11.0959	26.487	802	1.6037	-1.0258	6.0061	1.1219	966.0	12152	.396	1.4795	1.2693	1027.6	1769	.671
2700	1.1813-5	1906.6	11.2124	26.173	810	1.6746	-1.0296	6.4619	1.1214	980.7	13648	.383	1.4816	1.2729	1044.9	1814	.661
2750	1.1448-5	2241.3	11.3352	25.833	818	1.7477	-1.0337	6.9273	1.1214	996.2	15165	.374	1.4837	1.2770	1063.1	1864	.651
2800	1.1086-5	2599.3	11.4642	25.471	826	1.8210	-1.0379	7.3902	1.1218	1012.6	16641	.367	1.4860	1.2815	1082.3	1917	.640
2850	1.0727-5	2980.0	11.5989	25.088	834	1.8916	-1.0422	7.8327	1.1225	1029.7	17999	.363	1.4885	1.2864	1102.3	1974	.628
2900	1.0374-5	3381.9	11.7387	24.687	841	1.9559	-1.0464	8.2316	1.1237	1047.6	19157	.362	1.4911	1.2918	1123.2	2036	.616
2950	1.0029-5	3802.0	11.8823	24.276	849	2.0095	-1.0502	8.5594	1.1254	1066.3	20030	.363	1.4940	1.2974	1144.9	2101	.604
3000	9.6921-6	4236.1	12.0283	23.859	857	2.0481	-1.0533	8.7871	1.1275	1085.7	20546	.367	1.4969	1.3034	1167.3	2168	.592

TABLE 21.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.067624; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S	
900	3.8831-4	-2435.5	8.2654	28.677	391	1.0000	-1.0000	1.2554	1.3003	582.5	659 .745	1.2554	1.3003	582.5	659 .745
950	3.6787-4	-2372.4	8.3336	28.677	406	1.0000	-1.0000	1.2697	1.2959	597.4	694 .743	1.2697	1.2959	597.4	694 .743
1000	3.4947-4	-2308.5	8.3991	28.677	421	1.0000	-1.0000	1.2833	1.2919	612.0	729 .742	1.2833	1.2919	612.0	729 .742
1050	3.3283-4	-2244.0	8.4620	28.677	436	1.0000	-1.0000	1.2959	1.2882	626.2	763 .741	1.2958	1.2882	626.2	763 .741
1100	3.1770-4	-2179.0	8.5226	28.677	451	1.0000	-1.0000	1.3079	1.2848	640.1	796 .740	1.3078	1.2849	640.1	796 .740
1150	3.0389-4	-2113.3	8.5810	28.677	465	1.0000	-1.0000	1.3194	1.2816	653.7	829 .739	1.3192	1.2817	653.7	829 .739
1200	2.9123-4	-2047.0	8.6374	28.677	479	1.0000	-1.0000	1.3306	1.2786	667.0	862 .738	1.3301	1.2787	667.0	862 .738
1250	2.7958-4	-1980.2	8.6919	28.677	492	1.0001	-1.0000	1.3414	1.2758	680.0	895 .738	1.3404	1.2760	680.0	894 .738
1300	2.6882-4	-1912.9	8.7447	28.677	506	1.0001	-1.0000	1.3521	1.2730	692.7	928 .737	1.3503	1.2734	692.8	927 .737
1350	2.5887-4	-1845.0	8.7960	28.676	519	1.0002	-1.0000	1.3629	1.2704	705.2	961 .736	1.3597	1.2710	705.3	959 .736
1400	2.4962-4	-1776.6	8.8457	28.676	532	1.0004	-1.0000	1.3740	1.2677	717.3	995 .735	1.3686	1.2688	717.7	990 .736
1450	2.4101-4	-1707.6	8.8941	28.676	545	1.0006	-1.0000	1.3857	1.2650	729.3	1030 .734	1.3771	1.2667	729.8	1022 .735
1500	2.3297-4	-1638.0	8.9413	28.675	558	1.0010	-1.0000	1.3985	1.2622	740.9	1065 .732	1.3852	1.2647	741.7	1053 .734
1550	2.2544-4	-1567.7	8.9874	28.674	570	1.0015	-1.0000	1.4129	1.2592	752.3	1103 .731	1.3929	1.2629	753.4	1084 .733
1600	2.1838-4	-1496.7	9.0325	28.672	583	1.0023	-1.0001	1.4296	1.2559	763.3	1143 .729	1.4001	1.2612	765.0	1115 .732
1650	2.1175-4	-1424.7	9.0768	28.669	595	1.0035	-1.0001	1.4492	1.2522	774.1	1187 .727	1.4070	1.2596	776.4	1145 .731
1700	2.0549-4	-1351.7	9.1204	28.666	607	1.0050	-1.0001	1.4725	1.2482	784.5	1235 .724	1.4136	1.2582	787.6	1175 .731
1750	1.9959-4	-1277.4	9.1635	28.661	620	1.0070	-1.0002	1.5005	1.2436	794.6	1289 .721	1.4198	1.2568	798.8	1205 .730
1800	1.9400-4	-1201.5	9.2062	28.654	631	1.0097	-1.0003	1.5342	1.2385	804.3	1350 .717	1.4256	1.2555	809.8	1235 .729
1850	1.8870-4	-1123.8	9.2488	28.645	643	1.0132	-1.0004	1.5745	1.2328	813.6	1420 .713	1.4312	1.2544	820.7	1265 .728
1900	1.8366-4	-1043.9	9.2914	28.634	655	1.0176	-1.0005	1.6227	1.2267	822.7	1500 .708	1.4364	1.2534	831.6	1294 .727
1950	1.7885-4	-961.4	9.3343	28.619	666	1.0231	-1.0007	1.6797	1.2201	831.4	1593 .703	1.4413	1.2525	842.3	1323 .726
2000	1.7427-4	-875.8	9.3776	28.599	677	1.0299	-1.0009	1.7466	1.2131	839.8	1700 .696	1.4459	1.2517	853.1	1352 .725
2050	1.6987-4	-786.6	9.4217	28.576	689	1.0381	-1.0012	1.8245	1.2059	848.1	1825 .688	1.4502	1.2510	863.8	1380 .723
2100	1.6566-4	-693.2	9.4667	28.546	700	1.0480	-1.0015	1.9141	1.1985	856.2	1971 .680	1.4542	1.2505	874.6	1408 .722
2150	1.6160-4	-595.0	9.5129	28.510	710	1.0597	-1.0019	2.0163	1.1912	864.2	2139 .670	1.4579	1.2500	885.3	1436 .721
2200	1.5769-4	-491.3	9.5606	28.467	721	1.0733	-1.0024	2.1316	1.1841	872.3	2334 .659	1.4614	1.2498	896.1	1464 .720
2250	1.5390-4	-381.6	9.6099	28.415	732	1.0890	-1.0030	2.2601	1.1772	880.4	2559 .646	1.4646	1.2497	907.0	1492 .718
2300	1.5023-4	-265.1	9.6611	28.354	742	1.1069	-1.0037	2.4018	1.1708	888.6	2817 .633	1.4675	1.2497	918.1	1520 .717
2350	1.4667-4	-141.2	9.7144	28.283	752	1.1270	-1.0045	2.5565	1.1649	897.1	3112 .618	1.4702	1.2499	929.2	1547 .715
2400	1.4320-4	-9.2	9.7699	28.201	762	1.1494	-1.0054	2.7236	1.1596	905.8	3448 .602	1.4727	1.2503	940.6	1575 .713
2450	1.3981-4	131.4	9.8279	28.107	772	1.1741	-1.0064	2.9021	1.1548	914.8	3828 .585	1.4750	1.2509	952.1	1603 .710
2500	1.3650-4	281.2	9.8884	28.001	782	1.2009	-1.0076	3.0911	1.1507	924.2	4258 .567	1.4770	1.2516	963.9	1631 .708
2550	1.3325-4	440.6	9.9516	27.882	791	1.2299	-1.0089	3.2895	1.1471	933.9	4741 .549	1.4789	1.2526	975.9	1660 .705
2600	1.3007-4	610.2	10.0174	27.749	800	1.2610	-1.0104	3.4962	1.1440	944.0	5282 .530	1.4806	1.2537	988.3	1689 .702
2650	1.2694-4	790.4	10.0860	27.603	810	1.2940	-1.0120	3.7103	1.1415	954.5	5882 .511	1.4822	1.2551	1000.9	1719 .698
2700	1.2387-4	981.4	10.1574	27.443	819	1.3290	-1.0137	3.9310	1.1395	965.5	6545 .492	1.4836	1.2566	1013.9	1750 .694
2750	1.2084-4	1183.6	10.2316	27.269	827	1.3660	-1.0157	4.1579	1.1379	976.8	7272 .473	1.4850	1.2584	1027.2	1782 .690
2800	1.1786-4	1397.3	10.3086	27.080	836	1.4048	-1.0178	4.3907	1.1367	988.5	8063 .455	1.4864	1.2603	1040.9	1815 .685
2850	1.1493-4	1622.8	10.3884	26.877	845	1.4455	-1.0200	4.6294	1.1358	1000.7	8915 .439	1.4877	1.2625	1055.0	1850 .679
2900	1.1203-4	1860.3	10.4711	26.660	853	1.4879	-1.0225	4.8735	1.1353	1013.3	9821 .423	1.4891	1.2649	1069.6	1886 .673
2950	1.0918-4	2110.2	10.5565	26.429	861	1.5321	-1.0251	5.1226	1.1351	1026.4	10771 .410	1.4905	1.2675	1084.6	1925 .667
3000	1.0636-4	2372.6	10.6447	26.184	870	1.5775	-1.0279	5.3753	1.1352	1039.9	11752 .398	1.4919	1.2704	1100.1	1965 .660

TABLE 21.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.067624; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.8830-3	-2435.5	7.5978	28.677	391	1.0000	-1.0000	1.2554	1.3003	582.5	659 .745	1.2554	1.3003	582.5	659 .745
950	3.6787-3	-2372.4	7.6660	28.677	406	1.0000	-1.0000	1.2697	1.2959	597.4	694 .743	1.2697	1.2959	597.4	694 .743
1000	3.4947-3	-2308.5	7.7315	28.677	421	1.0000	-1.0000	1.2833	1.2919	612.0	729 .742	1.2833	1.2919	612.0	729 .742
1050	3.3283-3	-2244.0	7.7944	28.677	436	1.0000	-1.0000	1.2958	1.2882	626.2	763 .741	1.2958	1.2882	626.2	763 .741
1100	3.1770-3	-2179.0	7.8550	28.677	451	1.0000	-1.0000	1.3078	1.2848	640.1	796 .740	1.3078	1.2849	640.1	796 .740
1150	3.0389-3	-2113.3	7.9134	28.677	465	1.0000	-1.0000	1.3193	1.2817	653.7	829 .739	1.3192	1.2817	653.7	829 .739
1200	2.9123-3	-2047.0	7.9698	28.677	479	1.0000	-1.0000	1.3303	1.2787	667.0	862 .738	1.3301	1.2787	667.0	862 .738
1250	2.7958-3	-1980.3	8.0243	28.677	492	1.0000	-1.0000	1.3409	1.2759	680.0	895 .738	1.3404	1.2760	680.0	894 .738
1300	2.6883-3	-1912.9	8.0771	28.677	506	1.0001	-1.0000	1.3512	1.2732	692.8	927 .737	1.3503	1.2734	692.8	927 .737
1350	2.5887-3	-1845.1	8.1283	28.677	519	1.0001	-1.0000	1.3612	1.2707	705.2	960 .736	1.3597	1.2710	705.3	959 .736
1400	2.4962-3	-1776.8	8.1779	28.676	532	1.0002	-1.0000	1.3712	1.2683	717.5	993 .735	1.3686	1.2688	717.6	990 .736
1450	2.4101-3	-1708.0	8.2262	28.676	545	1.0003	-1.0000	1.3813	1.2659	729.5	1025 .734	1.3771	1.2667	729.7	1022 .735
1500	2.3298-3	-1638.7	8.2732	28.676	558	1.0005	-1.0000	1.3916	1.2635	741.3	1059 .733	1.3852	1.2647	741.7	1053 .734
1550	2.2546-3	-1568.8	8.3190	28.675	570	1.0007	-1.0000	1.4026	1.2611	752.8	1093 .732	1.3929	1.2629	753.4	1084 .733
1600	2.1840-3	-1498.4	8.3638	28.674	583	1.0011	-1.0000	1.4144	1.2586	764.1	1128 .731	1.4002	1.2612	764.9	1115 .732
1650	2.1178-3	-1427.4	8.4075	28.673	595	1.0016	-1.0000	1.4274	1.2559	775.2	1165 .729	1.4071	1.2596	776.3	1145 .732
1700	2.0554-3	-1355.6	8.4503	28.672	608	1.0024	-1.0001	1.4420	1.2531	786.0	1204 .728	1.4136	1.2581	787.5	1175 .731
1750	1.9965-3	-1283.1	8.4923	28.669	620	1.0033	-1.0001	1.4587	1.2501	796.5	1245 .726	1.4198	1.2567	798.6	1205 .730
1800	1.9408-3	-1209.7	8.5337	28.666	631	1.0046	-1.0001	1.4780	1.2468	806.8	1290 .724	1.4257	1.2554	809.6	1235 .729
1850	1.8881-3	-1135.3	8.5745	28.662	643	1.0062	-1.0002	1.5003	1.2432	816.8	1338 .721	1.4313	1.2542	820.4	1265 .728
1900	1.8380-3	-1059.6	8.6148	28.656	655	1.0083	-1.0002	1.5262	1.2392	826.5	1391 .719	1.4365	1.2531	831.1	1294 .727
1950	1.7905-3	-982.6	8.6549	28.649	666	1.0109	-1.0003	1.5563	1.2350	836.0	1449 .716	1.4415	1.2521	841.8	1323 .726
2000	1.7451-3	-903.9	8.6947	28.640	678	1.0141	-1.0004	1.5911	1.2304	845.2	1514 .712	1.4462	1.2512	852.3	1352 .725
2050	1.7019-3	-823.4	8.7345	28.629	689	1.0181	-1.0005	1.6311	1.2255	854.2	1586 .708	1.4506	1.2503	862.8	1380 .724
2100	1.6606-3	-740.7	8.7743	28.615	700	1.0228	-1.0007	1.6769	1.2203	862.9	1667 .704	1.4548	1.2496	873.2	1408 .723
2150	1.6210-3	-655.6	8.8143	28.598	711	1.0284	-1.0009	1.7289	1.2150	871.5	1758 .699	1.4586	1.2489	883.6	1436 .722
2200	1.5830-3	-567.7	8.8548	28.577	722	1.0349	-1.0011	1.7874	1.2095	879.9	1860 .694	1.4623	1.2484	893.9	1464 .721
2250	1.5465-3	-476.7	8.8956	28.552	733	1.0426	-1.0014	1.8529	1.2040	888.2	1974 .688	1.4657	1.2479	904.2	1492 .720
2300	1.5113-3	-382.3	8.9371	28.523	743	1.0513	-1.0017	1.9254	1.1985	896.4	2102 .681	1.4689	1.2476	914.6	1519 .719
2350	1.4774-3	-284.1	8.9794	28.488	754	1.0612	-1.0021	2.0051	1.1931	904.6	2244 .673	1.4719	1.2473	924.9	1546 .717
2400	1.4445-3	-181.7	9.0225	28.448	764	1.0724	-1.0026	2.0919	1.1878	912.8	2403 .665	1.4746	1.2472	935.3	1573 .716
2450	1.4128-3	-74.8	9.0666	28.402	774	1.0849	-1.0031	2.1856	1.1828	921.1	2579 .656	1.4772	1.2472	945.8	1600 .715
2500	1.3820-3	37.0	9.1117	28.350	784	1.0986	-1.0036	2.2859	1.1781	929.4	2773 .646	1.4795	1.2472	956.3	1627 .713
2550	1.3520-3	153.9	9.1581	28.290	794	1.1136	-1.0043	2.3923	1.1738	937.9	2988 .636	1.4817	1.2474	966.9	1655 .711
2600	1.3229-3	276.3	9.2056	28.224	804	1.1298	-1.0050	2.5041	1.1698	946.6	3224 .624	1.4837	1.2477	977.6	1682 .709
2650	1.2945-3	404.4	9.2544	28.149	814	1.1472	-1.0058	2.6207	1.1662	955.4	3482 .612	1.4855	1.2482	988.4	1709 .707
2700	1.2668-3	538.4	9.3045	28.067	823	1.1656	-1.0067	2.7413	1.1630	964.5	3764 .600	1.4871	1.2487	999.4	1736 .705
2750	1.2398-3	678.6	9.3559	27.977	833	1.1851	-1.0076	2.8651	1.1602	973.7	4069 .586	1.4887	1.2494	1010.5	1763 .703
2800	1.2134-3	825.0	9.4087	27.879	842	1.2056	-1.0087	2.9912	1.1578	983.3	4401 .572	1.4901	1.2502	1021.8	1790 .701
2850	1.1876-3	977.7	9.4627	27.772	851	1.2269	-1.0098	3.1188	1.1557	993.0	4759 .558	1.4914	1.2512	1033.2	1818 .698
2900	1.1623-3	1136.9	9.5181	27.658	860	1.2489	-1.0109	3.2475	1.1540	1003.0	5145 .543	1.4926	1.2522	1044.8	1846 .695
2950	1.1375-3	1302.5	9.5747	27.535	869	1.2717	-1.0122	3.3765	1.1526	1013.3	5559 .528	1.4937	1.2534	1056.6	1874 .693
3000	1.1132-3	1474.5	9.6325	27.404	878	1.2951	-1.0136	3.5056	1.1515	1023.8	6002 .513	1.4948	1.2547	1068.6	1903 .690

TABLE 21.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.067624; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	1.9415-2	-2435.5	7.1311	28.677	391	1.0000	-1.0000	1.2554	1.3003	582.5	659 .745	1.2554	1.3003	582.5	659 .745
950	1.8393-2	-2372.4	7.1994	28.677	406	1.0000	-1.0000	1.2697	1.2959	597.4	694 .743	1.2697	1.2959	597.4	694 .743
1000	1.7474-2	-2308.5	7.2649	28.677	421	1.0000	-1.0000	1.2833	1.2919	612.0	729 .742	1.2833	1.2919	612.0	729 .742
1050	1.6642-2	-2244.0	7.3278	28.677	436	1.0000	-1.0000	1.2958	1.2882	626.2	763 .741	1.2958	1.2882	626.2	763 .741
1100	1.5885-2	-2179.0	7.3883	28.677	451	1.0000	-1.0000	1.3078	1.2849	640.1	796 .740	1.3078	1.2849	640.1	796 .740
1150	1.5195-2	-2113.3	7.4467	28.677	465	1.0000	-1.0000	1.3193	1.2817	653.7	829 .739	1.3192	1.2817	653.7	829 .739
1200	1.4561-2	-2047.0	7.5031	28.677	479	1.0000	-1.0000	1.3302	1.2787	667.0	862 .738	1.3301	1.2787	667.0	862 .738
1250	1.3979-2	-1980.3	7.5576	28.677	492	1.0000	-1.0000	1.3407	1.2759	680.0	895 .738	1.3404	1.2760	680.0	894 .738
1300	1.3441-2	-1913.0	7.6104	28.677	506	1.0000	-1.0000	1.3508	1.2733	692.8	927 .737	1.3503	1.2734	692.8	927 .737
1350	1.2943-2	-1845.2	7.6616	28.677	519	1.0001	-1.0000	1.3606	1.2708	705.3	959 .736	1.3597	1.2710	705.3	959 .736
1400	1.2481-2	-1776.9	7.7112	28.677	532	1.0001	-1.0000	1.3702	1.2685	717.6	992 .735	1.3686	1.2688	717.6	990 .736
1450	1.2051-2	-1708.2	7.7595	28.676	545	1.0002	-1.0000	1.3796	1.2662	729.6	1024 .734	1.3771	1.2667	729.7	1022 .735
1500	1.1649-2	-1638.9	7.8064	28.676	558	1.0003	-1.0000	1.3891	1.2640	741.4	1056 .734	1.3852	1.2647	741.6	1053 .734
1550	1.1273-2	-1569.2	7.8521	28.676	570	1.0004	-1.0000	1.3988	1.2618	753.0	1089 .733	1.3929	1.2629	753.4	1084 .733
1600	1.0921-2	-1499.1	7.8967	28.675	583	1.0007	-1.0000	1.4088	1.2596	764.4	1123 .731	1.4002	1.2612	764.9	1115 .732
1650	1.0589-2	-1428.4	7.9402	28.675	595	1.0010	-1.0000	1.4194	1.2573	775.6	1157 .730	1.4071	1.2596	776.3	1145 .732
1700	1.0278-2	-1357.1	7.9827	28.674	608	1.0014	-1.0000	1.4308	1.2550	786.5	1192 .729	1.4136	1.2581	787.5	1175 .731
1750	9.9834-3	-1285.3	8.0244	28.672	620	1.0020	-1.0000	1.4434	1.2526	797.3	1229 .728	1.4199	1.2566	798.6	1205 .730
1800	9.7055-3	-1212.7	8.0652	28.670	632	1.0027	-1.0001	1.4574	1.2500	807.8	1268 .726	1.4258	1.2553	809.5	1235 .729
1850	9.4423-3	-1139.5	8.1054	28.668	643	1.0037	-1.0001	1.4731	1.2473	818.1	1308 .724	1.4313	1.2541	820.3	1265 .728
1900	9.1928-3	-1065.4	8.1449	28.665	655	1.0050	-1.0001	1.4909	1.2443	828.1	1352 .722	1.4366	1.2530	831.0	1294 .727
1950	8.9557-3	-990.4	8.1839	28.660	666	1.0065	-1.0002	1.5111	1.2412	837.9	1398 .720	1.4416	1.2519	841.6	1323 .726
2000	8.7302-3	-914.2	8.2224	28.655	678	1.0084	-1.0002	1.5340	1.2378	847.5	1449 .718	1.4463	1.2510	852.0	1352 .725
2050	8.5153-3	-836.9	8.2606	28.648	689	1.0108	-1.0003	1.5601	1.2342	856.9	1503 .715	1.4508	1.2501	862.4	1380 .724
2100	8.3101-3	-758.2	8.2986	28.640	700	1.0136	-1.0004	1.5895	1.2304	866.1	1562 .713	1.4550	1.2493	872.7	1408 .724
2150	8.1139-3	-677.9	8.3363	28.630	711	1.0169	-1.0005	1.6227	1.2263	875.0	1627 .709	1.4589	1.2485	882.9	1436 .723
2200	7.9261-3	-595.8	8.3741	28.617	722	1.0209	-1.0007	1.6600	1.2221	883.8	1698 .706	1.4627	1.2479	893.1	1464 .722
2250	7.7459-3	-511.8	8.4118	28.602	733	1.0255	-1.0008	1.7014	1.2178	892.5	1776 .702	1.4662	1.2473	903.2	1492 .721
2300	7.5729-3	-425.6	8.4497	28.585	744	1.0308	-1.0010	1.7473	1.2134	901.0	1862 .698	1.4694	1.2468	913.3	1519 .719
2350	7.4063-3	-337.0	8.4878	28.564	754	1.0368	-1.0013	1.7978	1.2089	909.4	1956 .693	1.4725	1.2464	923.3	1546 .718
2400	7.2459-3	-245.8	8.5263	28.540	765	1.0437	-1.0015	1.8530	1.2044	917.7	2059 .688	1.4754	1.2460	933.4	1573 .717
2450	7.0911-3	-151.6	8.5651	28.512	775	1.0513	-1.0018	1.9127	1.2000	925.9	2172 .683	1.4781	1.2458	943.4	1600 .716
2500	6.9415-3	-54.4	8.6043	28.480	785	1.0598	-1.0022	1.9770	1.1957	934.2	2294 .677	1.4806	1.2456	953.5	1627 .715
2550	6.7967-3	46.1	8.6442	28.444	795	1.0692	-1.0026	2.0457	1.1916	942.4	2428 .670	1.4829	1.2455	963.5	1654 .713
2600	6.6564-3	150.2	8.6846	28.403	805	1.0794	-1.0030	2.1185	1.1876	950.7	2574 .663	1.4851	1.2455	973.6	1681 .712
2650	6.5203-3	258.1	8.7257	28.357	815	1.0905	-1.0035	2.1952	1.1839	959.1	2731 .655	1.4871	1.2456	983.8	1707 .710
2700	6.3880-3	369.8	8.7674	28.306	825	1.1024	-1.0041	2.2752	1.1804	967.6	2900 .647	1.4890	1.2458	994.0	1734 .708
2750	6.2594-3	485.6	8.8099	28.249	835	1.1151	-1.0046	2.3581	1.1772	976.1	3082 .639	1.4907	1.2460	1004.2	1760 .707
2800	6.1341-3	605.7	8.8532	28.187	844	1.1285	-1.0053	2.4435	1.1743	984.8	3276 .629	1.4923	1.2464	1014.6	1786 .705
2850	6.0121-3	730.0	8.8972	28.120	854	1.1426	-1.0060	2.5307	1.1717	993.7	3485 .620	1.4938	1.2468	1025.0	1813 .703
2900	5.8930-3	858.8	8.9420	28.047	863	1.1572	-1.0067	2.6192	1.1694	1002.6	3707 .610	1.4952	1.2473	1035.5	1839 .702
2950	5.7769-3	991.9	8.9875	27.968	872	1.1724	-1.0076	2.7084	1.1673	1011.8	3943 .599	1.4964	1.2479	1046.1	1865 .700
3000	5.6634-3	1129.6	9.0338	27.883	881	1.1881	-1.0084	2.7977	1.1656	1021.1	4193 .588	1.4976	1.2486	1056.9	1891 .698

TABLE 21C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.067624; EQUIV.RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.070-5	-3516.7	6.7933	28.677	1.0648	1.867-5	30.644	128	1.000	-1.000	0.9696	1.3885	274	170	.734	200
220	1.877-5	-3492.2	6.9094	28.677	1.5468	1.696-5	30.613	139	1.000	-1.000	0.9745	1.3864	288	186	.731	220
240	1.679-5	-3433.6	7.1620	28.677	5.6146	1.539-5	30.308	147	1.000	-1.000	0.9909	1.3828	302	198	.736	240
						PRESSURE = 0.10 ATM										
200	2.070-4	-3516.9	6.2287	28.677	1.0316	1.867-4	30.646	128	1.000	-1.000	0.9696	1.3885	274	170	.734	200
220	1.881-4	-3495.8	6.3292	28.677	1.0953	1.697-4	30.643	140	1.000	-1.000	0.9733	1.3865	288	186	.730	220
240	1.720-4	-3471.0	6.4366	28.677	1.4968	1.554-4	30.612	150	1.000	-1.000	0.9783	1.3843	300	202	.727	240
260	1.562-4	-3424.1	6.6233	28.677	3.8195	1.425-4	30.403	159	1.000	-1.000	0.9909	1.3812	313	215	.730	260
280	1.335-4	-3255.4	7.2438	28.677	11.9963	1.280-4	29.415	160	1.000	-1.000	1.0373	1.3746	330	220	.752	280
						PRESSURE = 1.00 ATM										
200	2.070-3	-3516.9	5.6651	28.677	1.0283	1.867-3	30.646	128	1.000	-1.000	0.9696	1.3885	274	170	.734	200
220	1.882-3	-3496.1	5.7640	28.677	1.0504	1.698-3	30.646	140	1.000	-1.000	0.9732	1.3866	288	186	.730	220
240	1.724-3	-3474.7	5.8573	28.677	1.1066	1.556-3	30.643	150	1.000	-1.000	0.9771	1.3845	300	202	.727	240
260	1.589-3	-3450.7	5.9531	28.677	1.3463	1.435-3	30.622	161	1.000	-1.000	0.9819	1.3822	312	218	.725	260
280	1.464-3	-3384.8	6.1957	28.677	2.1878	1.328-3	30.523	170	1.000	-1.000	0.9901	1.3795	324	232	.726	280
298	1.345-3	-3332.5	6.3760	28.677	3.8196	1.237-3	30.253	177	1.000	-1.000	1.0052	1.3763	336	243	.732	298
300	1.332-3	-3325.2	6.4004	28.677	4.0869	1.227-3	30.208	177	1.000	-1.000	1.0075	1.3759	337	243	.733	300
320	1.160-3	-3199.5	6.8044	28.677	9.4191	1.117-3	29.341	179	1.000	-1.000	1.0495	1.3699	352	249	.753	320
						PRESSURE = 10.00 ATM										
200	2.066-2	-3516.9	5.1016	28.677	1.0280	1.867-2	30.646	128	1.000	-1.000	0.9695	1.3885	274	170	.734	200
220	1.878-2	-3496.2	5.2004	28.677	1.0459	1.698-2	30.646	140	1.000	-1.000	0.9732	1.3866	288	186	.730	220
240	1.722-2	-3475.1	5.2923	28.677	1.0678	1.556-2	30.646	150	1.000	-1.000	0.9770	1.3845	300	202	.727	240
260	1.589-2	-3453.4	5.3791	28.677	1.1083	1.436-2	30.644	161	1.000	-1.000	0.9810	1.3823	312	218	.724	260
280	1.475-2	-3396.5	5.5883	28.677	1.3876	1.333-2	30.634	171	1.000	-1.000	0.9856	1.3800	324	233	.723	280
298	1.382-2	-3370.1	5.6795	28.677	1.5395	1.251-2	30.607	180	1.000	-1.000	0.9906	1.3778	334	246	.723	298
300	1.373-2	-3367.2	5.6891	28.677	1.5632	1.243-2	30.602	181	1.000	-1.000	0.9912	1.3776	335	248	.723	300
320	1.279-2	-3332.4	5.8013	28.677	1.9704	1.162-2	30.516	190	1.000	-1.000	0.9992	1.3749	346	261	.726	320
340	1.184-2	-3285.5	5.9431	28.677	2.8109	1.086-2	30.311	197	1.000	-1.000	1.0124	1.3716	358	273	.732	340
360	1.080-2	-3214.7	6.1451	28.677	4.4506	1.012-2	29.882	202	1.000	-1.000	1.0354	1.3675	370	282	.742	360
380	9.538-3	-3097.0	6.4624	28.677	7.7053	9.324-3	29.075	204	1.000	-1.000	1.0764	1.3618	385	290	.757	380
						PRESSURE = 50.00 ATM										
200	1.024-1	-3516.9	4.7077	28.677	1.0279	9.337-2	30.646	128	1.000	-1.000	0.9695	1.3885	274	170	.734	200
220	9.316-2	-3496.2	4.8065	28.677	1.0455	8.488-2	30.646	140	1.000	-1.000	0.9732	1.3866	288	186	.730	220
240	8.547-2	-3475.1	4.8982	28.677	1.0643	7.781-2	30.646	150	1.000	-1.000	0.9769	1.3845	300	202	.727	240
260	7.895-2	-3453.6	4.9843	28.677	1.0873	7.182-2	30.646	161	1.000	-1.000	0.9809	1.3823	312	218	.724	260
280	7.339-2	-3397.5	5.1906	28.677	1.3178	6.669-2	30.644	171	1.000	-1.000	0.9852	1.3801	324	233	.723	280
298	6.892-2	-3373.3	5.2742	28.677	1.3491	6.262-2	30.638	180	1.000	-1.000	0.9893	1.3780	334	247	.722	298
300	6.849-2	-3370.8	5.2825	28.677	1.3540	6.223-2	30.637	181	1.000	-1.000	0.9898	1.3778	335	248	.722	300
320	6.415-2	-3343.0	5.3722	28.677	1.4363	5.831-2	30.620	191	1.000	-1.000	0.9950	1.3753	346	262	.724	320
340	6.021-2	-3312.8	5.4636	28.677	1.5978	5.480-2	30.579	199	1.000	-1.000	1.0013	1.3728	356	275	.725	340
360	5.651-2	-3278.3	5.5623	28.677	1.8828	5.161-2	30.493	208	1.000	-1.000	1.0096	1.3700	367	288	.728	360
380	5.287-2	-3236.3	5.6756	28.677	2.3495	4.864-2	30.332	215	1.000	-1.000	1.0213	1.3669	377	300	.732	380
400	4.914-2	-3182.6	5.8134	28.677	3.0793	4.578-2	30.053	221	1.000	-1.000	1.0382	1.3633	388	312	.738	400
420	4.511-2	-3110.5	5.9888	28.677	4.2040	4.295-2	29.604	226	1.000	-1.000	1.0632	1.3590	400	322	.746	420

TABLE 22.1D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	1.7504-5	-3221.6	7.9229	28.727	112	1.0000	-1.0000	1.0539	1.3786	282.5	151 .785	1.0539	1.3786	282.5	151 .785
210	1.6671-5	-3211.1	7.9744	28.727	118	1.0000	-1.0000	1.0560	1.3776	289.4	159 .780	1.0559	1.3776	289.4	159 .780
220	1.5913-5	-3200.5	8.0236	28.727	123	1.0000	-1.0000	1.0580	1.3766	296.1	168 .776	1.0580	1.3766	296.1	168 .776
230	1.5221-5	-3189.9	8.0706	28.727	128	1.0000	-1.0000	1.0602	1.3755	302.6	176 .773	1.0602	1.3755	302.6	176 .773
240	1.4587-5	-3179.3	8.1158	28.727	134	1.0000	-1.0000	1.0625	1.3744	309.0	185 .770	1.0625	1.3744	309.0	185 .770
250	1.4003-5	-3168.7	8.1592	28.727	139	1.0000	-1.0000	1.0649	1.3732	315.2	193 .767	1.0648	1.3733	315.2	193 .767
260	1.3465-5	-3158.0	8.2010	28.727	144	1.0000	-1.0000	1.0674	1.3720	321.3	201 .765	1.0672	1.3721	321.3	201 .765
270	1.2966-5	-3147.3	8.2414	28.727	149	1.0000	-1.0000	1.0701	1.3708	327.3	209 .763	1.0696	1.3710	327.3	209 .764
280	1.2503-5	-3136.6	8.2803	28.727	154	1.0001	-1.0000	1.0729	1.3695	333.1	217 .761	1.0722	1.3698	333.2	217 .762
290	1.2072-5	-3125.9	8.3180	28.727	159	1.0001	-1.0000	1.0761	1.3680	338.9	226 .759	1.0748	1.3685	338.9	225 .762
298	1.1742-5	-3117.1	8.3479	28.727	163	1.0002	-1.0000	1.0790	1.3668	343.4	232 .758	1.0770	1.3675	343.5	231 .761
300	1.1669-5	-3115.1	8.3546	28.727	164	1.0002	-1.0000	1.0796	1.3665	344.5	234 .757	1.0775	1.3673	344.6	232 .761
310	1.1293-5	-3104.3	8.3901	28.726	169	1.0004	-1.0000	1.0837	1.3648	349.9	242 .755	1.0802	1.3660	350.1	240 .761
320	1.0940-5	-3093.4	8.4245	28.726	174	1.0006	-1.0000	1.0885	1.3628	355.3	251 .752	1.0830	1.3647	355.5	247 .761
330	1.0608-5	-3082.5	8.4581	28.725	178	1.0009	-1.0000	1.0942	1.3606	360.5	261 .747	1.0859	1.3634	360.9	254 .761
340	1.0296-5	-3071.5	8.4909	28.724	183	1.0014	-1.0000	1.1011	1.3579	365.6	272 .741	1.0888	1.3621	366.1	262 .761
350	1.0001-5	-3060.5	8.5229	28.723	188	1.0021	-1.0001	1.1096	1.3549	370.5	284 .733	1.0918	1.3608	371.3	269 .761
360	9.7224-6	-3049.3	8.5543	28.721	192	1.0031	-1.0001	1.1201	1.3513	375.3	298 .722	1.0949	1.3595	376.4	277 .761
370	9.4587-6	-3038.1	8.5852	28.718	197	1.0044	-1.0002	1.1330	1.3470	379.9	315 .709	1.0980	1.3581	381.4	284 .760
380	9.2085-6	-3026.7	8.6156	28.714	201	1.0062	-1.0002	1.1491	1.3421	384.3	334 .692	1.1012	1.3568	386.4	292 .759
390	8.9707-6	-3015.1	8.6457	28.708	206	1.0085	-1.0003	1.1687	1.3364	388.5	357 .673	1.1045	1.3554	391.3	300 .757
400	8.7442-6	-3003.3	8.6756	28.701	210	1.0114	-1.0004	1.1927	1.3298	392.5	384 .652	1.1079	1.3541	396.1	308 .756
410	8.5282-6	-2991.2	8.7054	28.692	214	1.0152	-1.0006	1.2218	1.3225	396.4	416 .630	1.1114	1.3527	400.9	316 .755
420	8.3216-6	-2978.8	8.7352	28.680	219	1.0199	-1.0008	1.2565	1.3144	400.0	453 .607	1.1150	1.3514	405.6	323 .754
430	8.1238-6	-2966.1	8.7652	28.664	223	1.0256	-1.0011	1.2977	1.3056	403.5	496 .584	1.1187	1.3500	410.3	331 .752
440	7.9339-6	-2952.8	8.7956	28.645	227	1.0326	-1.0014	1.3459	1.2963	406.9	544 .562	1.1226	1.3487	415.0	340 .751
450	7.7512-6	-2939.1	8.8265	28.622	231	1.0408	-1.0018	1.4015	1.2866	410.1	599 .541	1.1266	1.3474	419.7	348 .749
460	7.5751-6	-2924.8	8.8580	28.593	235	1.0505	-1.0022	1.4648	1.2769	413.3	659 .523	1.1308	1.3462	424.3	356 .747
470	7.4050-6	-2909.8	8.8902	28.559	239	1.0615	-1.0028	1.5358	1.2672	416.4	724 .508	1.1352	1.3449	429.0	365 .744
480	7.2404-6	-2894.0	8.9233	28.518	244	1.0739	-1.0034	1.6139	1.2578	419.5	792 .496	1.1397	1.3437	433.6	374 .741
490	7.0809-6	-2877.5	8.9575	28.471	248	1.0875	-1.0041	1.6984	1.2489	422.7	862 .488	1.1444	1.3426	438.3	384 .738
500	6.9260-6	-2860.1	8.9927	28.416	252	1.1021	-1.0048	1.7876	1.2407	426.0	930 .484	1.1493	1.3415	443.0	394 .735
510	6.7755-6	-2841.7	9.0290	28.355	256	1.1173	-1.0056	1.8797	1.2332	429.4	995 .483	1.1545	1.3405	447.7	404 .730
520	6.6291-6	-2822.5	9.0664	28.286	260	1.1326	-1.0064	1.9718	1.2267	433.0	1052 .486	1.1597	1.3395	452.5	415 .726
530	6.4867-6	-2802.3	9.1048	28.211	264	1.1473	-1.0073	2.0603	1.2211	436.7	1100 .493	1.1651	1.3386	457.3	426 .721
540	6.3482-6	-2781.3	9.1441	28.130	267	1.1606	-1.0080	2.1408	1.2165	440.6	1135 .504	1.1707	1.3378	462.1	438 .716
550	6.2138-6	-2759.5	9.1840	28.044	271	1.1713	-1.0086	2.2075	1.2131	444.8	1155 .519	1.1763	1.3370	466.9	449 .710
560	6.0836-6	-2737.2	9.2242	27.955	275	1.1783	-1.0091	2.2536	1.2109	449.1	1155 .537	1.1819	1.3363	471.8	461 .705
570	5.9579-6	-2714.6	9.2643	27.867	279	1.1799	-1.0092	2.2707	1.2102	453.7	1134 .559	1.1874	1.3356	476.6	473 .700
580	5.8371-6	-2691.9	9.3037	27.781	283	1.1747	-1.0090	2.2499	1.2114	458.6	1090 .584	1.1928	1.3349	481.4	485 .695
590	5.7217-6	-2669.7	9.3416	27.701	286	1.1613	-1.0084	2.1834	1.2151	463.9	1025 .610	1.1980	1.3343	486.1	496 .691

TABLE 22.1D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.6120-6	-2648.4	9.3775	27.630	290	1.1397	-1.0073	2.0701	1.2217	469.7	943	.637	1.2028	1.3336	490.7	507	.688
610	5.5085-6	-2628.4	9.4105	27.573	294	1.1118	-1.0059	1.9213	1.2317	476.0	855	.660	1.2073	1.3329	495.2	518	.685
620	5.4111-6	-2610.0	9.4404	27.529	297	1.0822	-1.0044	1.7619	1.2444	482.7	775	.676	1.2113	1.3322	499.4	527	.683
630	5.3194-6	-2593.1	9.4674	27.499	301	1.0557	-1.0030	1.6201	1.2579	489.5	712	.684	1.2150	1.3313	503.6	536	.682
640	5.2326-6	-2577.5	9.4921	27.480	304	1.0355	-1.0019	1.5130	1.2699	495.9	670	.687	1.2184	1.3304	507.6	544	.682
650	5.1498-6	-2562.7	9.5149	27.468	308	1.0216	-1.0012	1.4421	1.2786	501.6	645	.687	1.2216	1.3294	511.4	551	.682
660	5.0705-6	-2548.6	9.5366	27.461	311	1.0129	-1.0007	1.3996	1.2841	506.6	634	.687	1.2247	1.3284	515.2	559	.682
670	4.9941-6	-2534.7	9.5574	27.456	314	1.0076	-1.0004	1.3761	1.2870	511.0	631	.686	1.2276	1.3274	519.0	566	.682
680	4.9202-6	-2521.0	9.5777	27.454	318	1.0045	-1.0002	1.3644	1.2882	515.1	632	.686	1.2306	1.3264	522.6	573	.683
690	4.8486-6	-2507.4	9.5976	27.453	321	1.0027	-1.0001	1.3595	1.2884	518.9	637	.685	1.2335	1.3254	526.3	580	.683
700	4.7792-6	-2493.8	9.6172	27.452	324	1.0016	-1.0001	1.3584	1.2880	522.6	643	.685	1.2364	1.3244	529.9	587	.684
710	4.7118-6	-2480.2	9.6364	27.451	328	1.0010	-1.0001	1.3594	1.2873	526.1	650	.685	1.2392	1.3235	533.5	594	.684
720	4.6463-6	-2466.6	9.6555	27.451	331	1.0006	-1.0000	1.3614	1.2865	529.7	657	.686	1.2421	1.3225	537.0	600	.685
730	4.5827-6	-2453.0	9.6743	27.451	334	1.0004	-1.0000	1.3639	1.2857	533.2	665	.686	1.2449	1.3215	540.5	607	.685
740	4.5207-6	-2439.3	9.6928	27.451	338	1.0002	-1.0000	1.3667	1.2849	536.6	672	.686	1.2477	1.3206	544.0	614	.686
750	4.4604-6	-2425.6	9.7112	27.451	341	1.0001	-1.0000	1.3694	1.2841	540.1	680	.686	1.2506	1.3196	547.5	621	.687
760	4.4017-6	-2411.9	9.7294	27.451	344	1.0001	-1.0000	1.3720	1.2834	543.5	688	.686	1.2534	1.3187	551.0	627	.687
770	4.3446-6	-2398.2	9.7473	27.451	347	1.0001	-1.0000	1.3744	1.2827	546.9	695	.687	1.2561	1.3177	554.4	634	.688
780	4.2889-6	-2384.5	9.7650	27.451	350	1.0000	-1.0000	1.3767	1.2821	550.4	702	.687	1.2589	1.3168	557.8	641	.688
790	4.2346-6	-2370.7	9.7826	27.451	353	1.0000	-1.0000	1.3788	1.2815	553.8	710	.687	1.2617	1.3159	561.1	647	.689
800	4.1816-6	-2356.9	9.8000	27.451	357	1.0000	-1.0000	1.3808	1.2810	557.1	717	.687	1.2644	1.3150	564.5	654	.689
810	4.1300-6	-2343.1	9.8171	27.451	360	1.0000	-1.0000	1.3826	1.2805	560.5	724	.687	1.2672	1.3141	567.8	661	.690
820	4.0797-6	-2329.2	9.8341	27.451	363	1.0000	-1.0000	1.3842	1.2801	563.9	730	.688	1.2699	1.3132	571.1	667	.691
830	4.0305-6	-2315.4	9.8509	27.451	366	1.0000	-1.0000	1.3857	1.2797	567.2	737	.688	1.2726	1.3123	574.4	674	.691
840	3.9825-6	-2301.5	9.8675	27.451	369	1.0000	-1.0000	1.3870	1.2794	570.5	744	.688	1.2753	1.3115	577.6	680	.692
850	3.9357-6	-2287.6	9.8839	27.451	372	1.0000	-1.0000	1.3883	1.2791	573.8	750	.689	1.2780	1.3106	580.9	687	.692
860	3.8899-6	-2273.7	9.9002	27.451	375	1.0000	-1.0000	1.3894	1.2788	577.1	757	.689	1.2806	1.3098	584.1	693	.693
870	3.8452-6	-2259.8	9.9162	27.451	378	1.0000	-1.0000	1.3905	1.2785	580.4	763	.689	1.2833	1.3089	587.3	700	.694
880	3.8015-6	-2245.9	9.9321	27.451	381	1.0000	-1.0000	1.3915	1.2782	583.7	769	.689	1.2859	1.3081	590.5	706	.694
890	3.7588-6	-2232.0	9.9478	27.451	384	1.0000	-1.0000	1.3924	1.2780	587.0	776	.690	1.2885	1.3073	593.6	713	.695
900	3.7170-6	-2218.1	9.9634	27.451	387	1.0000	-1.0000	1.3932	1.2778	590.2	782	.690	1.2911	1.3065	596.8	719	.695
910	3.6762-6	-2204.2	9.9788	27.451	390	1.0000	-1.0000	1.3940	1.2776	593.4	788	.690	1.2937	1.3057	599.9	726	.696
920	3.6362-6	-2190.2	9.9940	27.451	393	1.0000	-1.0000	1.3947	1.2774	596.6	794	.691	1.2962	1.3049	603.0	732	.696
930	3.5971-6	-2176.3	10.0091	27.451	396	1.0000	-1.0000	1.3954	1.2772	599.8	800	.691	1.2987	1.3041	606.1	738	.697
940	3.5588-6	-2162.3	10.0241	27.451	399	1.0000	-1.0000	1.3961	1.2771	603.0	806	.691	1.3012	1.3034	609.2	745	.697
950	3.5214-6	-2148.3	10.0388	27.451	402	1.0000	-1.0000	1.3967	1.2769	606.2	812	.692	1.3037	1.3026	612.2	751	.698
960	3.4847-6	-2134.4	10.0535	27.451	405	1.0000	-1.0000	1.3973	1.2768	609.3	818	.692	1.3062	1.3019	615.3	758	.698
970	3.4488-6	-2120.4	10.0679	27.451	408	1.0000	-1.0000	1.3979	1.2766	612.4	823	.692	1.3086	1.3012	618.3	764	.699
980	3.4136-6	-2106.4	10.0823	27.451	411	1.0000	-1.0000	1.3984	1.2765	615.5	829	.693	1.3110	1.3005	621.3	770	.699
990	3.3791-6	-2092.4	10.0965	27.451	414	1.0000	-1.0000	1.3990	1.2763	618.6	835	.693	1.3134	1.2997	624.3	777	.700

TABLE 22.1D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3453-6	-2078.4	10.1105	27.451	417	1.0000	-1.0000	1.3995	1.2762	621.7	841	.693	1.3157	1.2991	627.3	783	.700
1050	3.1860-6	-2008.4	10.1789	27.451	431	1.0000	-1.0000	1.4019	1.2756	636.9	869	.695	1.3269	1.2958	641.9	814	.702
1100	3.0412-6	-1938.2	10.2442	27.451	445	1.0000	-1.0000	1.4046	1.2749	651.7	897	.696	1.3377	1.2927	656.3	846	.703
1150	2.9090-6	-1867.9	10.3067	27.451	458	1.0000	-1.0000	1.4077	1.2742	666.2	925	.698	1.3481	1.2898	670.3	877	.705
1200	2.7878-6	-1797.5	10.3667	27.451	472	1.0000	-1.0000	1.4112	1.2733	680.3	952	.699	1.3582	1.2870	683.9	908	.706
1250	2.6762-6	-1726.8	10.4243	27.451	485	1.0000	-1.0000	1.4150	1.2724	694.1	980	.700	1.3678	1.2844	697.3	939	.707
1300	2.5733-6	-1656.0	10.4799	27.451	498	1.0000	-1.0000	1.4192	1.2713	707.5	1009	.701	1.3770	1.2820	710.5	969	.708
1350	2.4780-6	-1584.9	10.5336	27.451	511	1.0000	-1.0000	1.4238	1.2702	720.7	1038	.702	1.3858	1.2797	723.4	1000	.709
1400	2.3895-6	-1513.6	10.5854	27.450	524	1.0001	-1.0000	1.4288	1.2691	733.6	1067	.702	1.3943	1.2775	736.0	1031	.709
1450	2.3071-6	-1442.0	10.6357	27.450	537	1.0002	-1.0000	1.4343	1.2678	746.2	1099	.701	1.4024	1.2755	748.4	1061	.710
1500	2.2302-6	-1370.1	10.6844	27.450	549	1.0003	-1.0000	1.4406	1.2664	758.5	1132	.699	1.4101	1.2736	760.7	1091	.710
1550	2.1582-6	-1297.9	10.7317	27.450	562	1.0006	-1.0000	1.4479	1.2649	770.6	1169	.696	1.4175	1.2717	772.7	1122	.710
1600	2.0907-6	-1225.3	10.7779	27.449	574	1.0010	-1.0000	1.4569	1.2631	782.4	1210	.691	1.4246	1.2700	784.6	1152	.710
1650	2.0273-6	-1152.2	10.8229	27.448	586	1.0017	-1.0000	1.4685	1.2609	793.9	1260	.684	1.4313	1.2685	796.2	1182	.710
1700	1.9675-6	-1078.4	10.8669	27.446	598	1.0027	-1.0001	1.4841	1.2581	804.9	1320	.673	1.4377	1.2670	807.8	1212	.710
1750	1.9111-6	-1003.7	10.9102	27.443	610	1.0044	-1.0001	1.5058	1.2545	815.5	1395	.659	1.4438	1.2656	819.1	1242	.709
1800	1.8577-6	-927.6	10.9531	27.439	622	1.0071	-1.0002	1.5372	1.2496	825.6	1492	.641	1.4496	1.2643	830.4	1272	.709
1850	1.8071-6	-849.7	10.9958	27.432	634	1.0114	-1.0004	1.5840	1.2429	834.8	1621	.619	1.4552	1.2631	841.6	1302	.708
1900	1.7588-6	-768.8	11.0389	27.421	645	1.0183	-1.0006	1.6553	1.2336	843.0	1795	.595	1.4605	1.2620	852.7	1333	.707
1950	1.7127-6	-683.5	11.0832	27.405	657	1.0294	-1.0009	1.7660	1.2212	850.0	2036	.570	1.4655	1.2611	863.8	1363	.706
2000	1.6683-6	-591.2	11.1299	27.379	668	1.0473	-1.0015	1.9388	1.2052	855.6	2377	.545	1.4703	1.2603	874.9	1394	.705
2050	1.6252-6	-488.1	11.1809	27.338	679	1.0755	-1.0025	2.2035	1.1865	860.1	2863	.523	1.4748	1.2598	886.3	1425	.703
2100	1.5828-6	-368.8	11.2383	27.275	690	1.1179	-1.0039	2.5892	1.1672	864.4	3552	.503	1.4790	1.2596	898.0	1457	.701
2150	1.5407-6	-226.9	11.3051	27.182	701	1.1768	-1.0060	3.1076	1.1498	869.6	4500	.484	1.4830	1.2599	910.2	1490	.697
2200	1.4984-6	-56.1	11.3836	27.049	711	1.2513	-1.0088	3.7425	1.1361	876.5	5737	.464	1.4866	1.2607	923.3	1525	.693
2250	1.4554-6	148.7	11.4756	26.871	721	1.3383	-1.0121	4.4603	1.1263	885.5	7270	.442	1.4900	1.2621	937.4	1562	.688
2300	1.4118-6	390.8	11.5820	26.644	730	1.4350	-1.0160	5.2325	1.1195	896.4	9085	.420	1.4931	1.2642	952.5	1602	.680
2350	1.3673-6	672.6	11.7032	26.367	739	1.5394	-1.0205	6.0455	1.1150	909.0	11163	.400	1.4962	1.2670	969.0	1646	.672
2400	1.3222-6	996.0	11.8393	26.039	747	1.6509	-1.0254	6.8947	1.1121	923.2	13468	.383	1.4993	1.2706	986.8	1694	.661
2450	1.2764-6	1362.6	11.9905	25.661	755	1.7679	-1.0309	7.7744	1.1103	938.8	15935	.369	1.5025	1.2749	1006.0	1748	.649
2500	1.2302-6	1773.7	12.1565	25.236	763	1.8878	-1.0367	8.6687	1.1095	956.0	18456	.358	1.5058	1.2801	1026.8	1808	.635
2550	1.1836-6	2229.2	12.3369	24.767	771	2.0055	-1.0428	9.5447	1.1095	974.6	20873	.352	1.5095	1.2860	1049.2	1876	.620
2600	1.1372-6	2726.9	12.5302	24.262	778	2.1132	-1.0486	10.3480	1.1102	994.6	22980	.350	1.5134	1.2927	1073.2	1950	.604
2650	1.0914-6	3261.5	12.7338	23.733	785	2.2006	-1.0538	11.0035	1.1116	1015.9	24547	.352	1.5176	1.3001	1098.7	2029	.587
2700	1.0468-6	3823.4	12.9439	23.192	793	2.2567	-1.0578	11.4247	1.1136	1038.2	25362	.357	1.5220	1.3081	1125.2	2112	.571
2750	1.0041-6	4398.8	13.1550	22.659	800	2.2717	-1.0599	11.5328	1.1164	1061.4	25287	.365	1.5266	1.3164	1152.5	2198	.556
2800	9.6407-7	4970.6	13.3611	22.150	808	2.2407	-1.0598	11.2820	1.1201	1085.0	24309	.375	1.5312	1.3247	1180.0	2283	.542
2850	9.2714-7	5521.1	13.5560	21.682	816	2.1657	-1.0575	10.6822	1.1247	1108.7	22557	.387	1.5357	1.3328	1206.9	2366	.530
2900	8.9368-7	6034.2	13.7345	21.267	825	2.0559	-1.0533	9.8023	1.1304	1132.1	20277	.399	1.5399	1.3403	1232.7	2444	.520
2950	8.6377-7	6498.5	13.8932	20.909	833	1.9253	-1.0477	8.7520	1.1373	1155.0	17760	.411	1.5437	1.3470	1257.0	2517	.511
3000	8.3723-7	6908.5	14.0311	20.610	842	1.7881	-1.0415	7.6491	1.1457	1177.5	15265	.422	1.5472	1.3527	1279.5	2583	.505

TABLE 22.2D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
200	1.7504-4	-3221.6	7.2565	28.727	112	1.0000	-1.0000	1.0539	1.3786	282.5	151	.785	1.0539	1.3786	282.5	151 .785
210	1.6671-4	-3211.1	7.3080	28.727	118	1.0000	-1.0000	1.0559	1.3776	289.4	159	.780	1.0559	1.3776	289.4	159 .780
220	1.5913-4	-3200.5	7.3571	28.727	123	1.0000	-1.0000	1.0580	1.3766	296.1	168	.776	1.0580	1.3766	296.1	168 .776
230	1.5221-4	-3189.9	7.4042	28.727	128	1.0000	-1.0000	1.0602	1.3755	302.6	176	.773	1.0602	1.3755	302.6	176 .773
240	1.4587-4	-3179.3	7.4494	28.727	134	1.0000	-1.0000	1.0625	1.3744	309.0	185	.770	1.0625	1.3744	309.0	185 .770
250	1.4003-4	-3168.7	7.4928	28.727	139	1.0000	-1.0000	1.0648	1.3733	315.2	193	.767	1.0648	1.3733	315.2	193 .767
260	1.3465-4	-3158.0	7.5346	28.727	144	1.0000	-1.0000	1.0673	1.3721	321.3	201	.765	1.0672	1.3721	321.3	201 .765
270	1.2966-4	-3147.3	7.5749	28.727	149	1.0000	-1.0000	1.0698	1.3709	327.3	209	.763	1.0696	1.3710	327.3	209 .764
280	1.2503-4	-3136.6	7.6139	28.727	154	1.0000	-1.0000	1.0724	1.3697	333.2	217	.762	1.0722	1.3698	333.2	217 .762
290	1.2072-4	-3125.9	7.6516	28.727	159	1.0000	-1.0000	1.0752	1.3684	338.9	225	.761	1.0748	1.3685	338.9	225 .762
298	1.1742-4	-3117.1	7.6814	28.727	163	1.0001	-1.0000	1.0776	1.3673	343.5	231	.760	1.0770	1.3675	343.5	231 .761
300	1.1669-4	-3115.1	7.6881	28.727	164	1.0001	-1.0000	1.0782	1.3670	344.5	233	.760	1.0775	1.3673	344.6	232 .761
310	1.1293-4	-3104.3	7.7235	28.727	169	1.0001	-1.0000	1.0813	1.3656	350.0	241	.759	1.0802	1.3660	350.1	240 .761
320	1.0940-4	-3093.5	7.7578	28.727	174	1.0002	-1.0000	1.0847	1.3641	355.4	248	.758	1.0830	1.3647	355.5	247 .761
330	1.0608-4	-3082.6	7.7913	28.726	178	1.0003	-1.0000	1.0885	1.3625	360.7	256	.757	1.0858	1.3634	360.9	254 .761
340	1.0296-4	-3071.7	7.8238	28.726	183	1.0005	-1.0000	1.0926	1.3608	365.9	265	.755	1.0887	1.3621	366.1	262 .761
350	1.0002-4	-3060.8	7.8556	28.726	188	1.0007	-1.0000	1.0974	1.3589	371.0	274	.752	1.0917	1.3608	371.3	269 .761
360	9.7239-5	-3049.8	7.8866	28.725	192	1.0010	-1.0000	1.1027	1.3568	376.0	283	.748	1.0947	1.3594	376.4	276 .761
370	9.4608-5	-3038.7	7.9169	28.724	197	1.0014	-1.0001	1.1090	1.3545	380.9	294	.743	1.0978	1.3581	381.4	284 .760
380	9.2114-5	-3027.6	7.9465	28.723	201	1.0020	-1.0001	1.1162	1.3519	385.6	305	.736	1.1009	1.3567	386.3	292 .759
390	8.9747-5	-3016.4	7.9756	28.721	206	1.0027	-1.0001	1.1246	1.3490	390.3	318	.728	1.1041	1.3554	391.2	299 .758
400	8.7496-5	-3005.1	8.0042	28.719	210	1.0037	-1.0001	1.1346	1.3457	394.8	332	.718	1.1074	1.3540	396.0	307 .757
410	8.5353-5	-2993.7	8.0324	28.716	214	1.0049	-1.0002	1.1462	1.3421	399.2	347	.707	1.1107	1.3526	400.7	315 .757
420	8.3310-5	-2982.2	8.0602	28.712	219	1.0064	-1.0003	1.1598	1.3380	403.4	365	.695	1.1141	1.3512	405.4	322 .756
430	8.1358-5	-2970.5	8.0876	28.707	223	1.0083	-1.0003	1.1758	1.3335	407.5	385	.681	1.1175	1.3499	410.0	329 .756
440	7.9492-5	-2958.6	8.1149	28.701	227	1.0107	-1.0005	1.1944	1.3286	411.5	407	.666	1.1210	1.3485	414.6	337 .755
450	7.7704-5	-2946.6	8.1419	28.693	231	1.0136	-1.0006	1.2159	1.3232	415.4	433	.649	1.1246	1.3471	419.1	345 .754
460	7.5990-5	-2934.3	8.1689	28.683	235	1.0170	-1.0008	1.2407	1.3174	419.1	462	.632	1.1282	1.3458	423.6	352 .754
470	7.4342-5	-2921.8	8.1959	28.671	239	1.0211	-1.0009	1.2691	1.3111	422.7	494	.615	1.1320	1.3444	428.1	360 .753
480	7.2758-5	-2908.9	8.2230	28.657	243	1.0259	-1.0012	1.3014	1.3046	426.2	530	.598	1.1358	1.3431	432.5	368 .752
490	7.1231-5	-2895.7	8.2502	28.640	247	1.0315	-1.0015	1.3379	1.2977	429.7	569	.581	1.1397	1.3418	436.9	375 .751
500	6.9757-5	-2882.1	8.2776	28.620	251	1.0379	-1.0018	1.3787	1.2907	433.0	612	.566	1.1437	1.3405	441.3	384 .749
510	6.8333-5	-2868.1	8.3053	28.597	255	1.0452	-1.0022	1.4240	1.2835	436.3	659	.551	1.1479	1.3392	445.6	392 .747
520	6.6955-5	-2853.6	8.3335	28.570	259	1.0533	-1.0026	1.4739	1.2763	439.5	709	.539	1.1521	1.3380	450.0	401 .745
530	6.5620-5	-2838.6	8.3621	28.538	263	1.0623	-1.0031	1.5284	1.2691	442.7	761	.528	1.1564	1.3368	454.3	409 .743
540	6.4324-5	-2823.1	8.3912	28.502	267	1.0722	-1.0036	1.5871	1.2621	445.9	815	.520	1.1609	1.3356	458.7	419 .740
550	6.3065-5	-2806.9	8.4209	28.462	271	1.0828	-1.0042	1.6500	1.2553	449.1	869	.514	1.1654	1.3345	463.0	428 .737
560	6.1840-5	-2790.1	8.4512	28.417	275	1.0941	-1.0048	1.7164	1.2488	452.3	923	.511	1.1700	1.3335	467.4	438 .734
570	6.0648-5	-2772.5	8.4822	28.366	278	1.1059	-1.0055	1.7856	1.2426	455.6	975	.510	1.1748	1.3324	471.8	448 .731
580	5.9486-5	-2754.3	8.5138	28.311	282	1.1179	-1.0062	1.8567	1.2368	459.0	1025	.511	1.1796	1.3315	476.2	458 .727
590	5.8354-5	-2735.4	8.5462	28.251	286	1.1299	-1.0069	1.9283	1.2315	462.4	1070	.515	1.1845	1.3306	480.7	468 .723

TABLE 22.2D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
600	5.7251-5	-2715.8	8.5792	28.187	290	1.1416	-1.0076	1.9987	1.2267	465.9	1109	.522	1.1894	1.3298	485.1	479	.719
610	5.6175-5	-2695.4	8.6128	28.118	293	1.1524	-1.0082	2.0654	1.2224	469.6	1140	.531	1.1944	1.3290	489.6	490	.715
620	5.5128-5	-2674.5	8.6469	28.047	297	1.1616	-1.0087	2.1252	1.2187	473.3	1161	.543	1.1994	1.3283	494.1	501	.711
630	5.4110-5	-2653.0	8.6813	27.973	300	1.1685	-1.0092	2.1737	1.2159	477.2	1171	.558	1.2044	1.3277	498.6	512	.707
640	5.3122-5	-2631.1	8.7158	27.898	304	1.1721	-1.0094	2.2054	1.2140	481.2	1167	.575	1.2093	1.3271	503.1	523	.703
650	5.2165-5	-2609.0	8.7501	27.823	307	1.1713	-1.0094	2.2136	1.2133	485.5	1146	.594	1.2140	1.3265	507.6	534	.700
660	5.1243-5	-2586.9	8.7837	27.752	311	1.1649	-1.0091	2.1919	1.2142	490.0	1109	.615	1.2187	1.3260	512.1	544	.696
670	5.0357-5	-2565.2	8.8163	27.685	314	1.1523	-1.0084	2.1356	1.2170	494.8	1055	.636	1.2231	1.3255	516.4	555	.693
680	4.9511-5	-2544.3	8.8473	27.627	318	1.1335	-1.0074	2.0451	1.2220	500.1	990	.656	1.2272	1.3249	520.7	565	.691
690	4.8707-5	-2524.4	8.8764	27.577	321	1.1104	-1.0061	1.9290	1.2293	505.7	921	.673	1.2312	1.3243	524.9	574	.689
700	4.7943-5	-2505.8	8.9032	27.538	324	1.0857	-1.0048	1.8032	1.2385	511.6	855	.684	1.2348	1.3236	528.9	583	.688
710	4.7218-5	-2488.3	8.9279	27.510	328	1.0627	-1.0035	1.6854	1.2484	517.6	800	.691	1.2382	1.3229	532.8	591	.687
720	4.6528-5	-2472.0	8.9508	27.489	331	1.0437	-1.0025	1.5882	1.2578	523.4	759	.693	1.2414	1.3221	536.6	599	.686
730	4.5868-5	-2456.5	8.9722	27.476	334	1.0293	-1.0017	1.5158	1.2656	528.7	732	.692	1.2445	1.3213	540.3	606	.686
740	4.5233-5	-2441.6	8.9924	27.467	338	1.0192	-1.0011	1.4658	1.2713	533.7	716	.691	1.2475	1.3204	543.9	613	.687
750	4.4621-5	-2427.1	9.0119	27.461	341	1.0125	-1.0007	1.4332	1.2752	538.1	708	.690	1.2504	1.3195	547.4	620	.687
760	4.4028-5	-2412.9	9.0307	27.457	344	1.0080	-1.0005	1.4129	1.2777	542.3	705	.689	1.2533	1.3186	550.9	627	.687
770	4.3452-5	-2398.8	9.0491	27.455	347	1.0052	-1.0003	1.4006	1.2790	546.1	706	.688	1.2561	1.3177	554.3	634	.688
780	4.2893-5	-2384.9	9.0671	27.453	350	1.0033	-1.0002	1.3935	1.2797	549.8	710	.688	1.2589	1.3168	557.7	641	.688
790	4.2349-5	-2370.9	9.0849	27.452	353	1.0022	-1.0001	1.3897	1.2800	553.4	714	.688	1.2617	1.3159	561.1	647	.689
800	4.1818-5	-2357.1	9.1023	27.452	357	1.0014	-1.0001	1.3878	1.2800	556.9	720	.688	1.2644	1.3150	564.5	654	.689
810	4.1301-5	-2343.2	9.1196	27.451	360	1.0009	-1.0001	1.3872	1.2799	560.4	726	.688	1.2672	1.3141	567.8	661	.690
820	4.0797-5	-2329.3	9.1366	27.451	363	1.0006	-1.0000	1.3872	1.2797	563.8	732	.688	1.2699	1.3132	571.1	667	.691
830	4.0306-5	-2315.4	9.1534	27.451	366	1.0004	-1.0000	1.3877	1.2795	567.1	738	.688	1.2726	1.3123	574.4	674	.691
840	3.9826-5	-2301.6	9.1700	27.451	369	1.0003	-1.0000	1.3884	1.2792	570.5	744	.688	1.2753	1.3115	577.6	680	.692
850	3.9357-5	-2287.7	9.1865	27.451	372	1.0002	-1.0000	1.3892	1.2789	573.8	751	.689	1.2780	1.3106	580.9	687	.692
860	3.8899-5	-2273.8	9.2027	27.451	375	1.0001	-1.0000	1.3901	1.2787	577.1	757	.689	1.2806	1.3098	584.1	693	.693
870	3.8452-5	-2259.9	9.2188	27.451	378	1.0001	-1.0000	1.3909	1.2784	580.4	763	.689	1.2833	1.3089	587.3	700	.694
880	3.8015-5	-2245.9	9.2347	27.451	381	1.0001	-1.0000	1.3918	1.2782	583.7	769	.690	1.2859	1.3081	590.5	706	.694
890	3.7588-5	-2232.0	9.2504	27.451	384	1.0001	-1.0000	1.3926	1.2780	586.9	776	.690	1.2885	1.3073	593.6	713	.695
900	3.7170-5	-2218.1	9.2660	27.451	387	1.0000	-1.0000	1.3934	1.2778	590.2	782	.690	1.2911	1.3065	596.8	719	.695
910	3.6762-5	-2204.2	9.2814	27.451	390	1.0000	-1.0000	1.3941	1.2776	593.4	788	.690	1.2937	1.3057	599.9	726	.696
920	3.6362-5	-2190.2	9.2966	27.451	393	1.0000	-1.0000	1.3948	1.2774	596.6	794	.691	1.2962	1.3049	603.0	732	.696
930	3.5971-5	-2176.3	9.3117	27.451	396	1.0000	-1.0000	1.3955	1.2772	599.8	800	.691	1.2987	1.3041	606.1	738	.697
940	3.5588-5	-2162.3	9.3266	27.451	399	1.0000	-1.0000	1.3961	1.2771	603.0	806	.691	1.3012	1.3034	609.2	745	.697
950	3.5214-5	-2148.3	9.3414	27.451	402	1.0000	-1.0000	1.3967	1.2769	606.2	812	.692	1.3037	1.3026	612.2	751	.698
960	3.4847-5	-2134.4	9.3560	27.451	405	1.0000	-1.0000	1.3973	1.2768	609.3	818	.692	1.3062	1.3019	615.3	758	.698
970	3.4488-5	-2120.4	9.3705	27.451	408	1.0000	-1.0000	1.3979	1.2766	612.4	823	.692	1.3086	1.3012	618.3	764	.699
980	3.4136-5	-2106.4	9.3849	27.451	411	1.0000	-1.0000	1.3984	1.2765	615.5	829	.693	1.3110	1.3005	621.3	770	.699
990	3.3791-5	-2092.4	9.3991	27.451	414	1.0000	-1.0000	1.3990	1.2763	618.6	835	.693	1.3134	1.2997	624.3	777	.700

TABLE 22.2D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO	
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3453-5	-2078.4	9.4131	27.451	417	1.0000	-1.0000	1.3995	1.2762	621.7	841	.693	1.3157	1.2991	627.3	783	.700
1050	3.1860-5	-2008.4	9.4815	27.451	431	1.0000	-1.0000	1.4019	1.2756	636.9	869	.695	1.3269	1.2958	641.9	814	.702
1100	3.0412-5	-1938.2	9.5467	27.451	445	1.0000	-1.0000	1.4046	1.2749	651.7	897	.696	1.3377	1.2927	656.3	846	.703
1150	2.9090-5	-1867.9	9.6092	27.451	458	1.0000	-1.0000	1.4077	1.2742	666.2	925	.698	1.3481	1.2898	670.3	877	.705
1200	2.7878-5	-1797.5	9.6692	27.451	472	1.0000	-1.0000	1.4111	1.2733	680.3	952	.699	1.3582	1.2870	683.9	908	.706
1250	2.6762-5	-1726.8	9.7269	27.451	485	1.0000	-1.0000	1.4149	1.2724	694.1	980	.700	1.3678	1.2844	697.3	939	.707
1300	2.5733-5	-1656.0	9.7825	27.451	498	1.0000	-1.0000	1.4190	1.2714	707.5	1008	.701	1.3770	1.2820	710.5	969	.708
1350	2.4780-5	-1584.9	9.8361	27.451	511	1.0000	-1.0000	1.4234	1.2703	720.7	1036	.702	1.3858	1.2797	723.4	1000	.709
1400	2.3895-5	-1513.6	9.8880	27.451	524	1.0000	-1.0000	1.4281	1.2692	733.6	1065	.703	1.3943	1.2775	736.0	1031	.709
1450	2.3071-5	-1442.1	9.9382	27.450	537	1.0001	-1.0000	1.4329	1.2681	746.3	1094	.703	1.4024	1.2755	748.4	1061	.710
1500	2.2302-5	-1370.3	9.9868	27.450	549	1.0001	-1.0000	1.4381	1.2669	758.7	1124	.703	1.4101	1.2736	760.7	1091	.710
1550	2.1582-5	-1298.3	10.0341	27.450	562	1.0002	-1.0000	1.4436	1.2656	770.8	1155	.702	1.4175	1.2717	772.7	1122	.710
1600	2.0908-5	-1226.0	10.0800	27.450	574	1.0003	-1.0000	1.4496	1.2643	782.8	1187	.701	1.4246	1.2700	784.5	1152	.710
1650	2.0274-5	-1153.3	10.1247	27.450	586	1.0005	-1.0000	1.4564	1.2629	794.5	1222	.699	1.4313	1.2684	796.2	1182	.710
1700	1.9677-5	-1080.3	10.1683	27.449	598	1.0009	-1.0000	1.4643	1.2613	805.9	1260	.695	1.4377	1.2669	807.7	1212	.710
1750	1.9114-5	-1006.8	10.2109	27.448	610	1.0014	-1.0000	1.4739	1.2595	817.1	1303	.690	1.4438	1.2655	819.0	1242	.710
1800	1.8583-5	-932.9	10.2526	27.447	622	1.0022	-1.0001	1.4862	1.2573	828.0	1353	.683	1.4496	1.2642	830.3	1271	.709
1850	1.8079-5	-858.2	10.2935	27.445	634	1.0034	-1.0001	1.5023	1.2546	838.5	1412	.674	1.4551	1.2629	841.3	1301	.709
1900	1.7601-5	-782.5	10.3338	27.442	646	1.0052	-1.0002	1.5241	1.2511	848.7	1483	.663	1.4603	1.2618	852.3	1331	.708
1950	1.7147-5	-705.6	10.3738	27.437	657	1.0080	-1.0003	1.5546	1.2466	858.3	1572	.650	1.4653	1.2607	863.1	1360	.708
2000	1.6714-5	-626.9	10.4137	27.430	668	1.0122	-1.0004	1.5979	1.2406	867.2	1685	.634	1.4701	1.2597	873.9	1390	.707
2050	1.6300-5	-545.5	10.4538	27.420	680	1.0185	-1.0006	1.6605	1.2328	875.4	1831	.616	1.4746	1.2589	884.6	1419	.706
2100	1.5904-5	-460.3	10.4949	27.405	691	1.0281	-1.0009	1.7514	1.2227	882.6	2024	.598	1.4789	1.2581	895.3	1449	.705
2150	1.5521-5	-369.7	10.5375	27.383	702	1.0424	-1.0014	1.8830	1.2104	888.9	2283	.579	1.4829	1.2575	906.0	1479	.704
2200	1.5150-5	-271.1	10.5829	27.350	713	1.0634	-1.0022	2.0698	1.1961	894.4	2631	.561	1.4868	1.2570	916.9	1509	.702
2250	1.4788-5	-161.6	10.6321	27.302	723	1.0931	-1.0032	2.3249	1.1810	899.6	3097	.543	1.4903	1.2568	928.0	1539	.700
2300	1.4431-5	-37.4	10.6867	27.235	734	1.1325	-1.0047	2.6538	1.1666	905.1	3706	.525	1.4936	1.2569	939.4	1571	.698
2350	1.4076-5	104.9	10.7479	27.144	744	1.1816	-1.0066	3.0499	1.1542	911.5	4475	.507	1.4967	1.2573	951.3	1603	.695
2400	1.3722-5	268.4	10.8167	27.024	754	1.2388	-1.0090	3.4962	1.1443	919.2	5407	.487	1.4995	1.2581	963.8	1636	.691
2450	1.3368-5	455.1	10.8936	26.874	763	1.3020	-1.0116	3.9738	1.1368	928.3	6497	.467	1.5021	1.2594	977.0	1671	.686
2500	1.3012-5	666.1	10.9789	26.693	773	1.3697	-1.0146	4.4691	1.1314	938.6	7737	.446	1.5045	1.2611	991.0	1708	.680
2550	1.2655-5	902.2	11.0724	26.480	781	1.4409	-1.0179	4.9754	1.1276	950.2	9118	.426	1.5068	1.2632	1005.7	1748	.674
2600	1.2297-5	1163.8	11.1739	26.235	790	1.5153	-1.0215	5.4906	1.1249	962.8	10627	.408	1.5090	1.2658	1021.3	1790	.666
2650	1.1938-5	1451.4	11.2835	25.960	798	1.5924	-1.0254	6.0139	1.1232	976.4	12244	.392	1.5113	1.2689	1037.8	1836	.657
2700	1.1580-5	1765.3	11.4008	25.655	807	1.6718	-1.0296	6.5430	1.1222	990.9	13935	.379	1.5136	1.2725	1055.2	1886	.647
2750	1.1222-5	2105.7	11.5257	25.322	815	1.7521	-1.0340	7.0720	1.1218	1006.4	15654	.368	1.5160	1.2765	1073.6	1939	.637
2800	1.0865-5	2472.3	11.6578	24.964	822	1.8314	-1.0385	7.5894	1.1219	1022.9	17335	.360	1.5185	1.2810	1093.0	1997	.625
2850	1.0511-5	2864.1	11.7965	24.582	830	1.9069	-1.0430	8.0780	1.1226	1040.2	18898	.355	1.5212	1.2859	1113.3	2059	.613
2900	1.0162-5	3279.2	11.9409	24.183	838	1.9750	-1.0474	8.5144	1.1237	1058.5	20252	.352	1.5241	1.2913	1134.7	2126	.601
2950	9.8202-6	3714.2	12.0896	23.771	846	2.0313	-1.0513	8.8706	1.1253	1077.5	21304	.352	1.5271	1.2971	1156.9	2196	.588
3000	9.4871-6	4164.4	12.2409	23.355	853	2.0715	-1.0546	9.1169	1.1274	1097.3	21970	.354	1.5303	1.3032	1179.8	2270	.575

TABLE 22.3D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	1.7504-3	-3221.6	6.5900	28.727	112	1.0000	-1.0000	1.0539	1.3786	282.5	151 .785	1.0539	1.3786	282.5	151 .785
210	1.6671-3	-3211.1	6.6415	28.727	118	1.0000	-1.0000	1.0560	1.3776	289.4	159 .780	1.0559	1.3776	289.4	159 .780
220	1.5913-3	-3200.5	6.6907	28.727	123	1.0000	-1.0000	1.0580	1.3766	296.1	168 .776	1.0580	1.3766	296.1	168 .776
230	1.5221-3	-3189.9	6.7378	28.727	128	1.0000	-1.0000	1.0602	1.3755	302.6	176 .773	1.0602	1.3755	302.6	176 .773
240	1.4587-3	-3179.3	6.7829	28.727	134	1.0000	-1.0000	1.0625	1.3744	309.0	185 .770	1.0625	1.3744	309.0	185 .770
250	1.4003-3	-3168.7	6.8264	28.727	139	1.0000	-1.0000	1.0648	1.3733	315.2	193 .767	1.0648	1.3733	315.2	193 .767
260	1.3465-3	-3158.0	6.8682	28.727	144	1.0000	-1.0000	1.0672	1.3721	321.3	201 .765	1.0672	1.3721	321.3	201 .765
270	1.2966-3	-3147.3	6.9085	28.727	149	1.0000	-1.0000	1.0697	1.3709	327.3	209 .764	1.0696	1.3710	327.3	209 .764
280	1.2503-3	-3136.6	6.9474	28.727	154	1.0000	-1.0000	1.0723	1.3697	333.2	217 .762	1.0722	1.3698	333.2	217 .762
290	1.2072-3	-3125.9	6.9851	28.727	159	1.0000	-1.0000	1.0749	1.3685	338.9	225 .761	1.0748	1.3685	338.9	225 .762
298	1.1742-3	-3117.1	7.0149	28.727	163	1.0000	-1.0000	1.0772	1.3674	343.5	231 .761	1.0770	1.3675	343.5	231 .761
300	1.1670-3	-3115.1	7.0216	28.727	164	1.0000	-1.0000	1.0777	1.3672	344.5	232 .761	1.0774	1.3673	344.6	232 .761
310	1.1293-3	-3104.3	7.0570	28.727	169	1.0000	-1.0000	1.0806	1.3659	350.1	240 .760	1.0802	1.3660	350.1	240 .761
320	1.0940-3	-3093.5	7.0913	28.727	174	1.0001	-1.0000	1.0836	1.3645	355.5	247 .760	1.0830	1.3647	355.5	247 .761
330	1.0609-3	-3082.7	7.1247	28.727	178	1.0001	-1.0000	1.0867	1.3631	360.8	255 .760	1.0858	1.3634	360.9	254 .761
340	1.0297-3	-3071.8	7.1572	28.727	183	1.0001	-1.0000	1.0900	1.3617	366.1	263 .759	1.0887	1.3621	366.1	262 .761
350	1.0002-3	-3060.9	7.1889	28.727	188	1.0002	-1.0000	1.0935	1.3601	371.2	270 .759	1.0917	1.3608	371.3	269 .762
360	9.7244-4	-3049.9	7.2197	28.726	192	1.0003	-1.0000	1.0973	1.3586	376.2	279 .757	1.0947	1.3594	376.4	276 .761
370	9.4615-4	-3038.9	7.2498	28.726	197	1.0004	-1.0000	1.1013	1.3569	381.2	287 .755	1.0977	1.3581	381.4	284 .760
380	9.2124-4	-3027.9	7.2793	28.726	201	1.0006	-1.0000	1.1057	1.3551	386.1	296 .752	1.1008	1.3567	386.3	292 .760
390	8.9760-4	-3016.8	7.3080	28.725	206	1.0008	-1.0000	1.1106	1.3532	390.8	305 .749	1.1040	1.3553	391.1	299 .759
400	8.7514-4	-3005.7	7.3362	28.724	210	1.0011	-1.0000	1.1159	1.3512	395.5	315 .745	1.1072	1.3540	395.9	307 .758
410	8.5376-4	-2994.5	7.3639	28.723	214	1.0015	-1.0001	1.1218	1.3491	400.1	325 .740	1.1105	1.3526	400.7	314 .758
420	8.3340-4	-2983.2	7.3910	28.722	219	1.0020	-1.0001	1.1284	1.3468	404.7	335 .736	1.1138	1.3512	405.3	322 .757
430	8.1397-4	-2971.9	7.4176	28.721	223	1.0026	-1.0001	1.1358	1.3443	409.1	347 .730	1.1171	1.3498	409.9	329 .757
440	7.9542-4	-2960.5	7.4438	28.719	227	1.0034	-1.0001	1.1440	1.3416	413.4	359 .723	1.1205	1.3484	414.4	336 .756
450	7.7768-4	-2949.0	7.4696	28.716	231	1.0043	-1.0002	1.1533	1.3388	417.6	372 .716	1.1239	1.3470	418.9	343 .756
460	7.6069-4	-2937.4	7.4951	28.713	235	1.0055	-1.0002	1.1638	1.3357	421.8	387 .707	1.1274	1.3456	423.4	351 .756
470	7.4440-4	-2925.7	7.5202	28.709	239	1.0068	-1.0003	1.1755	1.3324	425.9	403 .698	1.1309	1.3442	427.8	358 .756
480	7.2878-4	-2913.9	7.5451	28.705	243	1.0085	-1.0004	1.1886	1.3288	429.8	420 .688	1.1345	1.3428	432.1	365 .755
490	7.1377-4	-2902.0	7.5698	28.699	247	1.0104	-1.0005	1.2034	1.3250	433.7	439 .677	1.1381	1.3415	436.4	373 .755
500	6.9933-4	-2889.9	7.5942	28.692	251	1.0126	-1.0006	1.2198	1.3210	437.5	460 .666	1.1418	1.3401	440.6	380 .754
510	6.8543-4	-2877.6	7.6186	28.685	255	1.0152	-1.0007	1.2382	1.3167	441.2	483 .653	1.1455	1.3388	444.9	388 .754
520	6.7203-4	-2865.1	7.6428	28.675	259	1.0182	-1.0009	1.2586	1.3122	444.8	508 .641	1.1493	1.3374	449.1	395 .753
530	6.5910-4	-2852.4	7.6670	28.664	263	1.0216	-1.0011	1.2813	1.3075	448.3	536 .628	1.1531	1.3361	453.2	403 .752
540	6.4661-4	-2839.5	7.6912	28.652	267	1.0254	-1.0013	1.3063	1.3026	451.8	565 .616	1.1570	1.3348	457.3	411 .751
550	6.3454-4	-2826.3	7.7154	28.637	270	1.0298	-1.0015	1.3339	1.2975	455.2	597 .604	1.1609	1.3335	461.5	419 .749
560	6.2284-4	-2812.8	7.7397	28.621	274	1.0347	-1.0018	1.3641	1.2923	458.5	631 .593	1.1649	1.3322	465.5	427 .748
570	6.1151-4	-2799.0	7.7641	28.602	278	1.0401	-1.0021	1.3972	1.2870	461.8	668 .582	1.1689	1.3310	469.6	436 .746
580	6.0052-4	-2784.8	7.7887	28.580	282	1.0461	-1.0024	1.4332	1.2816	465.0	706 .572	1.1730	1.3298	473.7	444 .744
590	5.8984-4	-2770.3	7.8136	28.556	286	1.0527	-1.0028	1.4723	1.2761	468.2	746 .564	1.1771	1.3286	477.7	453 .743

TABLE 22.3D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP J/G K	(GAM)S	VS M/S	COND MICRO W/CM K	PRAN	CP J/G K	GAM	VS M/S	COND MICRO W/CM K	PRAN
K	G/CM3	J/G	J/G K														
600	5.7946-4	-2755.4	7.8387	28.529	289	1.0599	-1.0032	1.5145	1.2705	471.3	787	.556	1.1813	1.3275	481.8	461	.741
610	5.6936-4	-2740.0	7.8641	28.499	293	1.0676	-1.0037	1.5598	1.2650	474.5	830	.550	1.1856	1.3264	485.8	470	.738
620	5.5953-4	-2724.1	7.8898	28.466	296	1.0759	-1.0042	1.6083	1.2595	477.6	874	.546	1.1899	1.3253	489.9	479	.736
630	5.4994-4	-2707.8	7.9160	28.430	300	1.0848	-1.0047	1.6599	1.2541	480.7	918	.543	1.1942	1.3243	494.0	489	.734
640	5.4059-4	-2690.9	7.9425	28.390	304	1.0941	-1.0052	1.7144	1.2488	483.8	961	.541	1.1985	1.3234	498.0	498	.731
650	5.3145-4	-2673.5	7.9695	28.346	307	1.1038	-1.0058	1.7715	1.2436	486.9	1005	.542	1.2029	1.3225	502.1	507	.728
660	5.2253-4	-2655.5	7.9970	28.299	311	1.1138	-1.0064	1.8306	1.2387	490.1	1046	.544	1.2073	1.3216	506.2	517	.725
670	5.1381-4	-2636.9	8.0250	28.249	314	1.1239	-1.0070	1.8911	1.2339	493.3	1086	.547	1.2118	1.3208	510.4	527	.722
680	5.0529-4	-2617.7	8.0535	28.195	318	1.1339	-1.0076	1.9517	1.2295	496.5	1122	.552	1.2162	1.3201	514.5	537	.720
690	4.9696-4	-2597.9	8.0824	28.138	321	1.1435	-1.0082	2.0109	1.2254	499.8	1154	.559	1.2206	1.3194	518.7	547	.716
700	4.8882-4	-2577.5	8.1117	28.078	324	1.1522	-1.0087	2.0666	1.2218	503.2	1180	.568	1.2250	1.3188	522.8	557	.713
710	4.8087-4	-2556.6	8.1414	28.016	328	1.1597	-1.0092	2.1158	1.2187	506.7	1199	.579	1.2293	1.3182	527.0	567	.711
720	4.7311-4	-2535.2	8.1713	27.952	331	1.1651	-1.0095	2.1551	1.2163	510.4	1208	.591	1.2336	1.3177	531.2	577	.708
730	4.6556-4	-2513.5	8.2012	27.888	334	1.1678	-1.0097	2.1803	1.2147	514.2	1207	.604	1.2378	1.3173	535.4	587	.705
740	4.5822-4	-2491.7	8.2309	27.824	338	1.1670	-1.0097	2.1869	1.2142	518.2	1193	.619	1.2419	1.3169	539.6	597	.702
750	4.5111-4	-2469.8	8.2602	27.763	341	1.1620	-1.0094	2.1709	1.2149	522.4	1165	.635	1.2458	1.3165	543.8	607	.700
760	4.4425-4	-2448.3	8.2887	27.705	344	1.1523	-1.0089	2.1297	1.2169	526.8	1126	.651	1.2497	1.3160	547.9	616	.698
770	4.3765-4	-2427.3	8.3162	27.652	347	1.1381	-1.0081	2.0637	1.2205	531.6	1076	.666	1.2533	1.3156	551.9	625	.696
780	4.3132-4	-2407.1	8.3423	27.606	350	1.1201	-1.0071	1.9773	1.2256	536.6	1021	.679	1.2568	1.3152	555.8	634	.695
790	4.2526-4	-2387.8	8.3668	27.567	354	1.1001	-1.0059	1.8790	1.2320	541.8	965	.689	1.2602	1.3146	559.7	643	.693
800	4.1947-4	-2369.5	8.3898	27.536	357	1.0798	-1.0047	1.7791	1.2394	547.2	914	.695	1.2634	1.3141	563.4	651	.693
810	4.1393-4	-2352.2	8.4114	27.512	360	1.0613	-1.0037	1.6871	1.2470	552.5	870	.697	1.2665	1.3134	567.0	658	.692
820	4.0861-4	-2335.7	8.4316	27.494	363	1.0455	-1.0027	1.6094	1.2542	557.7	837	.698	1.2694	1.3127	570.5	665	.692
830	4.0350-4	-2320.0	8.4507	27.481	366	1.0329	-1.0020	1.5479	1.2603	562.6	813	.697	1.2723	1.3120	574.0	673	.692
840	3.9856-4	-2304.7	8.4689	27.472	369	1.0235	-1.0014	1.5018	1.2653	567.2	797	.696	1.2751	1.3112	577.4	679	.693
850	3.9378-4	-2289.9	8.4865	27.466	372	1.0165	-1.0010	1.4686	1.2690	571.4	787	.694	1.2778	1.3104	580.7	686	.693
860	3.8914-4	-2275.3	8.5035	27.461	375	1.0116	-1.0007	1.4453	1.2717	575.4	782	.693	1.2805	1.3097	584.0	693	.693
870	3.8462-4	-2261.0	8.5201	27.458	378	1.0081	-1.0005	1.4293	1.2736	579.2	781	.692	1.2832	1.3089	587.2	699	.694
880	3.8022-4	-2246.7	8.5364	27.456	381	1.0057	-1.0004	1.4184	1.2748	582.9	782	.692	1.2859	1.3081	590.4	706	.694
890	3.7593-4	-2232.6	8.5524	27.454	384	1.0040	-1.0003	1.4112	1.2756	586.4	784	.691	1.2885	1.3073	593.6	713	.695
900	3.7174-4	-2218.5	8.5681	27.453	387	1.0028	-1.0002	1.4064	1.2761	589.8	788	.691	1.2911	1.3065	596.7	719	.695
910	3.6764-4	-2204.5	8.5837	27.453	390	1.0020	-1.0001	1.4033	1.2764	593.1	792	.691	1.2937	1.3057	599.9	725	.696
920	3.6364-4	-2190.4	8.5990	27.452	393	1.0015	-1.0001	1.4013	1.2766	596.4	797	.691	1.2962	1.3049	603.0	732	.696
930	3.5973-4	-2176.4	8.6141	27.452	396	1.0011	-1.0001	1.4001	1.2767	599.7	802	.691	1.2987	1.3041	606.1	738	.697
940	3.5590-4	-2162.4	8.6291	27.451	399	1.0008	-1.0001	1.3995	1.2767	602.9	807	.692	1.3012	1.3034	609.2	745	.697
950	3.5215-4	-2148.4	8.6439	27.451	402	1.0006	-1.0000	1.3991	1.2766	606.1	813	.692	1.3037	1.3026	612.2	751	.698
960	3.4848-4	-2134.4	8.6585	27.451	405	1.0004	-1.0000	1.3991	1.2765	609.2	818	.692	1.3062	1.3019	615.3	757	.698
970	3.4488-4	-2120.4	8.6730	27.451	408	1.0003	-1.0000	1.3992	1.2765	612.4	824	.693	1.3086	1.3012	618.3	764	.699
980	3.4136-4	-2106.5	8.6874	27.451	411	1.0002	-1.0000	1.3994	1.2764	615.5	830	.693	1.3110	1.3004	621.3	770	.699
990	3.3791-4	-2092.5	8.7016	27.451	414	1.0002	-1.0000	1.3997	1.2763	618.6	835	.693	1.3134	1.2997	624.3	777	.700

TABLE 22.3D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
1000	3.3453-4	-2078.5	8.7157	27.451	417	1.0001	-1.0000	1.4000	1.2761	621.7	841 .693	1.3157	1.2991	627.3	783 .700
1050	3.1860-4	-2008.4	8.7840	27.451	431	1.0001	-1.0000	1.4021	1.2756	636.9	869 .695	1.3269	1.2958	641.9	814 .702
1100	3.0412-4	-1938.2	8.8493	27.451	445	1.0000	-1.0000	1.4047	1.2749	651.7	897 .696	1.3377	1.2927	656.3	846 .703
1150	2.9090-4	-1867.9	8.9118	27.451	458	1.0000	-1.0000	1.4077	1.2742	666.2	925 .698	1.3481	1.2898	670.3	877 .705
1200	2.7878-4	-1797.5	8.9718	27.451	472	1.0000	-1.0000	1.4111	1.2733	680.3	952 .699	1.3582	1.2870	683.9	908 .706
1250	2.6763-4	-1726.8	9.0295	27.451	485	1.0000	-1.0000	1.4149	1.2724	694.1	980 .700	1.3678	1.2844	697.3	939 .707
1300	2.5733-4	-1656.0	9.0851	27.451	498	1.0000	-1.0000	1.4190	1.2714	707.5	1008 .701	1.3770	1.2820	710.5	969 .708
1350	2.4780-4	-1584.9	9.1387	27.451	511	1.0000	-1.0000	1.4233	1.2703	720.7	1036 .702	1.3858	1.2797	723.4	1000 .709
1400	2.3895-4	-1513.6	9.1905	27.451	524	1.0000	-1.0000	1.4278	1.2693	733.6	1064 .703	1.3943	1.2775	736.0	1031 .709
1450	2.3071-4	-1442.1	9.2407	27.451	537	1.0000	-1.0000	1.4325	1.2681	746.3	1092 .704	1.4024	1.2755	748.4	1061 .710
1500	2.2302-4	-1370.4	9.2894	27.451	549	1.0000	-1.0000	1.4373	1.2670	758.7	1121 .704	1.4101	1.2736	760.7	1091 .710
1550	2.1583-4	-1298.4	9.3366	27.450	562	1.0001	-1.0000	1.4422	1.2659	770.9	1150 .704	1.4175	1.2717	772.7	1122 .710
1600	2.0908-4	-1226.2	9.3824	27.450	574	1.0001	-1.0000	1.4473	1.2647	782.9	1180 .704	1.4245	1.2700	784.5	1152 .710
1650	2.0274-4	-1153.7	9.4271	27.450	586	1.0002	-1.0000	1.4526	1.2636	794.7	1210 .704	1.4313	1.2684	796.2	1182 .710
1700	1.9678-4	-1080.9	9.4705	27.450	598	1.0003	-1.0000	1.4582	1.2623	806.2	1242 .703	1.4377	1.2669	807.7	1212 .710
1750	1.9116-4	-1007.8	9.5129	27.450	610	1.0004	-1.0000	1.4642	1.2611	817.6	1275 .701	1.4437	1.2655	819.0	1242 .710
1800	1.8584-4	-934.5	9.5542	27.449	622	1.0007	-1.0000	1.4710	1.2597	828.7	1310 .699	1.4495	1.2642	830.2	1271 .709
1850	1.8082-4	-860.7	9.5946	27.449	634	1.0010	-1.0000	1.4788	1.2582	839.7	1348 .696	1.4551	1.2629	841.2	1301 .709
1900	1.7605-4	-786.6	9.6342	27.448	646	1.0016	-1.0000	1.4881	1.2565	850.4	1389 .692	1.4603	1.2617	852.2	1330 .709
1950	1.7153-4	-711.9	9.6730	27.446	657	1.0024	-1.0001	1.4997	1.2545	860.9	1436 .686	1.4653	1.2606	862.9	1360 .708
2000	1.6723-4	-636.5	9.7111	27.444	668	1.0035	-1.0001	1.5144	1.2521	871.0	1489 .680	1.4700	1.2596	873.6	1389 .708
2050	1.6313-4	-560.4	9.7487	27.441	680	1.0052	-1.0002	1.5336	1.2492	880.8	1552 .672	1.4745	1.2586	884.2	1418 .707
2100	1.5922-4	-483.1	9.7860	27.437	691	1.0076	-1.0003	1.5592	1.2454	890.3	1626 .663	1.4788	1.2577	894.6	1447 .706
2150	1.5549-4	-404.3	9.8230	27.431	702	1.0111	-1.0004	1.5937	1.2408	899.2	1716 .652	1.4829	1.2569	905.0	1475 .706
2200	1.5191-4	-323.5	9.8602	27.423	713	1.0160	-1.0005	1.6405	1.2349	907.6	1828 .640	1.4867	1.2562	915.4	1504 .705
2250	1.4847-4	-240.0	9.8977	27.411	724	1.0230	-1.0008	1.7043	1.2277	915.3	1968 .627	1.4904	1.2555	925.7	1533 .704
2300	1.4515-4	-152.7	9.9361	27.394	735	1.0328	-1.0011	1.7908	1.2190	922.5	2145 .614	1.4938	1.2550	936.0	1562 .702
2350	1.4194-4	-60.4	9.9758	27.371	745	1.0464	-1.0017	1.9063	1.2089	929.0	2370 .600	1.4971	1.2546	946.3	1592 .701
2400	1.3882-4	38.5	10.0174	27.340	756	1.0647	-1.0024	2.0572	1.1979	935.1	2656 .586	1.5001	1.2543	956.8	1621 .699
2450	1.3578-4	146.0	10.0617	27.297	766	1.0885	-1.0033	2.2471	1.1867	941.0	3014 .571	1.5030	1.2542	967.4	1651 .698
2500	1.3279-4	263.9	10.1094	27.240	776	1.1180	-1.0045	2.4757	1.1760	947.3	3455 .556	1.5056	1.2543	978.3	1681 .695
2550	1.2984-4	394.1	10.1609	27.167	786	1.1530	-1.0060	2.7375	1.1664	954.1	3983 .540	1.5080	1.2546	989.5	1712 .692
2600	1.2691-4	538.0	10.2168	27.077	796	1.1924	-1.0077	3.0234	1.1584	961.7	4598 .523	1.5103	1.2552	1001.1	1744 .689
2650	1.2401-4	696.7	10.2773	26.967	806	1.2351	-1.0096	3.3234	1.1520	970.2	5295 .506	1.5123	1.2561	1013.1	1777 .686
2700	1.2113-4	870.5	10.3422	26.837	815	1.2801	-1.0117	3.6294	1.1470	979.5	6069 .487	1.5142	1.2572	1025.5	1810 .682
2750	1.1827-4	1059.6	10.4116	26.688	824	1.3267	-1.0140	3.9363	1.1432	989.7	6915 .469	1.5160	1.2586	1038.4	1845 .677
2800	1.1543-4	1264.1	10.4853	26.520	833	1.3746	-1.0165	4.2419	1.1405	1000.6	7829 .451	1.5177	1.2603	1051.8	1881 .672
2850	1.1260-4	1483.8	10.5631	26.334	841	1.4234	-1.0191	4.5454	1.1385	1012.2	8806 .434	1.5193	1.2623	1065.8	1918 .666
2900	1.0980-4	1718.6	10.6447	26.129	850	1.4732	-1.0219	4.8471	1.1372	1024.4	9839 .419	1.5210	1.2646	1080.2	1958 .660
2950	1.0703-4	1968.5	10.7301	25.908	858	1.5238	-1.0248	5.1469	1.1364	1037.2	10918 .405	1.5226	1.2671	1095.2	2000 .653
3000	1.0428-4	2233.2	10.8192	25.670	866	1.5750	-1.0279	5.4442	1.1360	1050.6	12028 .392	1.5243	1.2698	1110.8	2044 .646

TABLE 22.4D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE		J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
200	1.7504-2	-3221.6	5.9236	28.727	112	1.0000 -1.0000	1.0539	1.3786	282.5	151	.785	1.0539	1.3786	282.5	151 .785
210	1.6671-2	-3211.1	5.9751	28.727	118	1.0000 -1.0000	1.0560	1.3776	289.4	159	.780	1.0559	1.3776	289.4	159 .780
220	1.5913-2	-3200.5	6.0242	28.727	123	1.0000 -1.0000	1.0580	1.3766	296.1	168	.776	1.0580	1.3766	296.1	168 .776
230	1.5221-2	-3189.9	6.0713	28.727	128	1.0000 -1.0000	1.0602	1.3755	302.6	176	.773	1.0602	1.3755	302.6	176 .773
240	1.4587-2	-3179.3	6.1165	28.727	134	1.0000 -1.0000	1.0625	1.3744	309.0	185	.770	1.0625	1.3744	309.0	185 .770
250	1.4003-2	-3168.7	6.1599	28.727	139	1.0000 -1.0000	1.0648	1.3733	315.2	193	.767	1.0648	1.3733	315.2	193 .767
260	1.3465-2	-3158.0	6.2017	28.727	144	1.0000 -1.0000	1.0672	1.3721	321.3	201	.765	1.0672	1.3721	321.3	201 .765
270	1.2966-2	-3147.3	6.2420	28.727	149	1.0000 -1.0000	1.0697	1.3709	327.3	209	.764	1.0696	1.3710	327.3	209 .764
280	1.2503-2	-3136.6	6.2810	28.727	154	1.0000 -1.0000	1.0722	1.3697	333.2	217	.762	1.0722	1.3698	333.2	217 .762
290	1.2072-2	-3125.9	6.3187	28.727	159	1.0000 -1.0000	1.0749	1.3685	338.9	225	.762	1.0748	1.3685	338.9	225 .762
298	1.1742-2	-3117.1	6.3485	28.727	163	1.0000 -1.0000	1.0771	1.3675	343.5	231	.761	1.0769	1.3675	343.5	231 .761
300	1.1670-2	-3115.1	6.3552	28.727	164	1.0000 -1.0000	1.0776	1.3672	344.6	232	.761	1.0774	1.3673	344.6	232 .761
310	1.1293-2	-3104.3	6.3905	28.727	169	1.0000 -1.0000	1.0803	1.3659	350.1	240	.761	1.0802	1.3660	350.1	240 .761
320	1.0940-2	-3093.5	6.4249	28.727	174	1.0000 -1.0000	1.0832	1.3646	355.5	247	.761	1.0830	1.3647	355.5	247 .761
330	1.0609-2	-3082.7	6.4583	28.727	178	1.0000 -1.0000	1.0861	1.3633	360.8	255	.761	1.0858	1.3634	360.9	254 .761
340	1.0297-2	-3071.8	6.4907	28.727	183	1.0000 -1.0000	1.0892	1.3619	366.1	262	.761	1.0887	1.3621	366.1	262 .761
350	1.0002-2	-3060.9	6.5223	28.727	188	1.0001 -1.0000	1.0923	1.3605	371.2	269	.761	1.0917	1.3608	371.3	269 .762
360	9.7245-3	-3050.0	6.5532	28.727	192	1.0001 -1.0000	1.0956	1.3591	376.3	277	.760	1.0947	1.3594	376.4	276 .761
370	9.4617-3	-3039.0	6.5832	28.727	197	1.0001 -1.0000	1.0989	1.3576	381.3	285	.759	1.0977	1.3581	381.4	284 .760
380	9.2127-3	-3028.0	6.6126	28.727	201	1.0002 -1.0000	1.1025	1.3561	386.2	293	.757	1.1008	1.3567	386.3	292 .760
390	8.9764-3	-3016.9	6.6413	28.726	206	1.0002 -1.0000	1.1062	1.3546	391.0	301	.756	1.1040	1.3553	391.1	299 .759
400	8.7519-3	-3005.9	6.6693	28.726	210	1.0003 -1.0000	1.1100	1.3530	395.8	309	.754	1.1072	1.3540	395.9	307 .758
410	8.5384-3	-2994.7	6.6968	28.726	214	1.0005 -1.0000	1.1141	1.3514	400.5	317	.752	1.1104	1.3526	400.6	314 .758
420	8.3350-3	-2983.6	6.7237	28.726	219	1.0006 -1.0000	1.1184	1.3497	405.1	326	.750	1.1137	1.3512	405.3	321 .757
430	8.1410-3	-2972.4	6.7500	28.725	223	1.0008 -1.0000	1.1230	1.3479	409.6	334	.748	1.1170	1.3498	409.9	329 .757
440	7.9558-3	-2961.1	6.7759	28.724	227	1.0011 -1.0000	1.1279	1.3461	414.1	343	.746	1.1203	1.3484	414.4	336 .757
450	7.7788-3	-2949.8	6.8013	28.724	231	1.0013 -1.0001	1.1332	1.3442	418.4	352	.743	1.1237	1.3470	418.9	343 .757
460	7.6094-3	-2938.4	6.8263	28.723	235	1.0017 -1.0001	1.1389	1.3422	422.8	362	.740	1.1271	1.3456	423.3	350 .757
470	7.4472-3	-2927.0	6.8508	28.722	239	1.0021 -1.0001	1.1449	1.3402	427.0	372	.736	1.1306	1.3442	427.6	357 .757
480	7.2917-3	-2915.5	6.8750	28.720	243	1.0027 -1.0001	1.1515	1.3380	431.2	382	.732	1.1341	1.3428	432.0	365 .756
490	7.1425-3	-2904.0	6.8988	28.718	247	1.0033 -1.0002	1.1587	1.3357	435.3	393	.728	1.1376	1.3414	436.2	372 .756
500	6.9991-3	-2892.4	6.9223	28.716	251	1.0040 -1.0002	1.1664	1.3334	439.4	405	.723	1.1411	1.3400	440.4	379 .756
510	6.8613-3	-2880.7	6.9455	28.714	255	1.0049 -1.0002	1.1748	1.3309	443.3	418	.717	1.1447	1.3386	444.6	386 .756
520	6.7286-3	-2868.9	6.9684	28.711	259	1.0058 -1.0003	1.1839	1.3283	447.2	431	.711	1.1483	1.3372	448.7	394 .755
530	6.6009-3	-2857.0	6.9910	28.707	263	1.0070 -1.0004	1.1938	1.3256	451.1	446	.704	1.1520	1.3359	452.8	401 .755
540	6.4777-3	-2845.0	7.0135	28.703	267	1.0083 -1.0004	1.2046	1.3228	454.9	461	.697	1.1557	1.3345	456.9	408 .754
550	6.3589-3	-2832.9	7.0357	28.698	270	1.0098 -1.0005	1.2164	1.3199	458.6	477	.689	1.1594	1.3331	460.9	416 .754
560	6.2441-3	-2820.7	7.0577	28.693	274	1.0115 -1.0006	1.2292	1.3168	462.3	495	.681	1.1631	1.3318	464.9	424 .753
570	6.1332-3	-2808.3	7.0796	28.687	278	1.0134 -1.0007	1.2431	1.3136	465.8	514	.673	1.1668	1.3305	468.8	431 .752
580	6.0260-3	-2795.8	7.1013	28.679	282	1.0155 -1.0008	1.2582	1.3103	469.4	533	.664	1.1706	1.3292	472.8	439 .751
590	5.9222-3	-2783.1	7.1230	28.671	285	1.0180 -1.0010	1.2747	1.3068	472.8	555	.656	1.1744	1.3279	476.6	447 .750

TABLE 22.4D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.8216-3	-2770.3	7.1445	28.662	289	1.0206	-1.0011	1.2926	1.3032	476.3	577	.647	1.1782	1.3266	480.5	455	.749
610	5.7240-3	-2757.3	7.1661	28.652	293	1.0236	-1.0013	1.3121	1.2995	479.6	601	.639	1.1821	1.3254	484.4	462	.748
620	5.6294-3	-2744.0	7.1876	28.640	296	1.0270	-1.0015	1.3332	1.2956	482.9	626	.631	1.1860	1.3241	488.2	471	.747
630	5.5375-3	-2730.6	7.2091	28.627	300	1.0306	-1.0017	1.3560	1.2917	486.2	653	.623	1.1898	1.3229	492.0	479	.746
640	5.4482-3	-2716.9	7.2306	28.612	303	1.0347	-1.0020	1.3807	1.2876	489.3	681	.615	1.1938	1.3218	495.8	487	.744
650	5.3613-3	-2703.0	7.2522	28.596	307	1.0391	-1.0022	1.4075	1.2834	492.5	711	.608	1.1977	1.3206	499.6	495	.743
660	5.2767-3	-2688.8	7.2739	28.577	311	1.0439	-1.0025	1.4363	1.2791	495.6	741	.602	1.2016	1.3195	503.4	503	.741
670	5.1943-3	-2674.2	7.2958	28.557	314	1.0491	-1.0028	1.4673	1.2748	498.7	773	.596	1.2056	1.3184	507.1	512	.740
680	5.1140-3	-2659.4	7.3178	28.536	318	1.0547	-1.0032	1.5007	1.2704	501.7	807	.591	1.2095	1.3173	510.9	520	.738
690	5.0357-3	-2644.2	7.3399	28.512	321	1.0608	-1.0035	1.5364	1.2659	504.7	841	.586	1.2135	1.3163	514.6	529	.737
700	4.9591-3	-2628.7	7.3623	28.485	324	1.0673	-1.0039	1.5745	1.2614	507.7	876	.583	1.2175	1.3153	518.4	537	.735
710	4.8844-3	-2612.7	7.3849	28.457	328	1.0743	-1.0044	1.6150	1.2570	510.6	912	.580	1.2215	1.3144	522.2	546	.733
720	4.8113-3	-2596.4	7.4078	28.426	331	1.0817	-1.0048	1.6578	1.2525	513.6	949	.579	1.2255	1.3135	525.9	555	.731
730	4.7398-3	-2579.6	7.4310	28.392	335	1.0894	-1.0053	1.7027	1.2481	516.5	986	.578	1.2294	1.3127	529.7	564	.729
740	4.6698-3	-2562.3	7.4545	28.356	338	1.0975	-1.0058	1.7497	1.2439	519.5	1023	.578	1.2334	1.3119	533.5	573	.727
750	4.6013-3	-2544.6	7.4783	28.317	341	1.1059	-1.0063	1.7981	1.2397	522.5	1059	.579	1.2373	1.3111	537.3	582	.725
760	4.5341-3	-2526.3	7.5024	28.276	344	1.1144	-1.0068	1.8476	1.2358	525.5	1095	.581	1.2413	1.3104	541.2	591	.723
770	4.4683-3	-2507.6	7.5269	28.232	348	1.1230	-1.0074	1.8973	1.2321	528.6	1129	.584	1.2452	1.3098	545.0	600	.721
780	4.4038-3	-2488.4	7.5517	28.186	351	1.1313	-1.0079	1.9463	1.2286	531.7	1161	.588	1.2490	1.3092	548.8	609	.719
790	4.3405-3	-2468.7	7.5768	28.137	354	1.1394	-1.0084	1.9934	1.2255	534.9	1189	.593	1.2528	1.3087	552.7	619	.717
800	4.2786-3	-2448.5	7.6021	28.087	357	1.1467	-1.0089	2.0371	1.2228	538.1	1214	.600	1.2566	1.3082	556.6	628	.715
810	4.2179-3	-2428.0	7.6277	28.035	360	1.1531	-1.0093	2.0756	1.2205	541.5	1233	.607	1.2603	1.3077	560.5	637	.713
820	4.1585-3	-2407.0	7.6533	27.981	363	1.1580	-1.0096	2.1069	1.2188	544.9	1245	.615	1.2639	1.3073	564.4	646	.711
830	4.1004-3	-2385.9	7.6790	27.927	367	1.1612	-1.0099	2.1287	1.2176	548.5	1250	.624	1.2675	1.3070	568.3	655	.709
840	4.0438-3	-2364.5	7.7046	27.873	370	1.1621	-1.0100	2.1389	1.2171	552.2	1247	.634	1.2710	1.3067	572.2	664	.708
850	3.9886-3	-2343.1	7.7299	27.820	373	1.1603	-1.0099	2.1353	1.2174	556.1	1234	.645	1.2744	1.3064	576.1	673	.706
860	3.9349-3	-2321.9	7.7548	27.768	376	1.1556	-1.0097	2.1165	1.2184	560.1	1212	.656	1.2777	1.3061	579.9	681	.705
870	3.8829-3	-2300.9	7.7791	27.719	379	1.1478	-1.0092	2.0820	1.2204	564.3	1183	.667	1.2810	1.3058	583.7	690	.703
880	3.8325-3	-2280.3	7.8026	27.674	382	1.1370	-1.0086	2.0325	1.2232	568.7	1146	.677	1.2841	1.3054	587.5	698	.702
890	3.7838-3	-2260.2	7.8252	27.634	385	1.1237	-1.0078	1.9703	1.2270	573.2	1105	.686	1.2871	1.3051	591.2	706	.701
900	3.7369-3	-2240.9	7.8468	27.598	387	1.1086	-1.0069	1.8993	1.2316	577.9	1062	.693	1.2900	1.3047	594.8	714	.700
910	3.6918-3	-2222.3	7.8674	27.567	390	1.0927	-1.0059	1.8245	1.2368	582.6	1020	.698	1.2929	1.3043	598.3	721	.700
920	3.6482-3	-2204.4	7.8870	27.541	393	1.0770	-1.0050	1.7509	1.2423	587.4	982	.702	1.2956	1.3038	601.8	729	.699
930	3.6063-3	-2187.2	7.9055	27.521	396	1.0624	-1.0041	1.6827	1.2478	592.1	949	.703	1.2983	1.3033	605.1	736	.699
940	3.5658-3	-2170.7	7.9232	27.504	399	1.0496	-1.0032	1.6228	1.2531	596.7	922	.703	1.3010	1.3027	608.4	743	.699
950	3.5266-3	-2154.7	7.9401	27.492	402	1.0387	-1.0026	1.5725	1.2578	601.1	901	.702	1.3035	1.3021	611.6	750	.699
960	3.4886-3	-2139.2	7.9563	27.482	405	1.0298	-1.0020	1.5318	1.2618	605.4	885	.701	1.3060	1.3015	614.8	756	.699
970	3.4517-3	-2124.1	7.9720	27.474	408	1.0228	-1.0015	1.4999	1.2651	609.4	874	.700	1.3085	1.3009	618.0	763	.699
980	3.4158-3	-2109.2	7.9873	27.469	411	1.0173	-1.0012	1.4753	1.2677	613.2	868	.699	1.3109	1.3002	621.0	770	.700
990	3.3808-3	-2094.6	8.0022	27.464	414	1.0132	-1.0009	1.4567	1.2697	616.9	864	.698	1.3133	1.2996	624.1	776	.700

TABLE 22.4D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP J/G K	(GAM)S	VS M/S	COND MICRO W/CM K	PRAN	CP J/G K	GAM	VS M/S	COND MICRO W/CM K	PRAN
K	G/CM3	J/G	J/G K														
1000	3.3466-3	-2080.1	8.0167	27.461	417	1.0100	-1.0007	1.4428	1.2712	620.4	862	.697	1.3157	1.2989	627.1	783	.700
1050	3.1864-3	-2008.9	8.0862	27.454	431	1.0026	-1.0002	1.4126	1.2744	636.6	874	.696	1.3269	1.2957	641.9	814	.702
1100	3.0413-3	-1938.4	8.1518	27.452	445	1.0008	-1.0001	1.4076	1.2746	651.6	898	.697	1.3377	1.2927	656.2	846	.703
1150	2.9090-3	-1868.0	8.2143	27.451	458	1.0003	-1.0000	1.4087	1.2741	666.2	925	.698	1.3481	1.2898	670.3	877	.705
1200	2.7878-3	-1797.5	8.2743	27.451	472	1.0002	-1.0000	1.4115	1.2733	680.3	953	.699	1.3582	1.2870	683.9	908	.706
1250	2.6763-3	-1726.8	8.3320	27.451	485	1.0001	-1.0000	1.4151	1.2724	694.1	980	.700	1.3678	1.2844	697.3	939	.707
1300	2.5733-3	-1656.0	8.3876	27.451	498	1.0001	-1.0000	1.4191	1.2714	707.5	1008	.702	1.3770	1.2820	710.5	969	.708
1350	2.4780-3	-1584.9	8.4413	27.451	511	1.0000	-1.0000	1.4234	1.2703	720.7	1036	.703	1.3858	1.2797	723.4	1000	.709
1400	2.3895-3	-1513.7	8.4931	27.451	524	1.0000	-1.0000	1.4278	1.2693	733.6	1064	.703	1.3943	1.2775	736.0	1031	.709
1450	2.3071-3	-1442.1	8.5433	27.451	537	1.0000	-1.0000	1.4324	1.2682	746.3	1092	.704	1.4024	1.2755	748.4	1061	.710
1500	2.2302-3	-1370.4	8.5919	27.451	549	1.0000	-1.0000	1.4371	1.2671	758.7	1120	.705	1.4101	1.2736	760.7	1091	.710
1550	2.1583-3	-1298.4	8.6391	27.451	562	1.0000	-1.0000	1.4418	1.2660	770.9	1149	.705	1.4175	1.2717	772.7	1122	.710
1600	2.0908-3	-1226.2	8.6850	27.451	574	1.0000	-1.0000	1.4466	1.2648	782.9	1178	.705	1.4245	1.2700	784.5	1152	.710
1650	2.0275-3	-1153.8	8.7296	27.451	586	1.0001	-1.0000	1.4514	1.2638	794.7	1207	.705	1.4313	1.2684	796.2	1182	.710
1700	1.9678-3	-1081.1	8.7730	27.450	598	1.0001	-1.0000	1.4563	1.2627	806.3	1236	.705	1.4377	1.2669	807.7	1212	.710
1750	1.9116-3	-1008.1	8.8152	27.450	610	1.0001	-1.0000	1.4612	1.2616	817.7	1266	.705	1.4437	1.2655	819.0	1241	.710
1800	1.8585-3	-935.0	8.8565	27.450	622	1.0002	-1.0000	1.4663	1.2605	829.0	1296	.704	1.4495	1.2642	830.2	1271	.710
1850	1.8082-3	-861.5	8.8967	27.450	634	1.0003	-1.0000	1.4716	1.2594	840.1	1327	.703	1.4550	1.2629	841.2	1301	.709
1900	1.7606-3	-787.8	8.9360	27.450	646	1.0005	-1.0000	1.4773	1.2582	850.9	1360	.701	1.4603	1.2617	852.1	1330	.709
1950	1.7155-3	-713.8	8.9745	27.449	657	1.0007	-1.0000	1.4835	1.2570	861.7	1394	.699	1.4653	1.2606	862.9	1359	.708
2000	1.6725-3	-639.4	9.0121	27.449	668	1.0011	-1.0000	1.4906	1.2557	872.2	1430	.697	1.4700	1.2595	873.5	1388	.708
2050	1.6317-3	-564.7	9.0491	27.448	680	1.0016	-1.0001	1.4989	1.2542	882.5	1468	.694	1.4745	1.2586	884.0	1417	.707
2100	1.5928-3	-489.5	9.0853	27.447	691	1.0023	-1.0001	1.5088	1.2525	892.6	1510	.690	1.4788	1.2576	894.5	1446	.707
2150	1.5556-3	-413.8	9.1209	27.445	702	1.0032	-1.0001	1.5209	1.2506	902.5	1556	.686	1.4828	1.2568	904.8	1474	.706
2200	1.5201-3	-337.4	9.1561	27.442	713	1.0046	-1.0002	1.5359	1.2483	912.2	1609	.681	1.4867	1.2560	915.0	1503	.705
2250	1.4862-3	-260.1	9.1908	27.439	724	1.0064	-1.0002	1.5550	1.2455	921.5	1668	.675	1.4904	1.2552	925.1	1532	.705
2300	1.4536-3	-181.8	9.2252	27.434	735	1.0089	-1.0003	1.5794	1.2422	930.5	1737	.668	1.4938	1.2545	935.1	1560	.704
2350	1.4224-3	-102.1	9.2595	27.428	746	1.0122	-1.0004	1.6107	1.2382	939.2	1818	.661	1.4971	1.2539	945.1	1589	.703
2400	1.3923-3	-20.6	9.2938	27.420	756	1.0168	-1.0006	1.6510	1.2335	947.4	1914	.652	1.5003	1.2533	955.0	1617	.702
2450	1.3634-3	63.2	9.3284	27.409	767	1.0228	-1.0008	1.7025	1.2278	955.3	2029	.643	1.5032	1.2528	964.9	1646	.701
2500	1.3354-3	149.9	9.3634	27.394	777	1.0307	-1.0011	1.7681	1.2213	962.7	2168	.634	1.5060	1.2524	974.8	1674	.699
2550	1.3083-3	240.3	9.3992	27.375	788	1.0410	-1.0015	1.8503	1.2141	969.7	2336	.624	1.5087	1.2521	984.7	1703	.698
2600	1.2819-3	335.3	9.4361	27.350	798	1.0541	-1.0021	1.9515	1.2063	976.4	2538	.614	1.5112	1.2518	994.7	1732	.696
2650	1.2563-3	435.8	9.4744	27.317	808	1.0703	-1.0028	2.0729	1.1982	983.1	2779	.603	1.5135	1.2517	1004.8	1761	.694
2700	1.2312-3	542.9	9.5144	27.277	818	1.0897	-1.0036	2.2142	1.1903	989.7	3062	.592	1.5157	1.2517	1015.0	1791	.693
2750	1.2065-3	657.5	9.5565	27.226	828	1.1121	-1.0046	2.3731	1.1828	996.7	3389	.580	1.5177	1.2519	1025.3	1820	.691
2800	1.1823-3	780.4	9.6007	27.165	838	1.1373	-1.0058	2.5458	1.1761	1004.0	3761	.567	1.5196	1.2522	1035.9	1849	.688
2850	1.1585-3	912.2	9.6474	27.093	847	1.1647	-1.0071	2.7274	1.1704	1011.7	4176	.553	1.5213	1.2527	1046.7	1879	.686
2900	1.1350-3	1053.3	9.6964	27.009	856	1.1935	-1.0085	2.9133	1.1656	1020.1	4629	.539	1.5229	1.2533	1057.8	1909	.683
2950	1.1118-3	1203.6	9.7478	26.913	866	1.2234	-1.0100	3.0996	1.1617	1028.9	5120	.524	1.5244	1.2542	1069.1	1939	.680
3000	1.0889-3	1363.2	9.8015	26.805	875	1.2539	-1.0116	3.2835	1.1586	1038.3	5644	.509	1.5259	1.2551	1080.7	1971	.677

TABLE 22.5D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	8.7521-2	-3221.6	5.4578	28.727	112	1.0000	-1.0000	1.0539	1.3786	282.5	151 .785	1.0539	1.3786	282.5	151 .785
210	8.3353-2	-3211.1	5.5093	28.727	118	1.0000	-1.0000	1.0560	1.3776	289.4	159 .780	1.0559	1.3776	289.4	159 .780
220	7.9564-2	-3200.5	5.5584	28.727	123	1.0000	-1.0000	1.0581	1.3765	296.1	168 .776	1.0580	1.3766	296.1	168 .776
230	7.6105-2	-3189.9	5.6055	28.727	128	1.0000	-1.0000	1.0602	1.3755	302.6	176 .773	1.0602	1.3755	302.6	176 .773
240	7.2934-2	-3179.3	5.6507	28.727	134	1.0000	-1.0000	1.0625	1.3744	309.0	185 .770	1.0625	1.3744	309.0	185 .770
250	7.0017-2	-3168.7	5.6941	28.727	139	1.0000	-1.0000	1.0648	1.3733	315.2	193 .767	1.0648	1.3733	315.2	193 .767
260	6.7324-2	-3158.0	5.7359	28.727	144	1.0000	-1.0000	1.0672	1.3721	321.3	201 .765	1.0672	1.3721	321.3	201 .765
270	6.4831-2	-3147.3	5.7762	28.727	149	1.0000	-1.0000	1.0697	1.3709	327.3	209 .764	1.0696	1.3710	327.3	209 .764
280	6.2515-2	-3136.6	5.8152	28.727	154	1.0000	-1.0000	1.0722	1.3697	333.2	217 .762	1.0722	1.3698	333.2	217 .762
290	6.0360-2	-3125.9	5.8529	28.727	159	1.0000	-1.0000	1.0749	1.3685	338.9	225 .762	1.0748	1.3685	338.9	225 .762
298	5.8710-2	-3117.1	5.8827	28.727	163	1.0000	-1.0000	1.0771	1.3675	343.5	231 .761	1.0769	1.3675	343.5	231 .761
300	5.8348-2	-3115.1	5.8893	28.727	164	1.0000	-1.0000	1.0776	1.3672	344.5	232 .761	1.0774	1.3673	344.6	232 .761
310	5.6465-2	-3104.3	5.9247	28.727	169	1.0000	-1.0000	1.0803	1.3659	350.1	240 .761	1.0802	1.3660	350.1	240 .761
320	5.4701-2	-3093.5	5.9591	28.727	174	1.0000	-1.0000	1.0831	1.3646	355.5	247 .761	1.0830	1.3647	355.5	247 .761
330	5.3043-2	-3082.7	5.9924	28.727	178	1.0000	-1.0000	1.0860	1.3633	360.8	254 .761	1.0858	1.3634	360.9	254 .761
340	5.1483-2	-3071.8	6.0249	28.727	183	1.0000	-1.0000	1.0890	1.3620	366.1	262 .761	1.0887	1.3621	366.1	262 .761
350	5.0012-2	-3060.9	6.0565	28.727	188	1.0000	-1.0000	1.0921	1.3606	371.3	269 .761	1.0917	1.3608	371.3	269 .762
360	4.8623-2	-3050.0	6.0873	28.727	192	1.0000	-1.0000	1.0952	1.3592	376.3	277 .761	1.0947	1.3594	376.4	276 .761
370	4.7309-2	-3039.0	6.1174	28.727	197	1.0000	-1.0000	1.0984	1.3578	381.3	284 .760	1.0977	1.3581	381.4	284 .760
380	4.6064-2	-3028.0	6.1467	28.727	201	1.0001	-1.0000	1.1017	1.3564	386.2	292 .759	1.1008	1.3567	386.3	292 .760
390	4.4883-2	-3017.0	6.1754	28.727	206	1.0001	-1.0000	1.1051	1.3549	391.1	300 .757	1.1040	1.3553	391.1	299 .759
400	4.3760-2	-3005.9	6.2034	28.727	210	1.0001	-1.0000	1.1086	1.3534	395.8	308 .756	1.1071	1.3540	395.9	307 .758
410	4.2693-2	-2994.8	6.2308	28.727	214	1.0002	-1.0000	1.1122	1.3519	400.5	316 .755	1.1104	1.3526	400.6	314 .758
420	4.1676-2	-2983.6	6.2576	28.727	219	1.0002	-1.0000	1.1159	1.3504	405.2	323 .754	1.1136	1.3512	405.3	321 .757
430	4.0707-2	-2972.5	6.2840	28.726	223	1.0003	-1.0000	1.1198	1.3488	409.7	331 .753	1.1169	1.3498	409.9	329 .757
440	3.9781-2	-2961.2	6.3097	28.726	227	1.0004	-1.0000	1.1239	1.3472	414.2	339 .752	1.1203	1.3484	414.4	336 .757
450	3.8897-2	-2950.0	6.3350	28.726	231	1.0006	-1.0000	1.1281	1.3456	418.6	347 .751	1.1237	1.3470	418.9	343 .757
460	3.8051-2	-2938.7	6.3599	28.725	235	1.0007	-1.0000	1.1325	1.3439	423.0	355 .749	1.1271	1.3456	423.3	350 .757
470	3.7240-2	-2927.3	6.3843	28.725	239	1.0009	-1.0000	1.1371	1.3422	427.3	364 .747	1.1305	1.3442	427.6	357 .757
480	3.6464-2	-2915.9	6.4083	28.724	243	1.0011	-1.0001	1.1420	1.3404	431.6	372 .746	1.1340	1.3428	431.9	364 .757
490	3.5719-2	-2904.5	6.4319	28.723	247	1.0014	-1.0001	1.1471	1.3386	435.7	381 .743	1.1375	1.3414	436.2	371 .757
500	3.5003-2	-2893.0	6.4551	28.723	251	1.0017	-1.0001	1.1526	1.3368	439.9	390 .741	1.1410	1.3400	440.4	379 .757
510	3.4316-2	-2881.4	6.4780	28.721	255	1.0021	-1.0001	1.1583	1.3349	443.9	400 .738	1.1445	1.3386	444.5	386 .756
520	3.3654-2	-2869.8	6.5005	28.720	259	1.0026	-1.0001	1.1643	1.3329	447.9	410 .735	1.1481	1.3372	448.7	393 .756
530	3.3017-2	-2858.2	6.5228	28.719	263	1.0031	-1.0002	1.1708	1.3309	451.9	421 .731	1.1517	1.3358	452.7	400 .756
540	3.2404-2	-2846.4	6.5447	28.717	267	1.0037	-1.0002	1.1777	1.3288	455.8	432 .727	1.1553	1.3344	456.8	408 .755
550	3.1812-2	-2834.6	6.5664	28.715	270	1.0043	-1.0002	1.1850	1.3267	459.7	443 .723	1.1589	1.3330	460.8	415 .755
560	3.1242-2	-2822.7	6.5878	28.712	274	1.0051	-1.0003	1.1928	1.3245	463.4	455 .718	1.1626	1.3317	464.7	423 .754
570	3.0691-2	-2810.7	6.6090	28.709	278	1.0060	-1.0003	1.2011	1.3222	467.2	468 .713	1.1663	1.3303	468.6	430 .754
580	3.0158-2	-2798.7	6.6300	28.706	282	1.0070	-1.0004	1.2101	1.3198	470.9	481 .708	1.1700	1.3290	472.5	438 .753
590	2.9643-2	-2786.5	6.6507	28.702	285	1.0081	-1.0004	1.2196	1.3174	474.5	496 .702	1.1737	1.3277	476.4	445 .752

TABLE 22.5D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
600	2.9145-2	-2774.3	6.6713	28.698	289	1.0094	-1.0005	1.2299	1.3149	478.1	510 .697	1.1774	1.3264	480.2	453 .752
610	2.8662-2	-2761.9	6.6917	28.694	293	1.0108	-1.0006	1.2409	1.3123	481.6	526 .691	1.1811	1.3251	484.0	460 .751
620	2.8195-2	-2749.5	6.7120	28.688	296	1.0123	-1.0007	1.2528	1.3096	485.1	542 .685	1.1849	1.3238	487.7	468 .750
630	2.7741-2	-2736.9	6.7322	28.682	300	1.0141	-1.0008	1.2655	1.3068	488.5	559 .678	1.1886	1.3225	491.5	476 .749
640	2.7301-2	-2724.2	6.7522	28.675	303	1.0160	-1.0009	1.2792	1.3039	491.9	578 .672	1.1924	1.3213	495.2	484 .748
650	2.6874-2	-2711.3	6.7721	28.668	307	1.0182	-1.0010	1.2939	1.3009	495.2	597 .666	1.1962	1.3201	498.9	491 .747
660	2.6459-2	-2698.3	6.7920	28.659	311	1.0205	-1.0012	1.3098	1.2978	498.5	617 .660	1.2000	1.3189	502.5	499 .746
670	2.6056-2	-2685.1	6.8118	28.650	314	1.0231	-1.0014	1.3268	1.2947	501.7	637 .654	1.2037	1.3177	506.2	507 .745
680	2.5663-2	-2671.7	6.8316	28.639	318	1.0259	-1.0015	1.3451	1.2914	504.9	659 .648	1.2075	1.3165	509.8	515 .744
690	2.5281-2	-2658.2	6.8514	28.628	321	1.0290	-1.0017	1.3648	1.2880	508.1	682 .642	1.2113	1.3154	513.4	523 .743
700	2.4909-2	-2644.4	6.8712	28.615	324	1.0324	-1.0019	1.3859	1.2846	511.2	706 .636	1.2151	1.3143	517.0	531 .742
710	2.4546-2	-2630.5	6.8910	28.601	328	1.0361	-1.0022	1.4085	1.2811	514.2	732 .631	1.2189	1.3132	520.6	539 .741
720	2.4192-2	-2616.3	6.9109	28.586	331	1.0401	-1.0024	1.4327	1.2775	517.2	758 .626	1.2227	1.3121	524.2	547 .740
730	2.3847-2	-2601.8	6.9308	28.570	335	1.0444	-1.0027	1.4586	1.2738	520.2	785 .622	1.2265	1.3111	527.8	556 .739
740	2.3510-2	-2587.1	6.9508	28.551	338	1.0491	-1.0030	1.4862	1.2701	523.2	813 .618	1.2303	1.3101	531.3	564 .737
750	2.3180-2	-2572.1	6.9710	28.532	341	1.0541	-1.0033	1.5156	1.2664	526.1	842 .614	1.2340	1.3091	534.9	572 .736
760	2.2858-2	-2556.8	6.9913	28.510	345	1.0594	-1.0036	1.5467	1.2626	529.0	872 .611	1.2378	1.3082	538.5	580 .735
770	2.2543-2	-2541.1	7.0117	28.487	348	1.0651	-1.0040	1.5796	1.2589	531.9	903 .609	1.2415	1.3073	542.0	589 .733
780	2.2234-2	-2525.2	7.0323	28.462	351	1.0712	-1.0044	1.6142	1.2552	534.8	934 .607	1.2452	1.3065	545.6	597 .732
790	2.1932-2	-2508.8	7.0531	28.435	354	1.0775	-1.0048	1.6504	1.2515	537.7	966 .605	1.2489	1.3057	549.2	606 .731
800	2.1636-2	-2492.2	7.0741	28.406	357	1.0842	-1.0052	1.6880	1.2479	540.6	998 .605	1.2526	1.3049	552.8	614 .729
810	2.1346-2	-2475.1	7.0953	28.375	361	1.0911	-1.0056	1.7269	1.2444	543.5	1031 .604	1.2562	1.3042	556.4	623 .728
820	2.1061-2	-2457.6	7.1167	28.342	364	1.0982	-1.0061	1.7667	1.2410	546.4	1063 .605	1.2598	1.3035	560.0	631 .726
830	2.0781-2	-2439.7	7.1384	28.307	367	1.1055	-1.0066	1.8070	1.2378	549.3	1095 .606	1.2634	1.3029	563.6	640 .725
840	2.0507-2	-2421.5	7.1603	28.270	370	1.1128	-1.0070	1.8475	1.2347	552.3	1126 .607	1.2669	1.3023	567.2	648 .723
850	2.0238-2	-2402.8	7.1824	28.231	373	1.1201	-1.0075	1.8874	1.2319	555.3	1155 .610	1.2704	1.3018	570.9	657 .722
860	1.9974-2	-2383.7	7.2047	28.191	376	1.1271	-1.0080	1.9261	1.2293	558.4	1183 .613	1.2738	1.3013	574.5	665 .720
870	1.9714-2	-2364.3	7.2272	28.148	379	1.1339	-1.0084	1.9628	1.2271	561.5	1208 .616	1.2772	1.3008	578.2	674 .719
880	1.9460-2	-2344.5	7.2498	28.104	382	1.1400	-1.0089	1.9965	1.2251	564.7	1230 .620	1.2806	1.3004	581.9	682 .718
890	1.9210-2	-2324.4	7.2725	28.059	385	1.1455	-1.0092	2.0262	1.2235	568.0	1248 .625	1.2838	1.3001	585.5	691 .716
900	1.8966-2	-2304.0	7.2953	28.012	388	1.1499	-1.0096	2.0508	1.2222	571.4	1262 .631	1.2870	1.2997	589.2	699 .715
910	1.8726-2	-2283.4	7.3181	27.966	391	1.1531	-1.0098	2.0690	1.2214	574.8	1270 .637	1.2902	1.2994	592.9	708 .713
920	1.8491-2	-2262.6	7.3407	27.919	394	1.1549	-1.0100	2.0798	1.2210	578.4	1273 .644	1.2933	1.2992	596.6	716 .712
930	1.8262-2	-2241.8	7.3633	27.872	397	1.1549	-1.0100	2.0821	1.2211	582.0	1269 .651	1.2963	1.2989	600.3	724 .711
940	1.8038-2	-2221.0	7.3855	27.826	400	1.1530	-1.0100	2.0749	1.2217	585.8	1259 .659	1.2992	1.2987	604.0	732 .709
950	1.7819-2	-2200.3	7.4074	27.781	403	1.1490	-1.0098	2.0578	1.2228	589.6	1243 .667	1.3021	1.2984	607.6	740 .708
960	1.7607-2	-2179.9	7.4288	27.739	406	1.1429	-1.0095	2.0307	1.2245	593.6	1221 .675	1.3048	1.2982	611.2	748 .707
970	1.7400-2	-2159.8	7.4496	27.699	408	1.1348	-1.0090	1.9940	1.2268	597.7	1194 .682	1.3076	1.2980	614.8	756 .706
980	1.7199-2	-2140.0	7.4699	27.662	411	1.1249	-1.0084	1.9490	1.2297	601.8	1164 .689	1.3102	1.2977	618.3	764 .706
990	1.7005-2	-2120.8	7.4894	27.629	414	1.1135	-1.0077	1.8975	1.2330	606.1	1131 .695	1.3127	1.2974	621.7	771 .705

TABLE 22.5D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
1000	1.6817-2	-2102.1	7.5082	27.599	417	1.1012	-1.0069	1.8420	1.2368	610.4	1098	.700	1.3152	1.2971	625.1	778	.705
1050	1.5961-2	-2016.8	7.5915	27.503	431	1.0439	-1.0031	1.5875	1.2569	631.6	969	.706	1.3268	1.2951	641.2	813	.703
1100	1.5216-2	-1941.0	7.6620	27.469	445	1.0148	-1.0011	1.4643	1.2686	649.9	929	.701	1.3377	1.2924	656.0	845	.704
1150	1.4549-2	-1868.9	7.7261	27.458	458	1.0050	-1.0004	1.4264	1.2723	665.6	935	.699	1.3482	1.2897	670.2	877	.705
1200	1.3940-2	-1797.9	7.7866	27.454	472	1.0019	-1.0002	1.4176	1.2727	680.1	956	.700	1.3582	1.2870	683.9	908	.706
1250	1.3382-2	-1727.0	7.8444	27.452	485	1.0008	-1.0001	1.4174	1.2722	694.0	981	.701	1.3678	1.2844	697.3	939	.707
1300	1.2867-2	-1656.1	7.9001	27.452	498	1.0004	-1.0001	1.4201	1.2713	707.5	1009	.702	1.3770	1.2820	710.5	969	.708
1350	1.2390-2	-1585.0	7.9537	27.451	511	1.0003	-1.0000	1.4239	1.2703	720.7	1036	.703	1.3858	1.2797	723.4	1000	.709
1400	1.1948-2	-1513.7	8.0056	27.451	524	1.0002	-1.0000	1.4281	1.2692	733.6	1064	.703	1.3943	1.2775	736.0	1031	.709
1450	1.1536-2	-1442.2	8.0558	27.451	537	1.0001	-1.0000	1.4326	1.2682	746.3	1092	.704	1.4024	1.2755	748.4	1061	.710
1500	1.1151-2	-1370.5	8.1044	27.451	549	1.0001	-1.0000	1.4372	1.2671	758.7	1120	.705	1.4101	1.2735	760.7	1091	.710
1550	1.0791-2	-1298.5	8.1516	27.451	562	1.0001	-1.0000	1.4418	1.2660	770.9	1149	.705	1.4175	1.2717	772.7	1122	.710
1600	1.0454-2	-1226.3	8.1975	27.451	574	1.0001	-1.0000	1.4465	1.2649	782.9	1177	.706	1.4245	1.2700	784.5	1152	.710
1650	1.0137-2	-1153.8	8.2421	27.451	586	1.0001	-1.0000	1.4512	1.2638	794.7	1206	.706	1.4313	1.2684	796.2	1182	.710
1700	9.8392-3	-1081.1	8.2855	27.451	598	1.0001	-1.0000	1.4558	1.2627	806.3	1234	.706	1.4377	1.2669	807.7	1212	.710
1750	9.5581-3	-1008.2	8.3277	27.451	610	1.0001	-1.0000	1.4605	1.2617	817.8	1263	.706	1.4437	1.2655	819.0	1241	.710
1800	9.2925-3	-935.1	8.3689	27.451	622	1.0001	-1.0000	1.4651	1.2607	829.0	1293	.705	1.4495	1.2641	830.2	1271	.710
1850	9.0413-3	-861.7	8.4091	27.450	634	1.0002	-1.0000	1.4698	1.2597	840.1	1322	.705	1.4550	1.2629	841.2	1301	.709
1900	8.8034-3	-788.1	8.4484	27.450	646	1.0002	-1.0000	1.4746	1.2586	851.1	1352	.704	1.4603	1.2617	852.1	1330	.709
1950	8.5776-3	-714.3	8.4868	27.450	657	1.0003	-1.0000	1.4795	1.2576	861.9	1383	.703	1.4653	1.2606	862.9	1359	.708
2000	8.3630-3	-640.2	8.5243	27.450	668	1.0005	-1.0000	1.4848	1.2566	872.5	1415	.702	1.4700	1.2595	873.5	1388	.708
2050	8.1589-3	-565.8	8.5610	27.449	680	1.0007	-1.0000	1.4904	1.2555	882.9	1447	.700	1.4745	1.2585	884.0	1417	.707
2100	7.9645-3	-491.1	8.5970	27.449	691	1.0010	-1.0000	1.4967	1.2543	893.2	1481	.698	1.4788	1.2576	894.4	1446	.707
2150	7.7791-3	-416.1	8.6323	27.448	702	1.0014	-1.0000	1.5039	1.2531	903.4	1517	.696	1.4828	1.2567	904.7	1474	.706
2200	7.6020-3	-340.7	8.6670	27.447	713	1.0020	-1.0001	1.5122	1.2517	913.3	1555	.693	1.4867	1.2559	914.9	1503	.706
2250	7.4327-3	-264.9	8.7011	27.446	724	1.0028	-1.0001	1.5220	1.2501	923.1	1597	.690	1.4903	1.2551	924.9	1531	.705
2300	7.2706-3	-188.5	8.7346	27.444	735	1.0038	-1.0001	1.5339	1.2483	932.6	1642	.686	1.4938	1.2544	934.9	1559	.704
2350	7.1152-3	-111.4	8.7678	27.441	746	1.0052	-1.0002	1.5484	1.2461	942.0	1693	.682	1.4971	1.2537	944.8	1588	.703
2400	6.9661-3	-33.6	8.8006	27.437	756	1.0070	-1.0002	1.5663	1.2437	951.0	1749	.677	1.5003	1.2531	954.6	1616	.702
2450	6.8228-3	45.3	8.8331	27.433	767	1.0093	-1.0003	1.5884	1.2408	959.9	1813	.672	1.5033	1.2525	964.4	1644	.701
2500	6.6849-3	125.4	8.8654	27.427	778	1.0124	-1.0005	1.6158	1.2374	968.4	1886	.666	1.5061	1.2520	974.1	1672	.700
2550	6.5519-3	207.0	8.8977	27.419	788	1.0164	-1.0006	1.6498	1.2335	976.6	1970	.660	1.5088	1.2515	983.7	1701	.699
2600	6.4236-3	290.5	8.9302	27.409	798	1.0215	-1.0008	1.6917	1.2290	984.5	2068	.653	1.5114	1.2511	993.3	1730	.698
2650	6.2994-3	376.3	8.9629	27.396	809	1.0280	-1.0011	1.7430	1.2239	992.1	2182	.646	1.5138	1.2508	1002.9	1758	.696
2700	6.1791-3	464.9	8.9960	27.380	819	1.0361	-1.0014	1.8049	1.2183	999.4	2315	.638	1.5161	1.2505	1012.6	1786	.695
2750	6.0622-3	557.0	9.0298	27.359	829	1.0460	-1.0018	1.8787	1.2123	1006.6	2469	.631	1.5183	1.2502	1022.2	1814	.694
2800	5.9484-3	653.0	9.0644	27.334	839	1.0579	-1.0024	1.9648	1.2061	1013.5	2648	.622	1.5203	1.2501	1031.9	1842	.692
2850	5.8373-3	753.7	9.1000	27.303	849	1.0720	-1.0030	2.0631	1.1999	1020.5	2852	.614	1.5223	1.2501	1041.6	1870	.691
2900	5.7287-3	859.5	9.1368	27.265	858	1.0880	-1.0037	2.1726	1.1939	1027.6	3084	.605	1.5241	1.2501	1051.5	1898	.689
2950	5.6223-3	971.1	9.1750	27.220	868	1.1060	-1.0046	2.2913	1.1883	1034.8	3343	.595	1.5258	1.2503	1061.4	1927	.687
3000	5.5179-3	1088.8	9.2145	27.167	877	1.1255	-1.0056	2.4168	1.1832	1042.3	3628	.585	1.5274	1.2506	1071.6	1955	.686

TABLE 22.1E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.138-5	-3557.2	6.5999	27.451	1.067	1.031	1.853-5	30.418	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	1.939-5	-3532.8	6.7159	27.451	1.537	1.052	1.683-5	30.387	139	1.0000	-1.000	0.980	1.387	289	187	.731	0.980	1.387	187	.731
240	1.734-5	-3475.2	6.9642	27.451	5.487	1.073	1.528-5	30.087	147	1.0000	-1.000	0.996	1.384	303	199	.736	0.996	1.384	199	.736
260	1.346-5	-3170.3	8.1720	27.496	1.089	1.076	1.321-5	28.189	141	1.0000	-1.000	1.086	1.373	324	196	.778	1.086	1.373	196	.779
280	1.250-5	-3148.4	8.2531	27.525	1.099	1.081	1.227-5	28.203	151	1.0000	-1.000	1.089	1.371	336	212	.774	1.089	1.371	212	.775
298	1.174-5	-3128.3	8.3224	27.560	1.108	1.085	1.153-5	28.218	160	1.0001	-1.000	1.094	1.369	347	227	.770	1.092	1.369	226	.773
300	1.167-5	-3126.3	8.3293	27.564	1.109	1.086	1.146-5	28.220	161	1.0001	-1.000	1.094	1.369	348	229	.770	1.093	1.369	228	.772
320	1.094-5	-3104.0	8.4012	27.612	1.121	1.091	1.076-5	28.241	171	1.0004	-1.000	1.100	1.366	359	246	.765	1.096	1.367	242	.772
340	1.030-5	-3081.4	8.4696	27.668	1.136	1.096	1.013-5	28.266	180	1.0011	-1.000	1.110	1.362	369	265	.755	1.100	1.365	257	.771
360	9.723-6	-3058.5	8.5350	27.730	1.155	1.102	9.577-6	28.292	190	1.0025	-1.000	1.125	1.356	379	289	.737	1.105	1.362	272	.770
380	9.209-6	-3035.2	8.5982	27.795	1.184	1.107	9.082-6	28.318	199	1.0052	-1.000	1.150	1.347	388	323	.708	1.110	1.360	288	.767
400	8.745-6	-3011.1	8.6600	27.862	1.227	1.113	8.635-6	28.341	208	1.0099	-1.000	1.189	1.336	396	370	.669	1.115	1.357	304	.763
420	8.323-6	-2986.0	8.7212	27.925	1.289	1.120	8.228-6	28.358	217	1.0176	-1.001	1.247	1.321	403	433	.625	1.121	1.354	320	.760
440	7.936-6	-2959.3	8.7831	27.981	1.377	1.126	7.856-6	28.364	226	1.0293	-1.001	1.330	1.303	410	517	.580	1.127	1.352	336	.756
460	7.578-6	-2930.7	8.8468	28.024	1.494	1.134	7.512-6	28.355	234	1.0460	-1.002	1.441	1.283	416	623	.541	1.134	1.349	353	.752
480	7.244-6	-2899.4	8.9134	28.050	1.642	1.142	7.191-6	28.325	242	1.0679	-1.003	1.580	1.264	422	744	.515	1.142	1.346	371	.746
500	6.930-6	-2864.8	8.9839	28.055	1.817	1.151	6.890-6	28.270	251	1.0943	-1.004	1.742	1.246	428	871	.502	1.151	1.343	391	.738
520	6.633-6	-2826.6	9.0589	28.036	2.013	1.161	6.606-6	28.188	259	1.1233	-1.006	1.916	1.232	435	987	.503	1.160	1.341	413	.728
540	6.352-6	-2784.3	9.1387	27.994	2.216	1.171	6.337-6	28.080	267	1.1518	-1.008	2.087	1.220	442	1080	.516	1.171	1.339	436	.717
560	6.085-6	-2737.9	9.2230	27.934	2.421	1.182	6.082-6	27.949	275	1.1758	-1.009	2.238	1.212	449	1141	.540	1.182	1.336	461	.705
580	5.837-6	-2691.9	9.3037	27.781	2.250	1.193	5.837-6	27.781	283	1.1747	-1.009	2.250	1.211	459	1090	.584	1.193	1.335	485	.695
600	5.612-6	-2648.4	9.3775	27.630	2.070	1.203	5.612-6	27.630	290	1.1397	-1.007	2.070	1.222	470	943	.637	1.203	1.334	507	.688
620	5.411-6	-2610.0	9.4404	27.529	1.762	1.211	5.411-6	27.529	297	1.0822	-1.004	1.762	1.244	483	775	.676	1.211	1.332	527	.683
640	5.233-6	-2577.5	9.4921	27.480	1.513	1.218	5.233-6	27.480	304	1.0355	-1.002	1.513	1.270	496	670	.687	1.218	1.330	544	.682
660	5.071-6	-2548.6	9.5366	27.461	1.400	1.225	5.071-6	27.461	311	1.0129	-1.001	1.400	1.284	507	634	.687	1.225	1.328	559	.682
680	4.920-6	-2521.0	9.5777	27.454	1.364	1.231	4.920-6	27.454	318	1.0045	-1.000	1.364	1.288	515	632	.686	1.231	1.326	573	.683
700	4.779-6	-2493.8	9.6172	27.452	1.358	1.236	4.779-6	27.452	324	1.0016	-1.000	1.358	1.288	523	643	.685	1.236	1.324	587	.684
720	4.646-6	-2466.6	9.6555	27.451	1.361	1.242	4.646-6	27.451	331	1.0006	-1.000	1.361	1.287	530	657	.686	1.242	1.322	600	.685
740	4.521-6	-2439.3	9.6928	27.451	1.367	1.248	4.521-6	27.451	338	1.0002	-1.000	1.367	1.285	537	672	.686	1.248	1.321	614	.686
760	4.402-6	-2411.9	9.7294	27.451	1.372	1.253	4.402-6	27.451	344	1.0001	-1.000	1.372	1.283	544	688	.686	1.253	1.319	627	.687
780	4.289-6	-2384.5	9.7650	27.451	1.377	1.259	4.289-6	27.451	350	1.0000	-1.000	1.377	1.282	550	702	.687	1.259	1.317	641	.688
800	4.182-6	-2356.9	9.8000	27.451	1.381	1.264	4.182-6	27.451	357	1.0000	-1.000	1.381	1.281	557	717	.687	1.264	1.315	654	.689

TABLE 22.2E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO W/	PRAN	CP	GAM	COND MICRO W/	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	CM K		J/G K		CM K	
200	2.138-4	-3557.5	6.0533	27.451	1.035	1.031	1.854-4	30.420	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	1.944-4	-3536.3	6.1543	27.451	1.100	1.052	1.685-4	30.417	140	1.0000	-1.000	0.979	1.388	289	187	.730	0.979	1.388	187	.730
240	1.777-4	-3511.5	6.2618	27.451	1.493	1.073	1.543-4	30.387	150	1.0000	-1.000	0.983	1.386	302	203	.728	0.983	1.386	203	.728
260	1.613-4	-3465.1	6.4463	27.451	3.751	1.093	1.415-4	30.181	159	1.0000	-1.000	0.995	1.383	315	216	.730	0.995	1.383	216	.730
280	1.377-4	-3292.9	7.0798	27.469	1.957	1.217	1.271-4	29.211	160	1.0000	-1.000	1.042	1.376	331	222	.752	1.041	1.376	221	.752
298	1.174-4	-3128.4	7.6559	27.560	1.107	1.085	1.153-4	28.218	160	1.0000	-1.000	1.093	1.369	347	227	.772	1.092	1.369	226	.773
300	1.167-4	-3126.3	7.6628	27.564	1.108	1.086	1.146-4	28.220	161	1.0000	-1.000	1.093	1.369	348	228	.772	1.093	1.369	228	.772
320	1.094-4	-3104.0	7.7346	27.612	1.118	1.091	1.076-4	28.242	171	1.0001	-1.000	1.098	1.367	359	243	.770	1.096	1.367	242	.772
340	1.030-4	-3081.6	7.8027	27.668	1.128	1.096	1.013-4	28.267	180	1.0003	-1.000	1.103	1.364	369	260	.766	1.100	1.365	257	.772
360	9.724-5	-3058.9	7.8675	27.731	1.140	1.101	9.578-5	28.295	190	1.0008	-1.000	1.111	1.360	379	278	.759	1.105	1.362	272	.770
380	9.212-5	-3036.0	7.9295	27.798	1.154	1.107	9.083-5	28.323	199	1.0016	-1.000	1.122	1.356	389	299	.747	1.109	1.360	288	.767
400	8.750-5	-3012.7	7.9891	27.867	1.172	1.113	8.638-5	28.352	208	1.0032	-1.000	1.138	1.350	398	325	.729	1.114	1.357	303	.764
420	8.331-5	-2989.1	8.0468	27.937	1.196	1.119	8.235-5	28.380	217	1.0057	-1.000	1.161	1.342	406	357	.705	1.120	1.354	318	.762
440	7.950-5	-2964.8	8.1032	28.005	1.229	1.125	7.867-5	28.403	225	1.0098	-1.000	1.193	1.333	414	398	.676	1.126	1.351	334	.761
460	7.600-5	-2939.8	8.1587	28.068	1.274	1.132	7.530-5	28.421	234	1.0158	-1.001	1.237	1.322	422	450	.643	1.132	1.349	349	.758
480	7.277-5	-2913.8	8.2141	28.123	1.333	1.139	7.218-5	28.431	242	1.0243	-1.001	1.295	1.309	429	515	.608	1.138	1.346	365	.756
500	6.977-5	-2886.4	8.2700	28.167	1.409	1.146	6.929-5	28.430	250	1.0358	-1.002	1.369	1.295	435	595	.576	1.146	1.343	381	.753
520	6.697-5	-2857.3	8.3270	28.199	1.503	1.154	6.659-5	28.415	258	1.0507	-1.002	1.460	1.280	441	688	.548	1.153	1.340	398	.748
540	6.434-5	-2826.2	8.3858	28.214	1.616	1.162	6.406-5	28.383	266	1.0691	-1.003	1.570	1.265	447	790	.529	1.162	1.337	417	.743
560	6.185-5	-2792.6	8.4469	28.212	1.749	1.171	6.166-5	28.333	274	1.0906	-1.005	1.696	1.252	454	897	.518	1.170	1.335	436	.736
580	5.950-5	-2756.1	8.5109	28.191	1.900	1.180	5.939-5	28.264	282	1.1146	-1.006	1.837	1.239	460	1002	.517	1.180	1.332	457	.728
600	5.726-5	-2716.4	8.5781	28.153	2.072	1.190	5.722-5	28.174	289	1.1400	-1.007	1.989	1.227	466	1099	.524	1.189	1.330	478	.720
620	5.513-5	-2674.5	8.6469	28.047	2.125	1.199	5.513-5	28.047	297	1.1616	-1.009	2.125	1.219	473	1161	.543	1.199	1.328	501	.711
640	5.312-5	-2631.1	8.7158	27.898	2.205	1.209	5.312-5	27.898	304	1.1721	-1.009	2.205	1.214	481	1167	.575	1.209	1.327	523	.703
660	5.124-5	-2586.9	8.7837	27.752	2.192	1.219	5.124-5	27.752	311	1.1649	-1.009	2.192	1.214	490	1109	.615	1.219	1.326	544	.696
680	4.951-5	-2544.3	8.8473	27.627	2.045	1.227	4.951-5	27.627	318	1.1335	-1.007	2.045	1.222	500	990	.656	1.227	1.325	565	.691
700	4.794-5	-2505.8	8.9032	27.538	1.803	1.235	4.794-5	27.538	324	1.0857	-1.005	1.803	1.238	512	855	.684	1.235	1.324	583	.688
720	4.653-5	-2472.0	8.9508	27.489	1.588	1.241	4.653-5	27.489	331	1.0437	-1.002	1.588	1.258	523	759	.693	1.241	1.322	599	.686
740	4.523-5	-2441.6	8.9924	27.467	1.466	1.247	4.523-5	27.467	338	1.0192	-1.001	1.466	1.271	534	716	.691	1.247	1.320	613	.687
760	4.403-5	-2412.9	9.0307	27.457	1.413	1.253	4.403-5	27.457	344	1.0080	-1.000	1.413	1.278	542	705	.689	1.253	1.319	627	.687
780	4.289-5	-2384.9	9.0671	27.453	1.394	1.259	4.289-5	27.453	350	1.0033	-1.000	1.394	1.280	550	710	.688	1.259	1.317	641	.688
800	4.182-5	-2357.1	9.1023	27.452	1.388	1.264	4.182-5	27.452	357	1.0014	-1.000	1.388	1.280	557	720	.688	1.264	1.315	654	.689

TABLE 22.3E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.138-3	-3557.5	5.5077	27.451	1.032	1.031	1.854-3	30.420	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	1.944-3	-3536.6	5.6072	27.451	1.057	1.052	1.685-3	30.419	140	1.0000	-1.000	0.978	1.388	289	187	.730	0.978	1.388	187	.730
240	1.781-3	-3515.0	5.7011	27.451	1.115	1.073	1.544-3	30.416	151	1.0000	-1.000	0.982	1.386	302	203	.727	0.982	1.386	203	.727
260	1.642-3	-3490.9	5.7974	27.451	1.351	1.094	1.425-3	30.396	161	1.0000	-1.000	0.986	1.384	314	219	.725	0.986	1.384	219	.725
280	1.512-3	-3419.5	6.0601	27.451	2.209	1.337	1.319-3	30.299	170	1.0000	-1.000	0.994	1.381	326	233	.726	0.994	1.381	233	.726
298	1.390-3	-3367.1	6.2408	27.453	3.812	1.312	1.228-3	30.034	177	1.0000	-1.000	1.009	1.378	337	244	.731	1.009	1.378	244	.731
300	1.376-3	-3359.8	6.2652	27.454	4.078	1.307	1.218-3	29.989	177	1.0000	-1.000	1.011	1.378	339	244	.732	1.011	1.378	244	.732
320	1.196-3	-3233.0	6.6726	27.498	9.680	1.215	1.110-3	29.137	179	1.0000	-1.000	1.054	1.371	354	250	.752	1.053	1.372	250	.752
340	1.030-3	-3081.6	7.1361	27.668	1.126	1.096	1.013-3	28.267	180	1.0001	-1.000	1.101	1.364	369	258	.770	1.100	1.365	257	.772
360	9.724-4	-3059.0	7.2007	27.731	1.135	1.101	9.578-4	28.295	190	1.0002	-1.000	1.107	1.362	380	274	.767	1.105	1.362	272	.770
380	9.212-4	-3036.2	7.2623	27.799	1.144	1.107	9.084-4	28.325	199	1.0005	-1.000	1.114	1.358	389	291	.761	1.109	1.360	287	.768
400	8.751-4	-3013.3	7.3212	27.869	1.154	1.113	8.639-4	28.356	208	1.0010	-1.000	1.122	1.355	399	310	.753	1.114	1.357	303	.765
420	8.334-4	-2990.1	7.3778	27.941	1.166	1.119	8.237-4	28.387	217	1.0018	-1.000	1.133	1.350	408	330	.743	1.120	1.354	318	.763
440	7.954-4	-2966.6	7.4323	28.013	1.180	1.125	7.870-4	28.416	225	1.0031	-1.000	1.147	1.345	416	354	.731	1.125	1.351	333	.762
460	7.607-4	-2942.9	7.4852	28.082	1.198	1.131	7.536-4	28.444	234	1.0051	-1.000	1.165	1.339	424	381	.714	1.131	1.349	347	.761
480	7.288-4	-2918.7	7.5366	28.149	1.221	1.138	7.228-4	28.468	242	1.0080	-1.000	1.189	1.332	432	414	.694	1.137	1.346	362	.760
500	6.994-4	-2894.0	7.5870	28.210	1.251	1.144	6.943-4	28.488	250	1.0120	-1.001	1.219	1.324	440	454	.672	1.144	1.343	377	.758
520	6.721-4	-2868.6	7.6368	28.264	1.288	1.151	6.680-4	28.502	258	1.0175	-1.001	1.256	1.315	447	502	.646	1.151	1.340	393	.756
540	6.467-4	-2842.4	7.6862	28.311	1.334	1.159	6.434-4	28.509	266	1.0246	-1.001	1.303	1.305	453	558	.621	1.158	1.337	409	.753
560	6.229-4	-2815.2	7.7357	28.349	1.390	1.166	6.204-4	28.507	274	1.0337	-1.002	1.359	1.295	460	623	.597	1.165	1.334	425	.750
580	6.006-4	-2786.7	7.7856	28.375	1.459	1.174	5.987-4	28.495	281	1.0451	-1.002	1.427	1.283	466	697	.576	1.173	1.331	443	.746
600	5.795-4	-2756.7	7.8364	28.390	1.541	1.182	5.783-4	28.472	289	1.0588	-1.003	1.508	1.272	472	779	.559	1.181	1.328	460	.742
620	5.596-4	-2725.0	7.8885	28.392	1.639	1.190	5.589-4	28.436	296	1.0751	-1.004	1.603	1.260	478	867	.548	1.190	1.326	479	.737
640	5.406-4	-2691.0	7.9424	28.382	1.756	1.199	5.405-4	28.386	304	1.0939	-1.005	1.714	1.249	484	960	.542	1.199	1.323	498	.731
660	5.225-4	-2655.5	7.9970	28.299	1.831	1.207	5.225-4	28.299	311	1.1138	-1.006	1.831	1.239	490	1046	.544	1.207	1.322	517	.725
680	5.053-4	-2617.7	8.0535	28.195	1.952	1.216	5.053-4	28.195	318	1.1339	-1.008	1.952	1.229	497	1122	.552	1.216	1.320	537	.720
700	4.888-4	-2577.5	8.1117	28.078	2.067	1.225	4.888-4	28.078	324	1.1522	-1.009	2.067	1.222	503	1180	.568	1.225	1.319	557	.713
720	4.731-4	-2535.2	8.1713	27.952	2.155	1.234	4.731-4	27.952	331	1.1651	-1.010	2.155	1.216	510	1208	.591	1.234	1.318	577	.708
740	4.582-4	-2491.7	8.2309	27.824	2.187	1.242	4.582-4	27.824	338	1.1670	-1.010	2.187	1.214	518	1193	.619	1.242	1.317	597	.702
760	4.443-4	-2448.3	8.2887	27.705	2.130	1.250	4.443-4	27.705	344	1.1523	-1.009	2.130	1.217	527	1126	.651	1.250	1.316	616	.698
780	4.313-4	-2407.1	8.3423	27.606	1.977	1.257	4.313-4	27.606	350	1.1201	-1.007	1.977	1.226	537	1021	.679	1.257	1.315	634	.695
800	4.195-4	-2369.5	8.3898	27.536	1.779	1.263	4.195-4	27.536	357	1.0798	-1.005	1.779	1.239	547	914	.695	1.263	1.314	651	.693

TABLE 22.4E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.133-2	-3557.5	4.9623	27.451	1.031	1.031	1.854-2	30.420	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	1.939-2	-3536.6	5.0615	27.451	1.052	1.052	1.685-2	30.420	140	1.0000	-1.000	0.978	1.388	289	187	.730	0.978	1.388	187	.730
240	1.778-2	-3515.4	5.1541	27.451	1.077	1.073	1.545-2	30.419	151	1.0000	-1.000	0.982	1.386	302	203	.727	0.982	1.386	203	.727
260	1.641-2	-3493.4	5.2418	27.451	1.120	1.095	1.426-2	30.417	161	1.0000	-1.000	0.985	1.384	314	219	.724	0.985	1.384	219	.724
280	1.523-2	-3430.8	5.4721	27.451	1.433	1.347	1.323-2	30.408	171	1.0000	-1.000	0.989	1.382	325	234	.723	0.989	1.382	234	.723
298	1.428-2	-3403.6	5.5660	27.451	1.580	1.346	1.242-2	30.381	180	1.0000	-1.000	0.994	1.380	336	247	.723	0.994	1.380	247	.723
300	1.418-2	-3400.7	5.5759	27.451	1.603	1.346	1.234-2	30.377	181	1.0000	-1.000	0.995	1.380	337	249	.723	0.995	1.380	249	.723
320	1.321-2	-3365.1	5.6904	27.451	2.001	1.342	1.154-2	30.292	190	1.0000	-1.000	1.002	1.377	348	262	.726	1.002	1.377	262	.726
340	1.223-2	-3317.7	5.8339	27.454	2.839	1.328	1.079-2	30.090	197	1.0000	-1.000	1.015	1.374	359	273	.731	1.015	1.374	273	.731
360	1.114-2	-3245.7	6.0393	27.478	4.583	1.289	1.004-2	29.669	202	1.0000	-1.000	1.039	1.370	372	283	.741	1.038	1.370	283	.741
380	9.773-3	-3119.6	6.3793	27.623	8.671	1.193	9.260-3	28.874	204	1.0001	-1.000	1.082	1.363	386	292	.755	1.081	1.363	291	.757
400	8.752-3	-3013.4	6.6544	27.870	1.148	1.113	8.640-3	28.357	208	1.0003	-1.000	1.117	1.356	399	305	.761	1.114	1.357	303	.765
420	8.335-3	-2990.4	6.7106	27.943	1.156	1.119	8.237-3	28.389	217	1.0006	-1.000	1.124	1.353	408	322	.757	1.120	1.354	318	.763
440	7.956-3	-2967.2	6.7645	28.016	1.164	1.125	7.872-3	28.421	225	1.0010	-1.000	1.132	1.349	417	339	.752	1.125	1.351	332	.762
460	7.609-3	-2943.8	6.8165	28.087	1.173	1.131	7.538-3	28.451	234	1.0016	-1.000	1.142	1.345	425	358	.745	1.131	1.348	347	.761
480	7.292-3	-2920.2	6.8666	28.157	1.184	1.137	7.231-3	28.480	242	1.0025	-1.000	1.154	1.341	433	378	.737	1.137	1.345	362	.761
500	6.999-3	-2896.4	6.9152	28.224	1.197	1.144	6.948-3	28.507	250	1.0038	-1.000	1.167	1.336	441	401	.727	1.143	1.342	376	.760
520	6.729-3	-2872.3	6.9625	28.287	1.213	1.151	6.687-3	28.531	258	1.0056	-1.000	1.184	1.331	449	428	.715	1.150	1.339	391	.759
540	6.478-3	-2847.9	7.0086	28.346	1.232	1.157	6.444-3	28.552	266	1.0080	-1.000	1.204	1.325	456	457	.700	1.157	1.336	406	.757
560	6.244-3	-2823.0	7.0538	28.400	1.255	1.164	6.217-3	28.569	274	1.0112	-1.001	1.228	1.319	464	491	.684	1.164	1.333	422	.755
580	6.026-3	-2797.7	7.0983	28.448	1.282	1.172	6.005-3	28.582	281	1.0152	-1.001	1.257	1.312	470	530	.667	1.171	1.331	437	.753
600	5.822-3	-2771.7	7.1423	28.489	1.315	1.179	5.807-3	28.590	289	1.0203	-1.001	1.291	1.304	477	574	.649	1.178	1.328	453	.750
620	5.630-3	-2745.0	7.1861	28.524	1.355	1.186	5.620-3	28.591	296	1.0267	-1.001	1.331	1.297	483	624	.632	1.186	1.325	470	.748
640	5.448-3	-2717.4	7.2298	28.551	1.403	1.194	5.443-3	28.587	303	1.0344	-1.002	1.379	1.288	490	679	.616	1.194	1.322	486	.745
660	5.277-3	-2688.8	7.2739	28.571	1.461	1.202	5.276-3	28.575	311	1.0438	-1.003	1.436	1.279	496	741	.602	1.202	1.320	503	.742
680	5.114-3	-2659.4	7.3178	28.536	1.501	1.210	5.114-3	28.536	318	1.0547	-1.003	1.501	1.270	502	807	.591	1.210	1.317	520	.738
700	4.959-3	-2628.7	7.3623	28.485	1.574	1.218	4.959-3	28.485	324	1.0673	-1.004	1.574	1.261	508	876	.583	1.218	1.315	537	.735
720	4.811-3	-2596.4	7.4078	28.426	1.658	1.225	4.811-3	28.426	331	1.0817	-1.005	1.658	1.253	514	949	.579	1.225	1.314	555	.731
740	4.670-3	-2562.3	7.4545	28.356	1.750	1.233	4.670-3	28.356	338	1.0975	-1.006	1.750	1.244	520	1023	.578	1.233	1.312	573	.727
760	4.534-3	-2526.3	7.5024	28.276	1.848	1.241	4.534-3	28.276	344	1.1144	-1.007	1.848	1.236	526	1095	.581	1.241	1.310	591	.723
780	4.404-3	-2488.4	7.5517	28.186	1.946	1.249	4.404-3	28.186	351	1.1313	-1.008	1.946	1.229	532	1161	.588	1.249	1.309	609	.719
800	4.279-3	-2448.5	7.6021	28.087	2.037	1.257	4.279-3	28.087	357	1.1467	-1.009	2.037	1.223	538	1214	.600	1.257	1.308	628	.715

TABLE 22.5E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 1.700; F/A = 0.084530; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS									GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	1.054-1	-3557.5	4.5810	27.451	1.031	1.031	9.268-2	30.420	129	1.0000	-1.000	0.975	1.389	276	171	.735	0.975	1.389	171	.735
220	9.597-2	-3536.6	4.6802	27.451	1.052	1.052	8.425-2	30.420	140	1.0000	-1.000	0.978	1.388	289	187	.730	0.978	1.388	187	.730
240	8.807-2	-3515.4	4.7727	27.451	1.074	1.073	7.723-2	30.420	151	1.0000	-1.000	0.982	1.386	302	203	.727	0.982	1.386	203	.727
260	8.136-2	-3493.7	4.8596	27.451	1.100	1.095	7.129-2	30.419	161	1.0000	-1.000	0.985	1.384	314	219	.724	0.985	1.384	219	.724
280	7.566-2	-3431.8	5.0871	27.451	1.365	1.348	6.619-2	30.417	171	1.0000	-1.000	0.989	1.382	325	234	.723	0.989	1.382	234	.723
298	7.106-2	-3406.8	5.1737	27.451	1.396	1.349	6.215-2	30.412	180	1.0000	-1.000	0.993	1.380	335	248	.722	0.993	1.380	248	.722
300	7.062-2	-3404.2	5.1823	27.451	1.401	1.349	6.177-2	30.411	181	1.0000	-1.000	0.993	1.380	336	249	.722	0.993	1.380	249	.722
320	6.615-2	-3375.5	5.2750	27.451	1.481	1.352	5.788-2	30.394	190	1.0000	-1.000	0.998	1.378	347	263	.723	0.998	1.378	263	.723
340	6.209-2	-3344.4	5.3690	27.451	1.639	1.354	5.440-2	30.354	199	1.0000	-1.000	1.004	1.375	358	276	.725	1.004	1.375	276	.725
360	5.827-2	-3309.1	5.4699	27.452	1.921	1.353	5.123-2	30.270	208	1.0000	-1.000	1.012	1.372	368	289	.728	1.012	1.372	289	.728
380	5.452-2	-3266.3	5.5855	27.456	2.398	1.344	4.828-2	30.111	215	1.0000	-1.000	1.024	1.369	379	301	.731	1.024	1.369	301	.731
400	5.063-2	-3211.0	5.7271	27.477	3.202	1.323	4.545-2	29.836	221	1.0000	-1.000	1.041	1.366	390	313	.737	1.041	1.366	312	.737
420	4.631-2	-3134.1	5.9145	27.557	4.641	1.276	4.264-2	29.394	226	1.0001	-1.000	1.068	1.360	402	324	.744	1.067	1.361	323	.745
440	4.119-2	-3015.9	6.1889	27.839	7.546	1.180	3.978-2	28.723	228	1.0003	-1.000	1.111	1.353	415	336	.753	1.108	1.354	334	.757
460	3.804-2	-2944.0	6.3501	28.089	1.167	1.131	3.769-2	28.453	234	1.0007	-1.000	1.136	1.347	425	352	.754	1.131	1.348	347	.762
480	3.646-2	-2920.6	6.3999	28.160	1.175	1.137	3.616-2	28.484	242	1.0011	-1.000	1.144	1.343	434	369	.750	1.137	1.345	361	.761
500	3.500-2	-2897.0	6.4481	28.228	1.183	1.144	3.475-2	28.512	250	1.0017	-1.000	1.154	1.339	442	387	.745	1.143	1.342	376	.761
520	3.365-2	-2873.3	6.4947	28.294	1.193	1.150	3.344-2	28.539	258	1.0025	-1.000	1.165	1.335	450	407	.738	1.150	1.339	391	.759
540	3.240-2	-2849.3	6.5399	28.355	1.205	1.157	3.223-2	28.564	266	1.0036	-1.000	1.178	1.331	457	429	.730	1.156	1.336	406	.758
560	3.124-2	-2825.1	6.5840	28.414	1.218	1.164	3.110-2	28.586	274	1.0050	-1.000	1.193	1.326	465	453	.720	1.163	1.333	421	.756
580	3.016-2	-2800.6	6.6270	28.468	1.234	1.171	3.005-2	28.606	281	1.0069	-1.000	1.210	1.321	472	479	.710	1.170	1.330	436	.755
600	2.914-2	-2775.7	6.6691	28.517	1.252	1.178	2.907-2	28.622	289	1.0092	-1.001	1.229	1.316	479	508	.698	1.178	1.327	452	.753
620	2.819-2	-2750.5	6.7105	28.562	1.274	1.185	2.814-2	28.635	296	1.0122	-1.001	1.252	1.310	486	541	.686	1.185	1.325	467	.751
640	2.730-2	-2724.7	6.7513	28.602	1.299	1.193	2.727-2	28.645	303	1.0159	-1.001	1.279	1.304	492	577	.673	1.192	1.322	483	.749
660	2.646-2	-2698.5	6.7917	28.637	1.330	1.200	2.645-2	28.650	310	1.0205	-1.001	1.309	1.298	499	616	.660	1.200	1.319	499	.746
680	2.566-2	-2671.7	6.8316	28.639	1.345	1.208	2.566-2	28.639	318	1.0259	-1.002	1.345	1.291	505	659	.648	1.208	1.317	515	.744
700	2.491-2	-2644.4	6.8712	28.615	1.386	1.215	2.491-2	28.615	324	1.0324	-1.002	1.386	1.285	511	706	.636	1.215	1.314	531	.742
720	2.419-2	-2616.3	6.9109	28.586	1.433	1.223	2.419-2	28.586	331	1.0401	-1.002	1.433	1.277	517	758	.626	1.223	1.312	547	.740
740	2.351-2	-2587.1	6.9508	28.551	1.486	1.230	2.351-2	28.551	338	1.0491	-1.003	1.486	1.270	523	813	.618	1.230	1.310	564	.737
760	2.286-2	-2556.8	6.9913	28.510	1.547	1.238	2.286-2	28.510	345	1.0594	-1.004	1.547	1.263	529	872	.611	1.238	1.308	580	.735
780	2.223-2	-2525.2	7.0323	28.462	1.614	1.245	2.223-2	28.462	351	1.0712	-1.004	1.614	1.255	535	934	.607	1.245	1.306	597	.732
800	2.164-2	-2492.2	7.0741	28.406	1.688	1.253	2.164-2	28.406	357	1.0842	-1.005	1.688	1.248	541	998	.605	1.253	1.305	614	.729

TABLE 23A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.016415; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.4546;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03306; H2O= .07802; N2= .73271; O2= .14742; AR= .00879

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7338-3	8.6692-2	-1222.4	7.9892	7.3164	6.6436	5.9707	5.5005	1.0411	1.3902	285.0	124	169	.7624	200
210	1.6513-3	8.2563-2	-1212.0	8.0400	7.3672	6.6943	6.0215	5.5513	1.0408	1.3903	292.1	129	177	.7592	210
220	1.5762-3	7.8811-2	-1201.6	8.0884	7.4156	6.7428	6.0699	5.5997	1.0407	1.3904	299.0	135	186	.7561	220
230	1.5077-3	7.5384-2	-1191.2	8.1347	7.4618	6.7890	6.1162	5.6459	1.0407	1.3904	305.7	140	194	.7533	230
240	1.4449-3	7.2243-2	-1180.8	8.1789	7.5061	6.8333	6.1605	5.6902	1.0408	1.3903	312.2	146	202	.7507	240
250	1.3871-3	6.9353-2	-1170.4	8.2214	7.5486	6.8758	6.2030	5.7327	1.0411	1.3902	318.7	151	210	.7485	250
260	1.3337-3	6.6686-2	-1160.0	8.2623	7.5895	6.9166	6.2438	5.7736	1.0415	1.3900	325.0	156	218	.7466	260
270	1.2843-3	6.4216-2	-1149.6	8.3016	7.6288	6.9560	6.2831	5.8129	1.0419	1.3897	331.1	161	226	.7449	270
280	1.2385-3	6.1923-2	-1139.2	8.3395	7.6667	6.9939	6.3211	5.8508	1.0426	1.3894	337.2	166	233	.7436	280
290	1.1957-3	5.9787-2	-1128.7	8.3761	7.7033	7.0305	6.3576	5.8874	1.0433	1.3890	343.1	171	241	.7425	290
298	1.1631-3	5.8153-2	-1120.2	8.4050	7.7322	7.0594	6.3866	5.9163	1.0439	1.3887	347.8	175	247	.7419	298
300	1.1559-3	5.7794-2	-1118.3	8.4115	7.7387	7.0658	6.3930	5.9228	1.0441	1.3886	348.9	176	248	.7418	300
310	1.1186-3	5.5930-2	-1107.8	8.4457	7.7729	7.1001	6.4273	5.9570	1.0450	1.3881	354.6	181	255	.7415	310
320	1.0836-3	5.4182-2	-1097.4	8.4789	7.8061	7.1333	6.4605	5.9902	1.0460	1.3876	360.2	186	262	.7415	320
330	1.0508-3	5.2540-2	-1086.9	8.5111	7.8383	7.1655	6.4927	6.0224	1.0471	1.3870	365.7	190	269	.7415	330
340	1.0199-3	5.0995-2	-1076.4	8.5424	7.8696	7.1968	6.5240	6.0537	1.0484	1.3864	371.1	195	276	.7415	340
350	9.9076-4	4.9538-2	-1066.0	8.5728	7.9000	7.2272	6.5544	6.0841	1.0497	1.3858	376.5	200	282	.7416	350
360	9.6324-4	4.8162-2	-1055.5	8.6024	7.9296	7.2568	6.5840	6.1137	1.0510	1.3851	381.7	204	289	.7411	360
370	9.3721-4	4.6860-2	-1044.9	8.6312	7.9584	7.2856	6.6128	6.1425	1.0525	1.3843	386.9	209	296	.7407	370
380	9.1254-4	4.5627-2	-1034.4	8.6593	7.9865	7.3137	6.6409	6.1706	1.0541	1.3835	391.9	213	303	.7401	380
390	8.8914-4	4.4457-2	-1023.9	8.6867	8.0139	7.3411	6.6683	6.1980	1.0557	1.3827	397.0	217	310	.7396	390
400	8.6692-4	4.3346-2	-1013.3	8.7135	8.0406	7.3678	6.6950	6.2247	1.0574	1.3819	401.9	222	317	.7390	400
410	8.4577-4	4.2289-2	-1002.7	8.7396	8.0668	7.3940	6.7211	6.2509	1.0592	1.3810	406.7	226	324	.7387	410
420	8.2563-4	4.1282-2	-992.1	8.7651	8.0923	7.4195	6.7467	6.2764	1.0610	1.3801	411.5	230	330	.7384	420
430	8.0643-4	4.0322-2	-981.5	8.7901	8.1173	7.4445	6.7717	6.3014	1.0629	1.3791	416.3	234	337	.7382	430
440	7.8811-4	3.9405-2	-970.8	8.8146	8.1418	7.4690	6.7961	6.3259	1.0649	1.3782	420.9	238	344	.7380	440
450	7.7059-4	3.8530-2	-960.2	8.8385	8.1657	7.4929	6.8201	6.3498	1.0669	1.3772	425.5	242	350	.7378	450
460	7.5384-4	3.7692-2	-949.5	8.8620	8.1892	7.5164	6.8436	6.3733	1.0690	1.3762	430.1	246	357	.7377	460
470	7.3780-4	3.6890-2	-938.8	8.8850	8.2122	7.5394	6.8666	6.3963	1.0711	1.3751	434.6	250	363	.7377	470
480	7.2243-4	3.6122-2	-928.1	8.9076	8.2348	7.5620	6.8891	6.4189	1.0733	1.3741	439.0	254	370	.7377	480
490	7.0769-4	3.5384-2	-917.3	8.9297	8.2569	7.5841	6.9113	6.4410	1.0756	1.3730	443.4	258	376	.7377	490
500	6.9353-4	3.4677-2	-906.6	8.9515	8.2787	7.6059	6.9331	6.4628	1.0778	1.3719	447.7	262	383	.7377	500
510	6.7993-4	3.3997-2	-895.8	8.9729	8.3000	7.6272	6.9544	6.4841	1.0802	1.3708	452.0	266	389	.7375	510
520	6.6686-4	3.3343-2	-885.0	8.9939	8.3210	7.6482	6.9754	6.5051	1.0825	1.3697	456.2	269	396	.7374	520
530	6.5428-4	3.2714-2	-874.1	9.0145	8.3417	7.6689	6.9961	6.5258	1.0849	1.3686	460.4	273	402	.7373	530
540	6.4216-4	3.2108-2	-863.3	9.0348	8.3620	7.6892	7.0164	6.5461	1.0874	1.3675	464.5	277	409	.7371	540
550	6.3048-4	3.1524-2	-852.4	9.0548	8.3820	7.7092	7.0363	6.5661	1.0899	1.3663	468.6	281	415	.7369	550
560	6.1923-4	3.0961-2	-841.5	9.0744	8.4016	7.7288	7.0560	6.5857	1.0924	1.3652	472.6	284	422	.7368	560
570	6.0836-4	3.0418-2	-830.5	9.0938	8.4210	7.7482	7.0754	6.6051	1.0949	1.3640	476.6	288	428	.7366	570
580	5.9787-4	2.9894-2	-819.6	9.1129	8.4400	7.7672	7.0944	6.6241	1.0975	1.3629	480.6	292	435	.7364	580
590	5.8774-4	2.9387-2	-808.6	9.1316	8.4588	7.7860	7.1132	6.6429	1.1001	1.3617	484.5	295	441	.7361	590

TABLE 23A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.016415; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.4546;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03306; H2O= .07802; N2= .73271; O2= .14742; AR= .00879

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
600	5.7794-4	2.8897-2	-797.6	9.1502	8.4773	7.8045	7.1317	6.6614	1.1027	1.3605	488.4	299	448	.7359	600
610	5.6847-4	2.8423-2	-786.5	9.1684	8.4956	7.8228	7.1500	6.6797	1.1053	1.3594	492.2	302	454	.7356	610
620	5.5930-4	2.7965-2	-775.5	9.1864	8.5136	7.8408	7.1680	6.6977	1.1079	1.3582	496.0	306	461	.7353	620
630	5.5042-4	2.7521-2	-764.4	9.2041	8.5313	7.8585	7.1857	6.7154	1.1106	1.3570	499.8	309	468	.7350	630
640	5.4182-4	2.7091-2	-753.3	9.2217	8.5488	7.8760	7.2032	6.7329	1.1133	1.3559	503.5	313	474	.7347	640
650	5.3349-4	2.6674-2	-742.1	9.2389	8.5661	7.8933	7.2205	6.7502	1.1160	1.3547	507.2	316	481	.7344	650
660	5.2540-4	2.6270-2	-730.9	9.2560	8.5832	7.9104	7.2376	6.7673	1.1187	1.3536	510.9	320	487	.7341	660
670	5.1756-4	2.5878-2	-719.7	9.2728	8.6000	7.9272	7.2544	6.7841	1.1214	1.3524	514.6	323	494	.7338	670
680	5.0995-4	2.5498-2	-708.5	9.2895	8.6167	7.9438	7.2710	6.8008	1.1241	1.3512	518.2	327	501	.7335	680
690	5.0256-4	2.5128-2	-697.3	9.3059	8.6331	7.9603	7.2875	6.8172	1.1268	1.3501	521.7	330	507	.7332	690
700	4.9538-4	2.4769-2	-686.0	9.3221	8.6493	7.9765	7.3037	6.8334	1.1295	1.3490	525.3	333	514	.7329	700
710	4.8840-4	2.4420-2	-674.7	9.3382	8.6654	7.9925	7.3197	6.8495	1.1322	1.3478	528.8	337	521	.7326	710
720	4.8162-4	2.4081-2	-663.3	9.3540	8.6812	8.0084	7.3356	6.8653	1.1350	1.3467	532.3	340	527	.7323	720
730	4.7502-4	2.3751-2	-652.0	9.3697	8.6969	8.0241	7.3513	6.8810	1.1377	1.3456	535.7	343	534	.7320	730
740	4.6860-4	2.3430-2	-640.6	9.3852	8.7124	8.0396	7.3668	6.8965	1.1404	1.3445	539.2	347	540	.7317	740
750	4.6236-4	2.3118-2	-629.2	9.4005	8.7277	8.0549	7.3821	6.9118	1.1431	1.3434	542.6	350	547	.7314	750
760	4.5627-4	2.2814-2	-617.7	9.4157	8.7429	8.0701	7.3972	6.9270	1.1458	1.3423	546.0	353	554	.7311	760
770	4.5035-4	2.2517-2	-606.2	9.4307	8.7579	8.0851	7.4122	6.9420	1.1485	1.3412	549.3	357	560	.7308	770
780	4.4457-4	2.2229-2	-594.7	9.4455	8.7727	8.0999	7.4271	6.9568	1.1512	1.3402	552.7	360	567	.7305	780
790	4.3894-4	2.1947-2	-583.2	9.4602	8.7874	8.1146	7.4418	6.9715	1.1539	1.3391	556.0	363	573	.7303	790
800	4.3346-4	2.1673-2	-571.7	9.4747	8.8019	8.1291	7.4563	6.9860	1.1565	1.3381	559.3	366	580	.7300	800
810	4.2811-4	2.1405-2	-560.1	9.4891	8.8163	8.1435	7.4707	7.0004	1.1592	1.3370	562.5	369	587	.7298	810
820	4.2289-4	2.1144-2	-548.5	9.5034	8.8305	8.1577	7.4849	7.0146	1.1618	1.3360	565.8	372	593	.7295	820
830	4.1779-4	2.0890-2	-536.9	9.5175	8.8446	8.1718	7.4990	7.0287	1.1644	1.3350	569.0	376	600	.7293	830
840	4.1282-4	2.0641-2	-525.2	9.5314	8.8586	8.1858	7.5130	7.0427	1.1670	1.3340	572.2	379	606	.7291	840
850	4.0796-4	2.0398-2	-513.5	9.5452	8.8724	8.1996	7.5268	7.0565	1.1696	1.3330	575.4	382	613	.7289	850
860	4.0322-4	2.0161-2	-501.8	9.5589	8.8861	8.2133	7.5405	7.0702	1.1721	1.3321	578.6	385	619	.7287	860
870	3.9858-4	1.9929-2	-490.1	9.5725	8.8997	8.2269	7.5541	7.0838	1.1747	1.3311	581.7	388	625	.7285	870
880	3.9405-4	1.9703-2	-478.3	9.5859	8.9131	8.2403	7.5675	7.0972	1.1772	1.3302	584.8	391	632	.7283	880
890	3.8963-4	1.9481-2	-466.5	9.5993	8.9264	8.2536	7.5808	7.1105	1.1797	1.3292	587.9	394	638	.7281	890
900	3.8530-4	1.9265-2	-454.7	9.6125	8.9396	8.2668	7.5940	7.1237	1.1821	1.3283	591.0	397	645	.7280	900
910	3.8106-4	1.9053-2	-442.9	9.6255	8.9527	8.2799	7.6071	7.1368	1.1846	1.3274	594.1	400	651	.7278	910
920	3.7692-4	1.8846-2	-431.0	9.6385	8.9657	8.2929	7.6200	7.1498	1.1870	1.3266	597.2	403	657	.7276	920
930	3.7287-4	1.8643-2	-419.1	9.6513	8.9785	8.3057	7.6329	7.1626	1.1894	1.3257	600.2	406	664	.7274	930
940	3.6890-4	1.8445-2	-407.2	9.6641	8.9913	8.3184	7.6456	7.1753	1.1918	1.3248	603.2	409	670	.7273	940
950	3.6502-4	1.8251-2	-395.3	9.6767	9.0039	8.3311	7.6582	7.1880	1.1941	1.3240	606.2	412	676	.7271	950
960	3.6121-4	1.8061-2	-383.4	9.6892	9.0164	8.3436	7.6708	7.2005	1.1964	1.3232	609.2	415	683	.7270	960
970	3.5749-4	1.7875-2	-371.4	9.7016	9.0288	8.3560	7.6832	7.2129	1.1987	1.3223	612.2	418	689	.7268	970
980	3.5384-4	1.7692-2	-359.4	9.7139	9.0411	8.3683	7.6955	7.2252	1.2009	1.3216	615.2	421	695	.7267	980
990	3.5027-4	1.7513-2	-347.4	9.7261	9.0533	8.3805	7.7077	7.2374	1.2031	1.3208	618.1	424	701	.7265	990

TABLE 23A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.016415; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.4546;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03306; H2O= .07802; N2= .73271; O2= .14742; AR= .00879

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4677-4	1.7338-2	-335.3	9.7382	9.0654	8.3926	7.7198	7.2495	1.2053	1.3200	621.1	426	708	.7264	1000
1050	3.3025-4	1.6513-2	-274.8	9.7973	9.1245	8.4517	7.7788	7.3086	1.2156	1.3165	635.5	441	738	.7260	1050
1100	3.1524-4	1.5762-2	-213.8	9.8541	9.1812	8.5084	7.8356	7.3653	1.2253	1.3131	649.7	454	767	.7257	1100
1150	3.0154-4	1.5077-2	-152.3	9.9087	9.2359	8.5631	7.8903	7.4200	1.2347	1.3100	663.5	468	797	.7255	1150
1200	2.8897-4	1.4449-2	-90.3	9.9615	9.2887	8.6158	7.9430	7.4728	1.2436	1.3071	677.0	481	825	.7254	1200
1250	2.7741-4	1.3871-2	-27.9	10.0124	9.3396	8.6668	7.9940	7.5237	1.2521	1.3044	690.2	495	854	.7252	1250
1300	2.6674-4	1.3337-2	34.9	10.0617	9.3889	8.7160	8.0432	7.5730	1.2602	1.3019	703.2	507	882	.7251	1300
1350	2.5686-4	1.2843-2	98.1	10.1094	9.4366	8.7638	8.0909	7.6207	1.2679	1.2995	716.0	520	910	.7250	1350
1400	2.4769-4	1.2385-2	161.7	10.1556	9.4828	8.8100	8.1372	7.6669	1.2752	1.2972	728.5	533	937	.7248	1400
1450	2.3915-4	1.1957-2	225.6	10.2005	9.5277	8.8549	8.1821	7.7118	1.2822	1.2951	740.8	545	964	.7246	1450
1500	2.3118-4	1.1559-2	289.9	10.2441	9.5713	8.8984	8.2256	7.7554	1.2889	1.2932	752.9	557	991	.7244	1500
1550	2.2372-4	1.1186-2	354.5	10.2864	9.6136	8.9408	8.2680	7.7977	1.2952	1.2913	764.8	569	1018	.7240	1550
1600	2.1673-4	1.0836-2	419.4	10.3277	9.6548	8.9820	8.3092	7.8389	1.3013	1.2896	776.5	581	1045	.7235	1600
1650	2.1016-4	1.0508-2	484.6	10.3678	9.6950	9.0222	8.3493	7.8791	1.3070	1.2879	788.0	593	1072	.7230	1650
1700	2.0398-4	1.0199-2	550.1	10.4069	9.7341	9.0613	8.3884	7.9182	1.3125	1.2864	799.4	604	1098	.7225	1700
1750	1.9815-4	9.9076-3	615.8	10.4450	9.7722	9.0994	8.4266	7.9563	1.3176	1.2849	810.6	616	1124	.7220	1750
1800	1.9265-4	9.6324-3	681.9	10.4822	9.8094	9.1366	8.4638	7.9935	1.3226	1.2836	821.7	627	1150	.7214	1800
1850	1.8744-4	9.3721-3	748.1	10.5185	9.8457	9.1729	8.5001	8.0298	1.3273	1.2823	832.6	638	1175	.7209	1850
1900	1.8251-4	9.1254-3	814.6	10.5540	9.8811	9.2083	8.5355	8.0652	1.3317	1.2811	843.3	649	1201	.7204	1900
1950	1.7783-4	8.8915-3	881.3	10.5886	9.9158	9.2430	8.5702	8.0999	1.3360	1.2799	854.0	660	1226	.7199	1950
2000	1.7338-4	8.6692-3	948.2	10.6225	9.9497	9.2769	8.6040	8.1338	1.3400	1.2789	864.5	671	1250	.7194	2000
2050	1.6915-4	8.4577-3	1015.3	10.6556	9.9828	9.3100	8.6372	8.1669	1.3438	1.2779	874.9	682	1275	.7191	2050
2100	1.6513-4	8.2563-3	1082.6	10.6880	10.0152	9.3424	8.6696	8.1993	1.3475	1.2769	885.2	693	1299	.7189	2100
2150	1.6129-4	8.0643-3	1150.0	10.7198	10.0470	9.3742	8.7013	8.2311	1.3509	1.2760	895.3	703	1322	.7186	2150
2200	1.5762-4	7.8811-3	1217.6	10.7509	10.0781	9.4053	8.7324	8.2622	1.3542	1.2751	905.4	714	1346	.7183	2200
2250	1.5412-4	7.7059-3	1285.4	10.7814	10.1085	9.4357	8.7629	8.2926	1.3574	1.2743	915.3	724	1369	.7181	2250
2300	1.5077-4	7.5384-3	1353.4	10.8112	10.1384	9.4656	8.7928	8.3225	1.3604	1.2736	925.1	735	1392	.7178	2300
2350	1.4756-4	7.3780-3	1421.5	10.8405	10.1677	9.4949	8.8221	8.3518	1.3632	1.2728	934.9	745	1415	.7176	2350
2400	1.4449-4	7.2243-3	1489.7	10.8692	10.1964	9.5236	8.8508	8.3805	1.3659	1.2721	944.5	755	1438	.7174	2400
2450	1.4154-4	7.0769-3	1558.1	10.8974	10.2246	9.5518	8.8790	8.4087	1.3685	1.2715	954.1	765	1460	.7172	2450
2500	1.3871-4	6.9353-3	1626.5	10.9251	10.2523	9.5795	8.9067	8.4364	1.3710	1.2708	963.5	775	1482	.7169	2500
2550	1.3599-4	6.7993-3	1695.2	10.9523	10.2795	9.6066	8.9338	8.4636	1.3734	1.2703	972.9	785	1505	.7165	2550
2600	1.3337-4	6.6686-3	1763.9	10.9790	10.3062	9.6333	8.9605	8.4902	1.3757	1.2697	982.1	795	1527	.7161	2600
2650	1.3086-4	6.5428-3	1832.7	11.0052	10.3324	9.6596	8.9867	8.5165	1.3779	1.2691	991.3	805	1550	.7156	2650
2700	1.2843-4	6.4216-3	1901.7	11.0310	10.3582	9.6853	9.0125	8.5422	1.3800	1.2686	1000.4	815	1572	.7152	2700
2750	1.2610-4	6.3048-3	1970.7	11.0563	10.3835	9.7107	9.0379	8.5676	1.3820	1.2681	1009.4	824	1594	.7148	2750
2800	1.2385-4	6.1923-3	2039.9	11.0812	10.4084	9.7356	9.0628	8.5925	1.3840	1.2676	1018.4	834	1615	.7144	2800
2850	1.2167-4	6.0836-3	2109.1	11.1057	10.4329	9.7601	9.0873	8.6170	1.3859	1.2672	1027.3	843	1637	.7139	2850
2900	1.1957-4	5.9787-3	2178.5	11.1299	10.4570	9.7842	9.1114	8.6411	1.3877	1.2667	1036.0	853	1659	.7135	2900
2950	1.1755-4	5.8774-3	2247.9	11.1536	10.4808	9.8080	9.1352	8.6649	1.3895	1.2663	1044.8	862	1680	.7131	2950
3000	1.1559-4	5.7794-3	2317.4	11.1770	10.5042	9.8313	9.1585	8.6882	1.3913	1.2659	1053.4	872	1701	.7127	3000

TABLE 23.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016415; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8530-6	-454.7	9.6125	28.455	397	1.0000	-1.0000	1.1825	1.3282	591.0	645	.728	1.1821	1.3283	591.0	645	.728
950	3.6502-6	-395.3	9.6767	28.455	412	1.0000	-1.0000	1.1947	1.3238	606.2	677	.727	1.1941	1.3240	606.2	676	.727
1000	3.4677-6	-335.2	9.7383	28.455	426	1.0000	-1.0000	1.2063	1.3196	621.0	708	.726	1.2053	1.3200	621.1	708	.726
1050	3.3025-6	-274.6	9.7974	28.455	441	1.0000	-1.0000	1.2171	1.3159	635.4	739	.726	1.2156	1.3165	635.5	738	.726
1100	3.1524-6	-213.5	9.8543	28.455	454	1.0000	-1.0000	1.2277	1.3124	649.5	769	.726	1.2253	1.3131	649.7	767	.726
1150	3.0154-6	-151.9	9.9091	28.455	468	1.0000	-1.0000	1.2381	1.3089	663.2	799	.726	1.2347	1.3100	663.5	797	.726
1200	2.8897-6	-89.7	9.9620	28.454	481	1.0000	-1.0000	1.2484	1.3056	676.6	829	.725	1.2436	1.3071	677.0	825	.725
1250	2.7741-6	-27.0	10.0132	28.454	495	1.0001	-1.0000	1.2588	1.3024	689.7	858	.725	1.2521	1.3044	690.2	854	.725
1300	2.6674-6	36.2	10.0628	28.454	507	1.0001	-1.0000	1.2693	1.2991	702.5	888	.725	1.2602	1.3019	703.2	882	.725
1350	2.5686-6	99.9	10.1109	28.454	520	1.0002	-1.0000	1.2802	1.2959	715.0	919	.725	1.2679	1.2995	716.0	910	.725
1400	2.4768-6	164.2	10.1576	28.454	533	1.0003	-1.0000	1.2918	1.2926	727.2	950	.724	1.2752	1.2973	728.5	937	.725
1450	2.3914-6	229.1	10.2032	28.453	545	1.0006	-1.0000	1.3044	1.2891	739.1	983	.723	1.2822	1.2952	740.8	964	.725
1500	2.3116-6	294.7	10.2476	28.453	557	1.0009	-1.0000	1.3184	1.2854	750.6	1017	.722	1.2889	1.2932	752.9	991	.724
1550	2.2370-6	361.0	10.2911	28.452	569	1.0015	-1.0000	1.3346	1.2813	761.8	1055	.720	1.2952	1.2914	764.8	1018	.724
1600	2.1669-6	428.2	10.3338	28.450	581	1.0023	-1.0001	1.3538	1.2768	772.7	1096	.718	1.3013	1.2896	776.5	1045	.723
1650	2.1011-6	496.4	10.3758	28.448	593	1.0035	-1.0001	1.3773	1.2716	783.1	1144	.714	1.3070	1.2880	788.1	1072	.723
1700	2.0390-6	566.0	10.4173	28.444	604	1.0053	-1.0001	1.4067	1.2656	793.1	1201	.708	1.3125	1.2865	799.6	1098	.722
1750	1.9804-6	637.2	10.4586	28.438	616	1.0080	-1.0002	1.4442	1.2587	802.5	1271	.700	1.3176	1.2852	810.9	1124	.722
1800	1.9249-6	710.6	10.5000	28.431	627	1.0119	-1.0003	1.4926	1.2505	811.3	1359	.689	1.3226	1.2839	822.1	1150	.721
1850	1.8721-6	786.7	10.5417	28.419	638	1.0174	-1.0005	1.5555	1.2410	819.6	1474	.673	1.3273	1.2828	833.2	1176	.721
1900	1.8218-6	866.5	10.5842	28.403	649	1.0252	-1.0007	1.6376	1.2302	827.2	1627	.654	1.3317	1.2817	844.3	1201	.720
1950	1.7737-6	950.9	10.6281	28.381	660	1.0359	-1.0011	1.7443	1.2183	834.2	1831	.629	1.3359	1.2809	855.4	1227	.719
2000	1.7275-6	1041.4	10.6739	28.350	671	1.0506	-1.0016	1.8823	1.2054	840.9	2105	.600	1.3399	1.2802	866.5	1252	.718
2050	1.6828-6	1139.8	10.7225	28.308	682	1.0703	-1.0022	2.0587	1.1922	847.2	2471	.568	1.3437	1.2797	877.8	1277	.717
2100	1.6395-6	1248.1	10.7746	28.252	692	1.0962	-1.0032	2.2816	1.1790	853.6	2954	.535	1.3474	1.2795	889.2	1303	.716
2150	1.5972-6	1368.8	10.8315	28.178	702	1.1297	-1.0044	2.5588	1.1665	860.3	3582	.502	1.3508	1.2795	901.0	1328	.714
2200	1.5555-6	1505.0	10.8940	28.081	712	1.1720	-1.0060	2.8972	1.1552	867.5	4382	.471	1.3541	1.2799	913.1	1355	.712
2250	1.5142-6	1659.7	10.9636	27.956	722	1.2242	-1.0081	3.3024	1.1453	875.4	5375	.444	1.3573	1.2806	925.7	1382	.709
2300	1.4730-6	1836.4	11.0412	27.800	732	1.2871	-1.0106	3.7771	1.1370	884.4	6569	.421	1.3603	1.2818	939.0	1411	.706
2350	1.4317-6	2038.6	11.1281	27.608	741	1.3610	-1.0138	4.3211	1.1303	894.4	7953	.403	1.3633	1.2835	953.1	1441	.701
2400	1.3901-6	2269.6	11.2254	27.375	751	1.4454	-1.0175	4.9294	1.1252	905.6	9488	.390	1.3663	1.2858	968.1	1474	.696
2450	1.3480-6	2532.4	11.3338	27.099	760	1.5389	-1.0217	5.5911	1.1214	918.1	11103	.383	1.3694	1.2887	984.2	1511	.689
2500	1.3054-6	2829.2	11.4537	26.779	769	1.6387	-1.0265	6.2867	1.1188	931.9	12697	.381	1.3725	1.2923	1001.6	1550	.681
2550	1.2624-6	3161.1	11.5851	26.416	778	1.7400	-1.0315	6.9853	1.1173	947.0	14147	.384	1.3758	1.2966	1020.1	1594	.671
2600	1.2194-6	3527.1	11.7272	26.015	787	1.8362	-1.0364	7.6430	1.1167	963.3	15317	.392	1.3792	1.3016	1040.0	1642	.661
2650	1.1765-6	3923.8	11.8783	25.583	795	1.9190	-1.0410	8.2049	1.1171	980.9	16092	.406	1.3828	1.3073	1061.1	1693	.650
2700	1.1343-6	4345.0	12.0358	25.132	804	1.9801	-1.0448	8.6128	1.1183	999.5	16392	.423	1.3864	1.3134	1083.1	1746	.639
2750	1.0935-6	4781.7	12.1960	24.675	813	2.0123	-1.0473	8.8176	1.1204	1018.9	16200	.443	1.3901	1.3199	1105.9	1800	.628
2800	1.0545-6	5222.9	12.3550	24.228	823	2.0121	-1.0483	8.7926	1.1232	1038.9	15561	.465	1.3938	1.3266	1129.0	1853	.619
2850	1.0178-6	5657.2	12.5088	23.804	832	1.9803	-1.0478	8.5407	1.1269	1059.2	14570	.488	1.3973	1.3333	1152.1	1905	.610
2900	9.8386-7	6073.7	12.6537	23.412	842	1.9215	-1.0458	8.0921	1.1315	1079.5	13346	.510	1.4007	1.3397	1174.6	1954	.603
2950	9.5269-7	6463.9	12.7871	23.061	851	1.8425	-1.0427	7.4949	1.1371	1099.7	12003	.532	1.4038	1.3456	1196.3	2000	.598
3000	9.2433-7	6821.7	12.9073	22.754	861	1.7509	-1.0388	6.8052	1.1439	1119.8	10641	.551	1.4066	1.3509	1216.9	2043	.593

TABLE 23.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016415; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8530-5	-454.7	8.9397	28.455	397	1.0000	-1.0000	1.1825	1.3282	591.0	645	.728	1.1821	1.3283	591.0	645	.728
950	3.6502-5	-395.3	9.0039	28.455	412	1.0000	-1.0000	1.1947	1.3238	606.2	677	.727	1.1941	1.3240	606.2	676	.727
1000	3.4677-5	-335.2	9.0655	28.455	426	1.0000	-1.0000	1.2063	1.3197	621.0	708	.726	1.2053	1.3200	621.1	708	.726
1050	3.3025-5	-274.6	9.1246	28.455	441	1.0000	-1.0000	1.2171	1.3159	635.4	739	.726	1.2156	1.3165	635.5	738	.726
1100	3.1524-5	-213.5	9.1815	28.455	454	1.0000	-1.0000	1.2276	1.3124	649.5	769	.726	1.2253	1.3131	649.7	767	.726
1150	3.0154-5	-151.9	9.2363	28.455	468	1.0000	-1.0000	1.2379	1.3090	663.2	799	.726	1.2347	1.3100	663.5	797	.726
1200	2.8897-5	-89.7	9.2892	28.455	481	1.0000	-1.0000	1.2481	1.3057	676.6	828	.725	1.2436	1.3071	677.0	825	.725
1250	2.7741-5	-27.1	9.3403	28.454	495	1.0000	-1.0000	1.2582	1.3025	689.7	858	.725	1.2521	1.3044	690.2	854	.725
1300	2.6674-5	36.1	9.3899	28.454	507	1.0001	-1.0000	1.2684	1.2994	702.6	888	.725	1.2602	1.3019	703.2	882	.725
1350	2.5686-5	99.8	9.4380	28.454	520	1.0001	-1.0000	1.2787	1.2963	715.1	918	.725	1.2679	1.2995	716.0	910	.725
1400	2.4769-5	164.0	9.4846	28.454	533	1.0002	-1.0000	1.2893	1.2932	727.3	948	.725	1.2752	1.2973	728.5	937	.725
1450	2.3914-5	228.7	9.5301	28.454	545	1.0003	-1.0000	1.3003	1.2901	739.3	979	.724	1.2822	1.2952	740.8	964	.725
1500	2.3117-5	294.0	9.5744	28.454	557	1.0005	-1.0000	1.3119	1.2869	751.0	1010	.724	1.2889	1.2932	752.9	991	.724
1550	2.2371-5	359.9	9.6176	28.453	569	1.0007	-1.0000	1.3245	1.2836	762.5	1043	.723	1.2952	1.2913	764.8	1018	.724
1600	2.1671-5	426.5	9.6598	28.452	581	1.0011	-1.0000	1.3383	1.2801	773.6	1078	.721	1.3013	1.2896	776.5	1045	.723
1650	2.1014-5	493.8	9.7013	28.451	593	1.0016	-1.0000	1.3537	1.2764	784.5	1115	.719	1.3070	1.2880	788.1	1072	.723
1700	2.0394-5	561.9	9.7419	28.450	604	1.0023	-1.0001	1.3714	1.2723	795.1	1156	.717	1.3125	1.2865	799.5	1098	.722
1750	1.9810-5	631.0	9.7820	28.447	616	1.0034	-1.0001	1.3921	1.2679	805.3	1201	.714	1.3176	1.2850	810.7	1124	.722
1800	1.9258-5	701.2	9.8215	28.444	627	1.0049	-1.0001	1.4166	1.2630	815.2	1251	.710	1.3226	1.2837	821.9	1150	.721
1850	1.8734-5	772.7	9.8607	28.439	638	1.0069	-1.0002	1.4461	1.2575	824.7	1310	.705	1.3272	1.2825	832.9	1175	.721
1900	1.8237-5	845.9	9.8997	28.433	649	1.0097	-1.0003	1.4821	1.2514	833.8	1381	.697	1.3317	1.2814	843.8	1201	.720
1950	1.7764-5	921.0	9.9388	28.425	660	1.0135	-1.0004	1.5262	1.2445	842.5	1465	.688	1.3359	1.2803	854.6	1226	.720
2000	1.7313-5	998.7	9.9781	28.413	671	1.0186	-1.0006	1.5805	1.2369	850.8	1570	.676	1.3399	1.2794	865.3	1251	.719
2050	1.6882-5	1079.3	10.0179	28.398	682	1.0253	-1.0008	1.6474	1.2286	858.7	1700	.661	1.3437	1.2786	876.0	1276	.719
2100	1.6468-5	1163.7	10.0586	28.378	693	1.0340	-1.0011	1.7296	1.2196	866.2	1863	.643	1.3473	1.2779	886.7	1300	.718
2150	1.6070-5	1252.6	10.1004	28.351	703	1.0454	-1.0015	1.8303	1.2101	873.5	2069	.622	1.3507	1.2773	897.4	1324	.717
2200	1.5686-5	1347.0	10.1438	28.317	714	1.0598	-1.0020	1.9525	1.2003	880.5	2327	.599	1.3540	1.2769	908.2	1348	.717
2250	1.5314-5	1448.2	10.1893	28.274	724	1.0778	-1.0027	2.0995	1.1905	887.5	2650	.574	1.3570	1.2767	919.1	1372	.716
2300	1.4952-5	1557.5	10.2373	28.219	734	1.1002	-1.0036	2.2744	1.1809	894.6	3050	.547	1.3599	1.2766	930.1	1397	.715
2350	1.4598-5	1676.2	10.2884	28.150	744	1.1273	-1.0047	2.4797	1.1719	901.9	3538	.521	1.3627	1.2767	941.4	1421	.713
2400	1.4251-5	1806.0	10.3430	28.066	754	1.1598	-1.0061	2.7173	1.1636	909.6	4127	.496	1.3653	1.2771	952.9	1447	.712
2450	1.3909-5	1948.5	10.4018	27.963	764	1.1979	-1.0077	2.9881	1.1562	917.7	4824	.473	1.3678	1.2778	964.8	1472	.709
2500	1.3571-5	2105.3	10.4651	27.839	773	1.2419	-1.0097	3.2919	1.1498	926.5	5630	.452	1.3702	1.2787	977.1	1499	.707
2550	1.3235-5	2278.2	10.5336	27.693	783	1.2918	-1.0120	3.6275	1.1444	936.0	6544	.434	1.3725	1.2800	989.9	1527	.703
2600	1.2900-5	2468.6	10.6075	27.522	792	1.3474	-1.0146	3.9924	1.1399	946.2	7550	.419	1.3748	1.2816	1003.3	1557	.699
2650	1.2566-5	2677.8	10.6872	27.324	801	1.4082	-1.0176	4.3826	1.1364	957.3	8627	.407	1.3771	1.2836	1017.4	1589	.694
2700	1.2232-5	2907.2	10.7730	27.101	810	1.4733	-1.0210	4.7926	1.1338	969.1	9738	.399	1.3794	1.2860	1032.1	1622	.689
2750	1.1898-5	3157.3	10.8647	26.850	819	1.5414	-1.0246	5.2141	1.1319	981.8	10840	.394	1.3817	1.2889	1047.7	1658	.683
2800	1.1565-5	3428.6	10.9625	26.572	828	1.6107	-1.0284	5.6356	1.1308	995.3	11880	.393	1.3840	1.2921	1064.0	1697	.676
2850	1.1233-5	3720.6	11.0659	26.271	837	1.6785	-1.0323	6.0425	1.1303	1009.7	12803	.395	1.3865	1.2958	1081.1	1738	.668
2900	1.0904-5	4032.3	11.1742	25.948	846	1.7419	-1.0361	6.4163	1.1305	1024.9	13553	.401	1.3890	1.2999	1099.0	1782	.660
2950	1.0579-5	4361.4	11.2868	25.609	856	1.7973	-1.0396	6.7366	1.1313	1040.9	14086	.409	1.3916	1.3043	1117.7	1828	.651
3000	1.0260-5	4704.7	11.4022	25.258	865	1.8412	-1.0427	6.9826	1.1326	1057.6	14370	.420	1.3943	1.3091	1137.0	1876	.643

TABLE 23.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016415; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO ▣ 0.3284; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.8530-4	-454.7	8.2669	28.455	397	1.0000	-1.0000	1.1825	1.3282	591.0	645	.728	1.1821	1.3283	591.0	645	.728
950	3.6502-4	-395.3	8.3311	28.455	412	1.0000	-1.0000	1.1947	1.3238	606.2	677	.727	1.1941	1.3240	606.2	676	.727
1000	3.4677-4	-335.2	8.3927	28.455	426	1.0000	-1.0000	1.2063	1.3196	621.0	708	.726	1.2053	1.3200	621.1	708	.726
1050	3.3025-4	-274.6	8.4518	28.455	441	1.0000	-1.0000	1.2171	1.3159	635.4	739	.726	1.2156	1.3165	635.5	738	.726
1100	3.1524-4	-213.5	8.5087	28.455	454	1.0000	-1.0000	1.2276	1.3124	649.5	769	.726	1.2253	1.3131	649.7	767	.726
1150	3.0154-4	-151.9	8.5635	28.455	468	1.0000	-1.0000	1.2378	1.3090	663.2	799	.726	1.2347	1.3100	663.5	797	.726
1200	2.8897-4	-89.7	8.6164	28.455	481	1.0000	-1.0000	1.2480	1.3057	676.6	828	.725	1.2436	1.3071	677.0	825	.725
1250	2.7741-4	-27.1	8.6675	28.455	495	1.0000	-1.0000	1.2580	1.3026	689.8	858	.725	1.2521	1.3044	690.2	854	.725
1300	2.6674-4	36.1	8.7170	28.455	507	1.0000	-1.0000	1.2679	1.2995	702.6	887	.725	1.2602	1.3019	703.2	882	.725
1350	2.5686-4	99.7	8.7651	28.454	520	1.0001	-1.0000	1.2779	1.2965	715.1	917	.725	1.2679	1.2995	716.0	910	.725
1400	2.4769-4	163.8	8.8117	28.454	533	1.0001	-1.0000	1.2880	1.2935	727.4	947	.725	1.2752	1.2972	728.5	937	.725
1450	2.3915-4	228.5	8.8571	28.454	545	1.0001	-1.0000	1.2983	1.2905	739.5	977	.724	1.2822	1.2951	740.8	964	.725
1500	2.3117-4	293.7	8.9013	28.454	557	1.0002	-1.0000	1.3088	1.2876	751.2	1007	.724	1.2889	1.2932	752.9	991	.724
1550	2.2371-4	359.4	8.9444	28.454	569	1.0003	-1.0000	1.3198	1.2846	762.8	1038	.723	1.2952	1.2913	764.8	1018	.724
1600	2.1672-4	425.7	8.9865	28.453	581	1.0005	-1.0000	1.3312	1.2816	774.1	1070	.723	1.3013	1.2896	776.5	1045	.723
1650	2.1015-4	492.5	9.0276	28.453	593	1.0008	-1.0000	1.3434	1.2785	785.1	1104	.722	1.3070	1.2880	788.0	1072	.723
1700	2.0396-4	560.0	9.0679	28.452	604	1.0011	-1.0000	1.3565	1.2753	796.0	1138	.720	1.3125	1.2864	799.4	1098	.722
1750	1.9813-4	628.2	9.1075	28.451	616	1.0016	-1.0000	1.3708	1.2720	806.5	1174	.719	1.3176	1.2850	810.7	1124	.722
1800	1.9261-4	697.1	9.1463	28.450	627	1.0022	-1.0001	1.3866	1.2685	816.9	1213	.717	1.3226	1.2837	821.7	1150	.721
1850	1.8740-4	766.9	9.1845	28.448	638	1.0030	-1.0001	1.4042	1.2647	827.0	1254	.715	1.3272	1.2824	832.7	1175	.721
1900	1.8245-4	837.6	9.2222	28.445	650	1.0041	-1.0001	1.4241	1.2608	836.8	1299	.712	1.3317	1.2812	843.5	1201	.720
1950	1.7775-4	909.3	9.2595	28.441	661	1.0056	-1.0002	1.4469	1.2565	846.3	1349	.708	1.3359	1.2801	854.3	1226	.720
2000	1.7327-4	982.3	9.2965	28.437	671	1.0075	-1.0002	1.4732	1.2520	855.6	1405	.704	1.3399	1.2791	864.9	1251	.719
2050	1.6901-4	1056.7	9.3332	28.430	682	1.0100	-1.0003	1.5037	1.2470	864.6	1469	.699	1.3437	1.2782	875.4	1275	.719
2100	1.6494-4	1132.8	9.3698	28.423	693	1.0132	-1.0004	1.5394	1.2417	873.4	1542	.692	1.3473	1.2773	885.8	1299	.719
2150	1.6105-4	1210.8	9.4065	28.412	704	1.0172	-1.0005	1.5812	1.2360	881.8	1628	.684	1.3508	1.2766	896.2	1323	.718
2200	1.5732-4	1291.0	9.4434	28.400	714	1.0223	-1.0007	1.6302	1.2299	890.0	1728	.674	1.3540	1.2759	906.5	1347	.718
2250	1.5373-4	1373.9	9.4807	28.383	724	1.0286	-1.0010	1.6876	1.2235	898.0	1848	.662	1.3571	1.2753	916.8	1370	.717
2300	1.5028-4	1459.9	9.5185	28.363	735	1.0364	-1.0013	1.7546	1.2168	905.8	1990	.648	1.3600	1.2748	927.1	1394	.717
2350	1.4696-4	1549.6	9.5571	28.338	745	1.0459	-1.0016	1.8326	1.2099	913.4	2159	.632	1.3628	1.2744	937.4	1417	.716
2400	1.4374-4	1643.4	9.5966	28.308	755	1.0575	-1.0021	1.9227	1.2030	920.9	2360	.615	1.3654	1.2741	947.7	1440	.716
2450	1.4062-4	1742.1	9.6373	28.270	765	1.0712	-1.0027	2.0261	1.1960	928.3	2599	.597	1.3679	1.2739	958.1	1464	.715
2500	1.3759-4	1846.3	9.6793	28.225	775	1.0875	-1.0034	2.1437	1.1892	935.8	2879	.577	1.3702	1.2739	968.6	1487	.714
2550	1.3463-4	1956.7	9.7231	28.171	785	1.1064	-1.0042	2.2762	1.1827	943.5	3207	.557	1.3724	1.2740	979.2	1511	.713
2600	1.3174-4	2074.1	9.7687	28.107	794	1.1282	-1.0052	2.4237	1.1767	951.3	3587	.537	1.3745	1.2742	990.0	1535	.711
2650	1.2891-4	2199.3	9.8164	28.032	804	1.1530	-1.0064	2.5863	1.1711	959.4	4021	.517	1.3766	1.2746	1000.9	1559	.710
2700	1.2613-4	2333.0	9.8663	27.945	814	1.1808	-1.0077	2.7635	1.1660	967.8	4512	.498	1.3785	1.2752	1012.1	1584	.708
2750	1.2339-4	2475.9	9.9188	27.845	823	1.2115	-1.0092	2.9544	1.1616	976.6	5059	.481	1.3803	1.2760	1023.6	1610	.706
2800	1.2069-4	2628.7	9.9738	27.730	832	1.2452	-1.0110	3.1579	1.1577	985.9	5660	.464	1.3821	1.2770	1035.4	1636	.703
2850	1.1803-4	2791.9	10.0316	27.602	841	1.2817	-1.0129	3.3725	1.1545	995.6	6309	.450	1.3838	1.2782	1047.6	1663	.700
2900	1.1538-4	2966.1	10.0922	27.458	851	1.3207	-1.0150	3.5966	1.1518	1005.7	6999	.437	1.3855	1.2797	1060.1	1692	.697
2950	1.1277-4	3151.7	10.1556	27.298	860	1.3619	-1.0174	3.8282	1.1497	1016.4	7717	.427	1.3872	1.2813	1073.0	1721	.693
3000	1.1018-4	3349.0	10.2219	27.123	869	1.4050	-1.0199	4.0649	1.1481	1027.5	8449	.418	1.3889	1.2832	1086.3	1752	.689

TABLE 23.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016415; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8530-3	-454.7	7.5940	28.455	397	1.0000	-1.0000	1.1825	1.3282	591.0	645	.728	1.1821	1.3283	591.0	645	.728
950	3.6502-3	-395.3	7.6583	28.455	412	1.0000	-1.0000	1.1947	1.3238	606.2	677	.727	1.1941	1.3240	606.2	676	.727
1000	3.4677-3	-335.2	7.7199	28.455	426	1.0000	-1.0000	1.2063	1.3196	621.0	708	.726	1.2053	1.3200	621.0	708	.726
1050	3.3025-3	-274.6	7.7790	28.455	441	1.0000	-1.0000	1.2171	1.3159	635.4	739	.726	1.2156	1.3165	635.5	738	.726
1100	3.1524-3	-213.5	7.8359	28.455	454	1.0000	-1.0000	1.2276	1.3124	649.5	769	.726	1.2253	1.3131	649.7	767	.726
1150	3.0154-3	-151.9	7.8907	28.455	468	1.0000	-1.0000	1.2378	1.3090	663.2	799	.726	1.2347	1.3100	663.5	797	.726
1200	2.8897-3	-89.7	7.9436	28.455	481	1.0000	-1.0000	1.2479	1.3057	676.6	828	.725	1.2436	1.3071	677.0	825	.725
1250	2.7741-3	-27.1	7.9947	28.455	495	1.0000	-1.0000	1.2578	1.3026	689.8	858	.725	1.2521	1.3044	690.2	854	.725
1300	2.6674-3	36.0	8.0442	28.455	507	1.0000	-1.0000	1.2677	1.2995	702.6	887	.725	1.2602	1.3019	703.2	882	.725
1350	2.5686-3	99.7	8.0922	28.455	520	1.0000	-1.0000	1.2775	1.2966	715.2	916	.725	1.2679	1.2995	716.0	910	.725
1400	2.4769-3	163.8	8.1389	28.455	533	1.0000	-1.0000	1.2873	1.2936	727.5	946	.725	1.2752	1.2972	728.5	937	.725
1450	2.3915-3	228.4	8.1842	28.455	545	1.0001	-1.0000	1.2972	1.2908	739.5	976	.725	1.2822	1.2951	740.8	964	.725
1500	2.3118-3	293.5	8.2284	28.454	557	1.0001	-1.0000	1.3072	1.2879	751.3	1005	.724	1.2889	1.2932	752.9	991	.724
1550	2.2372-3	359.1	8.2714	28.454	569	1.0002	-1.0000	1.3174	1.2851	762.9	1036	.724	1.2952	1.2913	764.8	1018	.724
1600	2.1673-3	425.3	8.3134	28.454	581	1.0003	-1.0000	1.3278	1.2823	774.3	1067	.723	1.3013	1.2896	776.5	1045	.724
1650	2.1016-3	491.9	8.3544	28.454	593	1.0004	-1.0000	1.3386	1.2795	785.4	1098	.722	1.3070	1.2879	788.0	1072	.723
1700	2.0397-3	559.1	8.3945	28.454	604	1.0005	-1.0000	1.3497	1.2767	796.4	1130	.722	1.3125	1.2864	799.4	1098	.723
1750	1.9814-3	626.9	8.4338	28.453	616	1.0008	-1.0000	1.3613	1.2738	807.1	1163	.721	1.3176	1.2850	810.6	1124	.722
1800	1.9263-3	695.3	8.4724	28.452	627	1.0010	-1.0000	1.3735	1.2709	817.6	1197	.720	1.3226	1.2836	821.7	1150	.721
1850	1.8742-3	764.3	8.5102	28.451	638	1.0014	-1.0000	1.3864	1.2680	828.0	1232	.719	1.3272	1.2823	832.6	1175	.721
1900	1.8248-3	833.9	8.5473	28.450	650	1.0019	-1.0001	1.4002	1.2649	838.1	1268	.717	1.3317	1.2812	843.4	1201	.720
1950	1.7779-3	904.3	8.5839	28.448	661	1.0025	-1.0001	1.4151	1.2618	848.0	1306	.715	1.3359	1.2800	854.1	1226	.720
2000	1.7333-3	975.4	8.6199	28.446	671	1.0033	-1.0001	1.4312	1.2586	857.8	1347	.714	1.3399	1.2790	864.7	1251	.719
2050	1.6909-3	1047.4	8.6555	28.444	682	1.0043	-1.0001	1.4489	1.2553	867.3	1389	.711	1.3437	1.2780	875.1	1275	.719
2100	1.6504-3	1120.4	8.6906	28.440	693	1.0056	-1.0002	1.4683	1.2518	876.7	1435	.709	1.3474	1.2771	885.5	1299	.719
2150	1.6118-3	1194.3	8.7254	28.436	704	1.0072	-1.0002	1.4898	1.2482	885.8	1485	.706	1.3508	1.2763	895.7	1323	.719
2200	1.5749-3	1269.4	8.7599	28.431	714	1.0091	-1.0003	1.5137	1.2445	894.8	1540	.702	1.3540	1.2755	905.9	1346	.718
2250	1.5395-3	1345.7	8.7942	28.424	725	1.0115	-1.0004	1.5404	1.2405	903.6	1600	.698	1.3571	1.2748	916.0	1370	.718
2300	1.5056-3	1423.5	8.8284	28.416	735	1.0143	-1.0005	1.5703	1.2364	912.2	1667	.692	1.3601	1.2741	926.0	1393	.718
2350	1.4731-3	1502.8	8.8625	28.406	745	1.0178	-1.0006	1.6039	1.2322	920.6	1742	.686	1.3629	1.2735	935.9	1416	.717
2400	1.4418-3	1583.9	8.8967	28.395	755	1.0220	-1.0008	1.6416	1.2278	928.9	1826	.679	1.3655	1.2730	945.8	1439	.717
2450	1.4117-3	1667.0	8.9310	28.380	766	1.0270	-1.0010	1.6839	1.2232	937.0	1922	.671	1.3680	1.2725	955.7	1462	.716
2500	1.3826-3	1752.4	8.9654	28.363	776	1.0328	-1.0012	1.7312	1.2186	945.0	2030	.661	1.3704	1.2721	965.5	1484	.716
2550	1.3545-3	1840.3	9.0002	28.343	786	1.0397	-1.0015	1.7841	1.2139	952.9	2153	.651	1.3727	1.2718	975.4	1507	.715
2600	1.3274-3	1930.9	9.0354	28.319	795	1.0477	-1.0019	1.8428	1.2092	960.8	2293	.639	1.3748	1.2715	985.2	1530	.715
2650	1.3010-3	2024.6	9.0711	28.291	805	1.0569	-1.0023	1.9078	1.2045	968.5	2452	.627	1.3769	1.2714	995.1	1553	.714
2700	1.2754-3	2121.8	9.1075	28.258	815	1.0675	-1.0028	1.9793	1.1999	976.3	2631	.613	1.3788	1.2713	1005.0	1576	.713
2750	1.2506-3	2222.7	9.1445	28.220	825	1.0794	-1.0034	2.0574	1.1954	984.2	2832	.599	1.3807	1.2713	1014.9	1599	.712
2800	1.2263-3	2327.6	9.1823	28.176	834	1.0927	-1.0040	2.1421	1.1911	992.0	3057	.584	1.3824	1.2714	1024.9	1622	.711
2850	1.2027-3	2437.0	9.2210	28.126	844	1.1075	-1.0048	2.2333	1.1871	1000.0	3308	.570	1.3841	1.2716	1035.0	1645	.710
2900	1.1796-3	2551.1	9.2607	28.070	853	1.1239	-1.0056	2.3306	1.1833	1008.2	3585	.555	1.3857	1.2719	1045.2	1668	.709
2950	1.1570-3	2670.2	9.3014	28.006	862	1.1416	-1.0066	2.4336	1.1799	1016.5	3888	.540	1.3872	1.2723	1055.6	1691	.707
3000	1.1348-3	2794.5	9.3432	27.935	872	1.1609	-1.0076	2.5418	1.1767	1025.0	4219	.525	1.3887	1.2728	1066.0	1715	.706

TABLE 23.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016415; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9265-2	-454.7	7.1238	28.455	397	1.0000	-1.0000	1.1825	1.3282	591.0	645	.728	1.1821	1.3283	591.0	645	.728
950	1.8251-2	-395.2	7.1880	28.455	412	1.0000	-1.0000	1.1947	1.3237	606.2	677	.727	1.1941	1.3240	606.2	676	.727
1000	1.7338-2	-335.2	7.2496	28.455	426	1.0000	-1.0000	1.2063	1.3196	621.0	708	.726	1.2053	1.3200	621.0	708	.726
1050	1.6513-2	-274.6	7.3087	28.455	441	1.0000	-1.0000	1.2171	1.3159	635.4	739	.726	1.2156	1.3165	635.5	738	.726
1100	1.5762-2	-213.5	7.3656	28.455	454	1.0000	-1.0000	1.2276	1.3124	649.5	769	.726	1.2253	1.3131	649.7	767	.726
1150	1.5077-2	-151.9	7.4204	28.455	468	1.0000	-1.0000	1.2378	1.3090	663.2	799	.726	1.2347	1.3100	663.5	797	.726
1200	1.4449-2	-89.7	7.4733	28.455	481	1.0000	-1.0000	1.2479	1.3057	676.6	828	.725	1.2436	1.3071	677.0	825	.725
1250	1.3871-2	-27.1	7.5244	28.455	495	1.0000	-1.0000	1.2578	1.3026	689.8	858	.725	1.2521	1.3044	690.2	854	.725
1300	1.3337-2	36.0	7.5739	28.455	507	1.0000	-1.0000	1.2676	1.2995	702.6	887	.725	1.2602	1.3019	703.2	882	.725
1350	1.2843-2	99.7	7.6220	28.455	520	1.0000	-1.0000	1.2774	1.2966	715.2	916	.725	1.2679	1.2995	716.0	910	.725
1400	1.2385-2	163.8	7.6686	28.455	533	1.0000	-1.0000	1.2871	1.2937	727.5	946	.725	1.2752	1.2972	728.5	937	.725
1450	1.1958-2	228.4	7.7139	28.455	545	1.0000	-1.0000	1.2968	1.2908	739.5	975	.725	1.2822	1.2951	740.8	964	.725
1500	1.1559-2	293.5	7.7581	28.455	557	1.0000	-1.0000	1.3066	1.2881	751.4	1005	.724	1.2889	1.2932	752.9	991	.724
1550	1.1186-2	359.0	7.8011	28.455	569	1.0001	-1.0000	1.3165	1.2853	763.0	1035	.724	1.2952	1.2913	764.8	1018	.724
1600	1.0836-2	425.1	7.8430	28.455	581	1.0001	-1.0000	1.3265	1.2826	774.4	1065	.723	1.3013	1.2896	776.5	1045	.724
1650	1.0508-2	491.7	7.8840	28.455	593	1.0002	-1.0000	1.3367	1.2799	785.5	1096	.723	1.3070	1.2879	788.0	1072	.723
1700	1.0199-2	558.8	7.9241	28.454	604	1.0003	-1.0000	1.3471	1.2772	796.5	1127	.722	1.3125	1.2864	799.4	1098	.723
1750	9.9074-3	626.4	7.9633	28.454	616	1.0004	-1.0000	1.3578	1.2745	807.3	1159	.721	1.3176	1.2850	810.6	1124	.722
1800	9.6321-3	694.6	8.0017	28.454	627	1.0006	-1.0000	1.3688	1.2718	817.9	1191	.721	1.3226	1.2836	821.7	1150	.721
1850	9.3716-3	763.3	8.0393	28.453	638	1.0008	-1.0000	1.3801	1.2691	828.3	1224	.720	1.3272	1.2823	832.6	1175	.721
1900	9.1247-3	832.6	8.0763	28.452	650	1.0011	-1.0000	1.3919	1.2664	838.5	1258	.719	1.3317	1.2811	843.4	1201	.720
1950	8.8905-3	902.5	8.1126	28.451	661	1.0015	-1.0001	1.4043	1.2637	848.6	1293	.718	1.3359	1.2800	854.1	1226	.720
2000	8.6678-3	973.0	8.1483	28.450	671	1.0019	-1.0001	1.4172	1.2609	858.5	1328	.716	1.3399	1.2789	864.6	1251	.719
2050	8.4560-3	1044.2	8.1835	28.449	682	1.0025	-1.0001	1.4309	1.2581	868.2	1365	.715	1.3437	1.2780	875.0	1275	.719
2100	8.2541-3	1116.1	8.2181	28.447	693	1.0032	-1.0001	1.4455	1.2553	877.8	1404	.714	1.3474	1.2770	885.3	1299	.719
2150	8.0614-3	1188.8	8.2523	28.444	704	1.0040	-1.0001	1.4610	1.2524	887.2	1444	.712	1.3508	1.2762	895.5	1323	.719
2200	7.8774-3	1262.3	8.2861	28.441	714	1.0051	-1.0002	1.4776	1.2495	896.4	1486	.710	1.3541	1.2753	905.7	1346	.718
2250	7.7013-3	1336.6	8.3195	28.438	725	1.0063	-1.0002	1.4956	1.2465	905.5	1531	.708	1.3572	1.2746	915.7	1370	.718
2300	7.5328-3	1411.8	8.3526	28.433	735	1.0078	-1.0003	1.5150	1.2434	914.5	1579	.705	1.3601	1.2739	925.6	1393	.718
2350	7.3711-3	1488.1	8.3854	28.428	745	1.0097	-1.0003	1.5361	1.2403	923.3	1631	.702	1.3629	1.2732	935.5	1416	.717
2400	7.2159-3	1565.5	8.4180	28.422	756	1.0118	-1.0004	1.5590	1.2371	932.0	1687	.698	1.3656	1.2726	945.3	1439	.717
2450	7.0667-3	1644.0	8.4504	28.414	766	1.0143	-1.0005	1.5841	1.2338	940.5	1747	.694	1.3681	1.2721	955.0	1461	.717
2500	6.9232-3	1723.9	8.4826	28.405	776	1.0173	-1.0007	1.6114	1.2305	948.9	1813	.689	1.3705	1.2716	964.6	1484	.717
2550	6.7849-3	1805.2	8.5148	28.394	786	1.0207	-1.0008	1.6413	1.2271	957.2	1886	.684	1.3728	1.2711	974.2	1507	.716
2600	6.6515-3	1888.1	8.5470	28.382	796	1.0247	-1.0010	1.6740	1.2237	965.4	1966	.677	1.3750	1.2707	983.8	1529	.715
2650	6.5227-3	1972.7	8.5792	28.367	806	1.0293	-1.0012	1.7097	1.2202	973.5	2054	.670	1.3770	1.2704	993.3	1552	.715
2700	6.3981-3	2059.1	8.6116	28.350	815	1.0346	-1.0014	1.7485	1.2167	981.5	2151	.663	1.3790	1.2701	1002.9	1574	.714
2750	6.2774-3	2147.6	8.6440	28.331	825	1.0406	-1.0017	1.7907	1.2132	989.5	2258	.654	1.3809	1.2699	1012.4	1597	.714
2800	6.1604-3	2238.2	8.6767	28.308	835	1.0473	-1.0020	1.8363	1.2098	997.4	2376	.645	1.3827	1.2697	1021.9	1619	.713
2850	6.0469-3	2331.3	8.7096	28.283	844	1.0549	-1.0024	1.8855	1.2064	1005.4	2505	.635	1.3844	1.2696	1031.4	1641	.712
2900	5.9365-3	2426.9	8.7429	28.254	854	1.0633	-1.0028	1.9383	1.2031	1013.3	2648	.625	1.3860	1.2695	1040.9	1663	.711
2950	5.8292-3	2525.2	8.7765	28.221	863	1.0725	-1.0033	1.9947	1.1999	1021.2	2804	.614	1.3876	1.2695	1050.4	1686	.711
3000	5.7245-3	2626.4	8.8105	28.184	873	1.0827	-1.0038	2.0545	1.1969	1029.2	2974	.603	1.3891	1.2696	1060.0	1708	.710

TABLE 23C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.016415; EQUIV.RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.880-5	-1362.2	7.4099	28.455	1.0676	1.788-5	29.336	132	1.000	-1.000	0.9992	1.3960	281	180	.734	200
220	1.705-5	-1337.5	7.5271	28.455	1.5858	1.624-5	29.308	143	1.000	-1.000	1.0000	1.3960	295	196	.731	220
240	1.525-5	-1275.4	7.7945	28.455	6.0512	1.474-5	29.034	151	1.000	-1.000	1.0129	1.3942	310	208	.735	240
						PRESSURE = 0.10 ATM										
200	1.881-4	-1362.4	6.7883	28.455	1.0311	1.788-4	29.338	132	1.000	-1.000	0.9991	1.3960	281	180	.734	200
220	1.709-4	-1341.4	6.8884	28.455	1.0887	1.625-4	29.335	143	1.000	-1.000	0.9988	1.3962	295	196	.730	220
240	1.563-4	-1316.6	6.9960	28.455	1.5183	1.488-4	29.308	154	1.000	-1.000	1.0001	1.3960	308	211	.727	240
260	1.419-4	-1267.7	7.1906	28.455	4.0628	1.365-4	29.120	162	1.000	-1.000	1.0094	1.3945	322	225	.729	260
280	1.238-4	-1139.2	7.6667	28.455	1.0426	1.238-4	28.455	166	1.000	-1.000	1.0426	1.3894	337	233	.744	280
						PRESSURE = 1.00 ATM										
200	1.880-3	-1362.4	6.1679	28.455	1.0275	1.788-3	29.338	132	1.000	-1.000	0.9991	1.3960	281	180	.734	200
220	1.709-3	-1341.8	6.2663	28.455	1.0393	1.625-3	29.338	143	1.000	-1.000	0.9986	1.3962	295	196	.730	220
240	1.567-3	-1320.6	6.3583	28.455	1.0887	1.490-3	29.335	154	1.000	-1.000	0.9988	1.3962	308	212	.726	240
260	1.444-3	-1297.0	6.4528	28.455	1.3402	1.374-3	29.316	164	1.000	-1.000	1.0002	1.3958	321	227	.724	260
280	1.330-3	-1247.6	6.6346	28.455	2.1353	1.272-3	29.228	173	1.000	-1.000	1.0053	1.3947	333	241	.724	280
298	1.222-3	-1195.1	6.8158	28.455	3.9301	1.185-3	28.986	180	1.000	-1.000	1.0180	1.3923	345	252	.729	298
300	1.210-3	-1187.6	6.8410	28.455	4.2241	1.176-3	28.945	181	1.000	-1.000	1.0201	1.3920	346	253	.730	300
320	1.084-3	-1097.4	7.1333	28.455	1.0460	1.084-3	28.455	186	1.000	-1.000	1.0460	1.3876	360	262	.741	320
						PRESSURE = 10.00 ATM										
200	1.879-2	-1362.4	5.5476	28.455	1.0271	1.788-2	29.338	132	1.000	-1.000	0.9991	1.3960	281	180	.734	200
220	1.708-2	-1341.8	5.6458	28.455	1.0344	1.625-2	29.338	143	1.000	-1.000	0.9986	1.3962	295	196	.730	220
240	1.566-2	-1321.0	5.7362	28.455	1.0460	1.490-2	29.338	154	1.000	-1.000	0.9987	1.3962	308	212	.726	240
260	1.445-2	-1299.9	5.8210	28.455	1.0782	1.375-2	29.336	164	1.000	-1.000	0.9993	1.3959	321	227	.723	260
280	1.341-2	-1260.5	5.9659	28.455	1.2543	1.276-2	29.327	174	1.000	-1.000	1.0006	1.3954	333	242	.721	280
298	1.257-2	-1236.5	6.0491	28.455	1.4201	1.198-2	29.303	183	1.000	-1.000	1.0029	1.3945	343	255	.721	298
300	1.249-2	-1233.8	6.0580	28.455	1.4460	1.190-2	29.299	184	1.000	-1.000	1.0033	1.3944	345	256	.721	300
320	1.163-2	-1201.0	6.1637	28.455	1.8918	1.113-2	29.221	193	1.000	-1.000	1.0087	1.3929	356	269	.723	320
340	1.076-2	-1155.0	6.3029	28.455	2.8139	1.041-2	29.037	200	1.000	-1.000	1.0196	1.3905	368	281	.727	340
360	9.815-3	-1082.7	6.5091	28.455	4.6155	9.700-3	28.653	206	1.000	-1.000	1.0411	1.3864	381	291	.736	360
380	9.125-3	-1034.4	6.6409	28.455	1.0541	9.125-3	28.455	213	1.000	-1.000	1.0541	1.3835	392	303	.740	380
						PRESSURE = 50.00 ATM										
200	9.355-2	-1362.4	5.1140	28.455	1.0271	8.938-2	29.338	132	1.000	-1.000	0.9991	1.3960	281	180	.734	200
220	8.509-2	-1341.8	5.2122	28.455	1.0339	8.126-2	29.338	143	1.000	-1.000	0.9986	1.3962	295	196	.730	220
240	7.803-2	-1321.1	5.3025	28.455	1.0422	7.449-2	29.338	154	1.000	-1.000	0.9987	1.3962	308	212	.726	240
260	7.205-2	-1300.1	5.3864	28.455	1.0550	6.876-2	29.338	164	1.000	-1.000	0.9992	1.3959	321	227	.723	260
280	6.693-2	-1261.6	5.5281	28.455	1.1775	6.384-2	29.336	174	1.000	-1.000	1.0002	1.3954	333	242	.721	280
298	6.284-2	-1240.0	5.6029	28.455	1.2105	5.994-2	29.331	183	1.000	-1.000	1.0016	1.3947	343	255	.720	298
300	6.245-2	-1237.8	5.6104	28.455	1.2157	5.957-2	29.330	184	1.000	-1.000	1.0018	1.3946	344	256	.720	300
320	5.848-2	-1212.7	5.6913	28.455	1.3038	5.582-2	29.315	193	1.000	-1.000	1.0043	1.3936	356	270	.720	320
340	5.487-2	-1185.0	5.7751	28.455	1.4785	5.247-2	29.278	202	1.000	-1.000	1.0081	1.3922	367	283	.722	340
360	5.149-2	-1152.6	5.8676	28.455	1.7888	4.943-2	29.201	211	1.000	-1.000	1.0142	1.3903	378	295	.724	360
380	4.817-2	-1112.2	5.9769	28.455	2.2987	4.659-2	29.056	218	1.000	-1.000	1.0241	1.3878	388	307	.727	380
400	4.476-2	-1058.8	6.1136	28.455	3.0980	4.388-2	28.806	224	1.000	-1.000	1.0396	1.3843	400	319	.732	400
420	4.128-2	-992.1	6.2764	28.455	1.0610	4.128-2	28.455	230	1.000	-1.000	1.0610	1.3801	412	330	.738	420

TABLE 24A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.032829; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.4481;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06476; H2O= .10900; N2= .72090; O2= .09670; AR= .00865

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7334-3	8.6672-2	-1925.6	8.0015	7.3285	6.6556	5.9826	5.5122	1.0495	1.3860	284.6	119	162	.7743	200
210	1.6509-3	8.2545-2	-1915.1	8.0527	7.3797	6.7068	6.0338	5.5634	1.0498	1.3858	291.6	125	170	.7704	210
220	1.5759-3	7.8793-2	-1904.6	8.1016	7.4286	6.7556	6.0827	5.6123	1.0503	1.3855	298.5	130	178	.7669	220
230	1.5073-3	7.5367-2	-1894.1	8.1483	7.4753	6.8023	6.1294	5.6590	1.0509	1.3853	305.2	136	187	.7637	230
240	1.4445-3	7.2227-2	-1883.6	8.1930	7.5200	6.8471	6.1741	5.7037	1.0516	1.3849	311.7	141	195	.7609	240
250	1.3868-3	6.9338-2	-1873.0	8.2359	7.5630	6.8900	6.2170	5.7467	1.0524	1.3845	318.1	146	203	.7585	250
260	1.3334-3	6.6671-2	-1862.5	8.2772	7.6043	6.9313	6.2583	5.7880	1.0533	1.3841	324.3	152	211	.7564	260
270	1.2840-3	6.4201-2	-1852.0	8.3170	7.6440	6.9711	6.2981	5.8277	1.0543	1.3835	330.4	157	219	.7547	270
280	1.2382-3	6.1909-2	-1841.4	8.3554	7.6824	7.0094	6.3365	5.8661	1.0554	1.3830	336.4	162	227	.7534	280
290	1.1955-3	5.9774-2	-1830.9	8.3924	7.7195	7.0465	6.3735	5.9031	1.0566	1.3824	342.3	167	234	.7523	290
298	1.1628-3	5.8140-2	-1822.3	8.4217	7.7488	7.0758	6.4028	5.9324	1.0576	1.3819	347.0	171	240	.7517	298
300	1.1556-3	5.7781-2	-1820.3	8.4283	7.7553	7.0823	6.4094	5.9390	1.0578	1.3818	348.1	172	242	.7515	300
310	1.1183-3	5.5917-2	-1809.7	8.4630	7.7900	7.1170	6.4441	5.9737	1.0592	1.3811	353.7	176	249	.7514	310
320	1.0834-3	5.4170-2	-1799.1	8.4966	7.8237	7.1507	6.4777	6.0073	1.0607	1.3804	359.3	181	256	.7513	320
330	1.0506-3	5.2528-2	-1788.5	8.5293	7.8563	7.1834	6.5104	6.0400	1.0622	1.3796	364.8	186	263	.7514	330
340	1.0197-3	5.0983-2	-1777.9	8.5610	7.8881	7.2151	6.5421	6.0717	1.0638	1.3788	370.2	191	270	.7515	340
350	9.9054-4	4.9527-2	-1767.2	8.5919	7.9189	7.2459	6.5730	6.1026	1.0655	1.3780	375.4	195	277	.7515	350
360	9.6302-4	4.8151-2	-1756.6	8.6219	7.9490	7.2760	6.6030	6.1326	1.0673	1.3771	380.7	200	284	.7510	360
370	9.3699-4	4.6850-2	-1745.9	8.6512	7.9782	7.3053	6.6323	6.1619	1.0691	1.3762	385.8	204	291	.7504	370
380	9.1234-4	4.5617-2	-1735.2	8.6797	8.0068	7.3338	6.6608	6.1904	1.0710	1.3753	390.8	209	298	.7497	380
390	8.8894-4	4.4447-2	-1724.5	8.7076	8.0346	7.3616	6.6887	6.2183	1.0730	1.3744	395.8	213	305	.7490	390
400	8.6672-4	4.3336-2	-1713.7	8.7348	8.0618	7.3888	6.7159	6.2455	1.0750	1.3734	400.7	217	312	.7483	400
410	8.4558-4	4.2279-2	-1703.0	8.7613	8.0884	7.4154	6.7424	6.2720	1.0771	1.3724	405.5	222	319	.7479	410
420	8.2545-4	4.1272-2	-1692.2	8.7873	8.1143	7.4414	6.7684	6.2980	1.0793	1.3714	410.3	226	326	.7476	420
430	8.0625-4	4.0313-2	-1681.4	8.8127	8.1398	7.4668	6.7938	6.3235	1.0815	1.3703	415.0	230	333	.7473	430
440	7.8793-4	3.9396-2	-1670.5	8.8376	8.1647	7.4917	6.8187	6.3483	1.0838	1.3693	419.6	234	340	.7471	440
450	7.7042-4	3.8521-2	-1659.7	8.8620	8.1890	7.5161	6.8431	6.3727	1.0861	1.3682	424.2	238	346	.7470	450
460	7.5367-4	3.7683-2	-1648.8	8.8859	8.2129	7.5400	6.8670	6.3966	1.0884	1.3671	428.7	242	353	.7469	460
470	7.3763-4	3.6882-2	-1637.9	8.9093	8.2364	7.5634	6.8904	6.4201	1.0909	1.3660	433.2	246	360	.7469	470
480	7.2227-4	3.6113-2	-1627.0	8.9323	8.2594	7.5864	6.9134	6.4430	1.0933	1.3649	437.6	250	366	.7469	480
490	7.0753-4	3.5376-2	-1616.1	8.9549	8.2819	7.6090	6.9360	6.4656	1.0958	1.3637	441.9	254	373	.7469	490
500	6.9338-4	3.4669-2	-1605.1	8.9771	8.3041	7.6311	6.9582	6.4878	1.0983	1.3626	446.2	258	380	.7470	500
510	6.7978-4	3.3989-2	-1594.1	8.9988	8.3259	7.6529	6.9799	6.5096	1.1009	1.3614	450.5	262	386	.7468	510
520	6.6671-4	3.3335-2	-1583.1	9.0202	8.3473	7.6743	7.0013	6.5310	1.1035	1.3603	454.7	266	393	.7466	520
530	6.5413-4	3.2706-2	-1572.0	9.0413	8.3683	7.6953	7.0224	6.5520	1.1062	1.3591	458.8	270	400	.7464	530
540	6.4201-4	3.2101-2	-1561.0	9.0620	8.3890	7.7161	7.0431	6.5727	1.1088	1.3579	462.9	273	406	.7462	540
550	6.3034-4	3.1517-2	-1549.9	9.0824	8.4094	7.7364	7.0635	6.5931	1.1115	1.3567	467.0	277	413	.7459	550
560	6.1909-4	3.0954-2	-1538.7	9.1024	8.4294	7.7565	7.0835	6.6131	1.1143	1.3555	471.0	281	420	.7456	560
570	6.0822-4	3.0411-2	-1527.6	9.1222	8.4492	7.7762	7.1033	6.6329	1.1170	1.3544	475.0	285	427	.7454	570
580	5.9774-4	2.9887-2	-1516.4	9.1416	8.4686	7.7957	7.1227	6.6523	1.1198	1.3532	478.9	288	433	.7451	580
590	5.8761-4	2.9380-2	-1505.2	9.1608	8.4878	7.8148	7.1419	6.6715	1.1226	1.3520	482.8	292	440	.7448	590

TABLE 24A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.032829; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.4481;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06476; H2O= .10900; N2= .72090; O2= .09670; AR= .00865

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.7781-4	2.8891-2	-1493.9	9.1797	8.5067	7.8337	7.1608	6.6904	1.1254	1.3508	486.7	296	447	.7444	600
610	5.6834-4	2.8417-2	-1482.7	9.1983	8.5253	7.8524	7.1794	6.7090	1.1283	1.3496	490.5	299	454	.7441	610
620	5.5917-4	2.7959-2	-1471.4	9.2167	8.5437	7.8707	7.1978	6.7274	1.1311	1.3484	494.3	303	461	.7437	620
630	5.5030-4	2.7515-2	-1460.0	9.2348	8.5618	7.8888	7.2159	6.7455	1.1340	1.3472	498.1	306	467	.7433	630
640	5.4170-4	2.7085-2	-1448.7	9.2527	8.5797	7.9067	7.2338	6.7634	1.1368	1.3461	501.8	310	474	.7429	640
650	5.3337-4	2.6668-2	-1437.3	9.2703	8.5973	7.9244	7.2514	6.7810	1.1397	1.3449	505.5	314	481	.7425	650
660	5.2528-4	2.6264-2	-1425.9	9.2877	8.6148	7.9418	7.2688	6.7984	1.1426	1.3437	509.1	317	488	.7421	660
670	5.1744-4	2.5872-2	-1414.4	9.3049	8.6320	7.9590	7.2860	6.8157	1.1455	1.3425	512.7	320	495	.7417	670
680	5.0983-4	2.5492-2	-1403.0	9.3219	8.6490	7.9760	7.3030	6.8326	1.1484	1.3414	516.3	324	502	.7414	680
690	5.0245-4	2.5122-2	-1391.5	9.3387	8.6657	7.9928	7.3198	6.8494	1.1513	1.3402	519.9	327	509	.7410	690
700	4.9527-4	2.4763-2	-1380.0	9.3553	8.6823	8.0094	7.3364	6.8660	1.1542	1.3391	523.4	331	516	.7406	700
710	4.8829-4	2.4415-2	-1368.4	9.3717	8.6987	8.0258	7.3528	6.8824	1.1571	1.3379	526.9	334	522	.7402	710
720	4.8151-4	2.4076-2	-1356.8	9.3879	8.7149	8.0420	7.3690	6.8986	1.1600	1.3368	530.4	338	529	.7398	720
730	4.7491-4	2.3746-2	-1345.2	9.4039	8.7309	8.0580	7.3850	6.9146	1.1629	1.3357	533.8	341	536	.7394	730
740	4.6850-4	2.3425-2	-1333.6	9.4198	8.7468	8.0738	7.4009	6.9305	1.1658	1.3346	537.3	344	543	.7390	740
750	4.6225-4	2.3113-2	-1321.9	9.4354	8.7625	8.0895	7.4165	6.9461	1.1687	1.3335	540.6	348	550	.7387	750
760	4.5617-4	2.2808-2	-1310.2	9.4509	8.7780	8.1050	7.4320	6.9616	1.1715	1.3324	544.0	351	557	.7383	760
770	4.5024-4	2.2512-2	-1298.5	9.4663	8.7933	8.1203	7.4474	6.9770	1.1744	1.3313	547.4	354	564	.7379	770
780	4.4447-4	2.2224-2	-1286.7	9.4814	8.8085	8.1355	7.4625	6.9921	1.1773	1.3302	550.7	357	570	.7376	780
790	4.3884-4	2.1942-2	-1274.9	9.4964	8.8235	8.1505	7.4775	7.0072	1.1801	1.3292	554.0	361	577	.7372	790
800	4.3336-4	2.1668-2	-1263.1	9.5113	8.8383	8.1654	7.4924	7.0220	1.1829	1.3281	557.3	364	584	.7369	800
810	4.2801-4	2.1400-2	-1251.2	9.5260	8.8531	8.1801	7.5071	7.0367	1.1858	1.3271	560.5	367	591	.7366	810
820	4.2279-4	2.1140-2	-1239.4	9.5406	8.8676	8.1947	7.5217	7.0513	1.1886	1.3261	563.7	370	598	.7363	820
830	4.1770-4	2.0885-2	-1227.5	9.5550	8.8820	8.2091	7.5361	7.0657	1.1914	1.3251	567.0	373	604	.7361	830
840	4.1272-4	2.0636-2	-1215.5	9.5693	8.8963	8.2234	7.5504	7.0800	1.1941	1.3241	570.1	377	611	.7358	840
850	4.0787-4	2.0393-2	-1203.6	9.5834	8.9105	8.2375	7.5645	7.0942	1.1969	1.3231	573.3	380	618	.7356	850
860	4.0313-4	2.0156-2	-1191.6	9.5975	8.9245	8.2515	7.5786	7.1082	1.1996	1.3221	576.5	383	625	.7353	860
870	3.9849-4	1.9925-2	-1179.6	9.6113	8.9384	8.2654	7.5924	7.1221	1.2023	1.3212	579.6	386	631	.7351	870
880	3.9396-4	1.9698-2	-1167.6	9.6251	8.9521	8.2792	7.6062	7.1358	1.2050	1.3202	582.7	389	638	.7348	880
890	3.8954-4	1.9477-2	-1155.5	9.6387	8.9658	8.2928	7.6198	7.1494	1.2077	1.3193	585.8	392	645	.7346	890
900	3.8521-4	1.9260-2	-1143.4	9.6522	8.9793	8.3063	7.6333	7.1630	1.2103	1.3184	588.9	395	651	.7344	900
910	3.8098-4	1.9049-2	-1131.3	9.6656	8.9927	8.3197	7.6467	7.1763	1.2129	1.3175	591.9	398	658	.7342	910
920	3.7683-4	1.8842-2	-1119.2	9.6789	9.0059	8.3330	7.6600	7.1896	1.2155	1.3166	595.0	401	665	.7340	920
930	3.7278-4	1.8639-2	-1107.0	9.6920	9.0191	8.3461	7.6731	7.2028	1.2181	1.3157	598.0	404	671	.7338	930
940	3.6882-4	1.8441-2	-1094.8	9.7051	9.0321	8.3592	7.6862	7.2158	1.2206	1.3148	601.0	407	678	.7336	940
950	3.6493-4	1.8247-2	-1082.6	9.7180	9.0451	8.3721	7.6991	7.2287	1.2231	1.3140	604.0	410	684	.7334	950
960	3.6113-4	1.8057-2	-1070.3	9.7308	9.0579	8.3849	7.7119	7.2416	1.2256	1.3131	607.0	413	691	.7332	960
970	3.5741-4	1.7871-2	-1058.1	9.7436	9.0706	8.3976	7.7247	7.2543	1.2280	1.3123	610.0	416	697	.7330	970
980	3.5376-4	1.7688-2	-1045.8	9.7562	9.0832	8.4102	7.7373	7.2669	1.2304	1.3115	612.9	419	704	.7328	980
990	3.5019-4	1.7509-2	-1033.5	9.7687	9.0957	8.4227	7.7498	7.2794	1.2328	1.3107	615.8	422	710	.7326	990

TABLE 24A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.032829; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.4481;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06476; H2O= .10900; N2= .72090; O2= .09670; AR= .00865

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4669-4	1.7334-2	-1021.1	9.7811	9.1081	8.4351	7.7622	7.2918	1.2352	1.3100	618.8	425	717	.7325	1000
1050	3.3018-4	1.6509-2	-959.1	9.8416	9.1686	8.4957	7.8227	7.3523	1.2463	1.3064	633.2	439	748	.7318	1050
1100	3.1517-4	1.5759-2	-896.5	9.8998	9.2269	8.5539	7.8809	7.4105	1.2569	1.3030	647.2	454	780	.7313	1100
1150	3.0147-4	1.5073-2	-833.4	9.9559	9.2830	8.6100	7.9370	7.4666	1.2670	1.2998	661.0	467	810	.7308	1150
1200	2.8891-4	1.4445-2	-769.8	10.0101	9.3371	8.6641	7.9912	7.5208	1.2767	1.2969	674.4	481	840	.7304	1200
1250	2.7735-4	1.3868-2	-705.7	10.0624	9.3894	8.7164	8.0435	7.5731	1.2859	1.2941	687.6	494	871	.7300	1250
1300	2.6668-4	1.3334-2	-641.2	10.1130	9.4400	8.7670	8.0941	7.6237	1.2946	1.2916	700.5	507	900	.7297	1300
1350	2.5681-4	1.2840-2	-576.3	10.1620	9.4890	8.8160	8.1431	7.6727	1.3030	1.2892	713.2	520	930	.7293	1350
1400	2.4763-4	1.2382-2	-510.9	10.2095	9.5365	8.8636	8.1906	7.7202	1.3110	1.2869	725.6	533	959	.7289	1400
1450	2.3909-4	1.1955-2	-445.2	10.2556	9.5827	8.9097	8.2367	7.7664	1.3185	1.2848	737.9	546	987	.7285	1450
1500	2.3113-4	1.1556-2	-379.1	10.3005	9.6275	8.9545	8.2816	7.8112	1.3257	1.2828	749.9	558	1016	.7281	1500
1550	2.2367-4	1.1183-2	-312.6	10.3441	9.6711	8.9981	8.3252	7.8548	1.3326	1.2809	761.8	570	1045	.7275	1550
1600	2.1668-4	1.0834-2	-245.8	10.3865	9.7135	9.0405	8.3676	7.8972	1.3391	1.2792	773.4	582	1073	.7269	1600
1650	2.1011-4	1.0506-2	-178.7	10.4278	9.7548	9.0818	8.4089	7.9385	1.3453	1.2775	784.9	594	1101	.7262	1650
1700	2.0393-4	1.0197-2	-111.3	10.4680	9.7951	9.1221	8.4491	7.9787	1.3512	1.2760	796.2	606	1129	.7256	1700
1750	1.9811-4	9.9054-3	-43.6	10.5073	9.8343	9.1613	8.4884	8.0180	1.3568	1.2745	807.4	618	1156	.7249	1750
1800	1.9260-4	9.6302-3	24.4	10.5456	9.8726	9.1996	8.5267	8.0563	1.3621	1.2732	818.4	629	1184	.7243	1800
1850	1.8740-4	9.3699-3	92.6	10.5830	9.9100	9.2370	8.5641	8.0937	1.3672	1.2719	829.3	641	1211	.7236	1850
1900	1.8247-4	9.1234-3	161.1	10.6195	9.9465	9.2736	8.6006	8.1302	1.3720	1.2707	840.0	652	1238	.7229	1900
1950	1.7779-4	8.8894-3	229.8	10.6552	9.9822	9.3092	8.6363	8.1659	1.3765	1.2695	850.6	663	1264	.7223	1950
2000	1.7334-4	8.6672-3	298.7	10.6901	10.0171	9.3442	8.6712	8.2008	1.3809	1.2685	861.1	675	1291	.7216	2000
2050	1.6912-4	8.4558-3	367.9	10.7242	10.0513	9.3783	8.7053	8.2350	1.3850	1.2675	871.4	686	1317	.7211	2050
2100	1.6509-4	8.2545-3	437.2	10.7577	10.0847	9.4117	8.7388	8.2684	1.3889	1.2665	881.7	696	1342	.7206	2100
2150	1.6125-4	8.0625-3	506.8	10.7904	10.1174	9.4444	8.7715	8.3011	1.3926	1.2656	891.8	707	1368	.7201	2150
2200	1.5759-4	7.8793-3	576.5	10.8224	10.1495	9.4765	8.8035	8.3332	1.3961	1.2648	901.8	718	1393	.7196	2200
2250	1.5408-4	7.7042-3	646.4	10.8539	10.1809	9.5079	8.8350	8.3646	1.3995	1.2640	911.7	729	1418	.7191	2250
2300	1.5073-4	7.5367-3	716.4	10.8846	10.2117	9.5387	8.8657	8.3954	1.4027	1.2632	921.5	739	1443	.7186	2300
2350	1.4753-4	7.3763-3	786.7	10.9148	10.2419	9.5689	8.8959	8.4256	1.4057	1.2625	931.2	749	1467	.7181	2350
2400	1.4445-4	7.2227-3	857.0	10.9445	10.2715	9.5985	8.9256	8.4552	1.4086	1.2618	940.8	760	1491	.7176	2400
2450	1.4151-4	7.0753-3	927.5	10.9735	10.3006	9.6276	8.9546	8.4843	1.4113	1.2612	950.3	770	1516	.7171	2450
2500	1.3868-4	6.9338-3	998.1	11.0021	10.3291	9.6561	8.9832	8.5128	1.4140	1.2606	959.7	780	1540	.7166	2500
2550	1.3596-4	6.7978-3	1068.9	11.0301	10.3571	9.6842	9.0112	8.5408	1.4165	1.2600	969.0	790	1564	.7158	2550
2600	1.3334-4	6.6671-3	1139.8	11.0576	10.3847	9.7117	9.0387	8.5684	1.4189	1.2594	978.3	800	1588	.7151	2600
2650	1.3083-4	6.5413-3	1210.8	11.0847	10.4117	9.7388	9.0658	8.5954	1.4212	1.2589	987.4	810	1612	.7144	2650
2700	1.2840-4	6.4201-3	1281.9	11.1113	10.4383	9.7653	9.0924	8.6220	1.4234	1.2584	996.5	820	1636	.7137	2700
2750	1.2607-4	6.3034-3	1353.1	11.1374	10.4644	9.7915	9.1185	8.6481	1.4255	1.2579	1005.5	830	1659	.7130	2750
2800	1.2382-4	6.1909-3	1424.5	11.1631	10.4901	9.8172	9.1442	8.6738	1.4276	1.2574	1014.4	840	1683	.7124	2800
2850	1.2164-4	6.0822-3	1495.9	11.1884	10.5154	9.8425	9.1695	8.6991	1.4296	1.2570	1023.2	849	1706	.7117	2850
2900	1.1955-4	5.9774-3	1567.4	11.2133	10.5403	9.8673	9.1944	8.7240	1.4315	1.2566	1032.0	859	1729	.7111	2900
2950	1.1752-4	5.8761-3	1639.0	11.2378	10.5648	9.8918	9.2189	8.7485	1.4333	1.2561	1040.7	869	1752	.7105	2950
3000	1.1556-4	5.7781-3	1710.7	11.2619	10.5889	9.9159	9.2430	8.7726	1.4351	1.2557	1049.3	878	1775	.7099	3000

TABLE 24.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.032829; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8521-6	-1143.4	9.6523	28.448	395	1.0000	-1.0000	1.2106	1.3183	588.9	651	.734	1.2103	1.3184	588.9	651	.734
950	3.6493-6	-1082.5	9.7181	28.448	410	1.0000	-1.0000	1.2236	1.3138	604.0	685	.733	1.2231	1.3140	604.0	684	.733
1000	3.4669-6	-1021.0	9.7811	28.448	425	1.0000	-1.0000	1.2360	1.3097	618.7	717	.732	1.2352	1.3100	618.8	717	.732
1050	3.3018-6	-958.9	9.8417	28.448	439	1.0000	-1.0000	1.2476	1.3059	633.1	749	.732	1.2463	1.3064	633.2	748	.732
1100	3.1517-6	-896.3	9.9000	28.448	454	1.0000	-1.0000	1.2588	1.3024	647.1	781	.731	1.2569	1.3030	647.2	780	.731
1150	3.0147-6	-833.1	9.9562	28.448	467	1.0000	-1.0000	1.2698	1.2990	660.8	812	.731	1.2670	1.2998	661.0	810	.731
1200	2.8891-6	-769.3	10.0105	28.448	481	1.0000	-1.0000	1.2807	1.2957	674.1	843	.730	1.2767	1.2969	674.4	840	.730
1250	2.7735-6	-705.0	10.0630	28.448	494	1.0001	-1.0000	1.2916	1.2925	687.2	874	.730	1.2859	1.2941	687.6	871	.730
1300	2.6668-6	-640.1	10.1139	28.448	507	1.0001	-1.0000	1.3025	1.2894	699.9	906	.729	1.2946	1.2916	700.5	900	.730
1350	2.5680-6	-574.7	10.1632	28.448	520	1.0002	-1.0000	1.3139	1.2862	712.4	938	.729	1.3030	1.2892	713.2	930	.729
1400	2.4763-6	-508.7	10.2112	28.447	533	1.0004	-1.0000	1.3259	1.2830	724.6	971	.728	1.3110	1.2869	725.7	959	.729
1450	2.3909-6	-442.1	10.2580	28.447	546	1.0006	-1.0000	1.3389	1.2797	736.4	1005	.727	1.3185	1.2848	737.9	987	.729
1500	2.3111-6	-374.8	10.3036	28.446	558	1.0010	-1.0000	1.3536	1.2761	748.0	1041	.725	1.3258	1.2828	750.0	1016	.728
1550	2.2364-6	-306.7	10.3483	28.445	570	1.0017	-1.0000	1.3708	1.2721	759.2	1081	.723	1.3326	1.2810	761.8	1045	.727
1600	2.1664-6	-237.7	10.3921	28.443	582	1.0026	-1.0001	1.3917	1.2676	770.0	1126	.720	1.3391	1.2792	773.5	1073	.727
1650	2.1005-6	-167.5	10.4353	28.440	594	1.0041	-1.0001	1.4179	1.2623	780.3	1178	.715	1.3453	1.2776	785.0	1101	.726
1700	2.0385-6	-95.8	10.4781	28.436	606	1.0064	-1.0002	1.4516	1.2560	790.1	1242	.708	1.3512	1.2761	796.4	1129	.725
1750	1.9798-6	-22.1	10.5208	28.429	618	1.0097	-1.0002	1.4959	1.2485	799.4	1323	.699	1.3568	1.2748	807.7	1157	.725
1800	1.9241-6	54.1	10.5637	28.420	629	1.0146	-1.0004	1.5548	1.2396	808.0	1428	.685	1.3621	1.2735	818.9	1184	.724
1850	1.8712-6	133.7	10.6074	28.406	641	1.0217	-1.0006	1.6333	1.2292	815.9	1568	.667	1.3671	1.2724	830.1	1211	.723
1900	1.8207-6	217.8	10.6522	28.386	652	1.0318	-1.0009	1.7378	1.2173	823.1	1757	.645	1.3719	1.2715	841.2	1238	.722
1950	1.7722-6	308.0	10.6991	28.357	663	1.0459	-1.0014	1.8758	1.2043	829.8	2014	.617	1.3763	1.2707	852.4	1266	.721
2000	1.7255-6	406.1	10.7487	28.318	674	1.0652	-1.0020	2.0556	1.1906	836.1	2361	.587	1.3805	1.2701	863.6	1292	.720
2050	1.6802-6	514.4	10.8022	28.264	685	1.0910	-1.0029	2.2861	1.1769	842.4	2826	.554	1.3845	1.2698	875.1	1319	.718
2100	1.6360-6	635.7	10.8607	28.191	695	1.1246	-1.0041	2.5754	1.1638	849.0	3438	.521	1.3882	1.2698	886.8	1346	.717
2150	1.5925-6	773.0	10.9253	28.095	705	1.1673	-1.0056	2.9302	1.1520	856.2	4227	.489	1.3917	1.2701	899.0	1374	.714
2200	1.5494-6	929.9	10.9974	27.971	715	1.2200	-1.0076	3.3546	1.1419	864.1	5219	.460	1.3950	1.2708	911.6	1402	.711
2250	1.5065-6	1109.7	11.0782	27.813	725	1.2833	-1.0101	3.8497	1.1335	873.1	6432	.434	1.3980	1.2720	925.0	1432	.708
2300	1.4634-6	1316.0	11.1688	27.619	734	1.3574	-1.0132	4.4140	1.1268	883.3	7871	.412	1.4010	1.2737	939.1	1464	.703
2350	1.4200-6	1552.2	11.2704	27.383	743	1.4422	-1.0168	5.0437	1.1216	894.6	9520	.394	1.4039	1.2760	954.2	1498	.697
2400	1.3762-6	1821.3	11.3837	27.103	752	1.5369	-1.0210	5.7325	1.1179	907.2	11339	.380	1.4067	1.2789	970.4	1535	.689
2450	1.3319-6	2126.2	11.5094	26.776	761	1.6398	-1.0257	6.4695	1.1153	921.1	13255	.371	1.4097	1.2825	987.8	1576	.680
2500	1.2871-6	2468.8	11.6478	26.404	769	1.7481	-1.0309	7.2361	1.1137	936.3	15162	.367	1.4127	1.2868	1006.5	1622	.670
2550	1.2420-6	2849.8	11.7987	25.988	777	1.8569	-1.0364	8.0008	1.1130	952.9	16920	.368	1.4160	1.2919	1026.6	1673	.658
2600	1.1968-6	3268.1	11.9611	25.533	786	1.9591	-1.0418	8.7161	1.1131	970.8	18371	.373	1.4195	1.2977	1048.2	1729	.645
2650	1.1520-6	3719.6	12.1331	25.049	794	2.0456	-1.0467	9.3191	1.1140	989.9	19358	.382	1.4232	1.3042	1071.0	1789	.632
2700	1.1081-6	4196.9	12.3115	24.550	802	2.1063	-1.0506	9.7397	1.1156	1010.0	19760	.395	1.4271	1.3112	1095.0	1852	.618
2750	1.0657-6	4689.4	12.4923	24.049	811	2.1331	-1.0531	9.9154	1.1180	1031.0	19523	.412	1.4311	1.3185	1119.6	1917	.605
2800	1.0256-6	5183.8	12.6704	23.564	819	2.1214	-1.0537	9.8109	1.1212	1052.5	18681	.430	1.4351	1.3260	1144.6	1981	.593
2850	9.8818-7	5665.9	12.8411	23.110	828	2.0724	-1.0525	9.4311	1.1253	1074.2	17354	.450	1.4390	1.3334	1169.3	2043	.583
2900	9.5382-7	6123.0	13.0001	22.698	837	1.9929	-1.0496	8.8210	1.1303	1095.8	15711	.470	1.4426	1.3403	1193.3	2102	.575
2950	9.2264-7	6545.4	13.1445	22.334	846	1.8925	-1.0455	8.0523	1.1364	1117.2	13930	.489	1.4460	1.3467	1216.1	2156	.568
3000	8.9458-7	6926.9	13.2728	22.022	856	1.7816	-1.0407	7.2040	1.1438	1138.2	12162	.507	1.4491	1.3524	1237.6	2207	.562

TABLE 24.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.032829; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8521-5	-1143.4	8.9793	28.448	395	1.0000	-1.0000	1.2106	1.3183	588.9	651	.734	1.2103	1.3184	588.9	651	.734
950	3.6493-5	-1082.5	9.0451	28.448	410	1.0000	-1.0000	1.2236	1.3138	604.0	685	.733	1.2231	1.3140	604.0	684	.733
1000	3.4669-5	-1021.0	9.1082	28.448	425	1.0000	-1.0000	1.2360	1.3097	618.7	717	.732	1.2352	1.3100	618.8	717	.732
1050	3.3018-5	-959.0	9.1688	28.448	439	1.0000	-1.0000	1.2475	1.3060	633.1	749	.732	1.2463	1.3064	633.2	748	.732
1100	3.1517-5	-896.3	9.2271	28.448	454	1.0000	-1.0000	1.2587	1.3024	647.1	781	.731	1.2569	1.3030	647.2	780	.731
1150	3.0147-5	-833.1	9.2833	28.448	467	1.0000	-1.0000	1.2697	1.2990	660.8	812	.731	1.2670	1.2998	661.0	810	.731
1200	2.8891-5	-769.3	9.3375	28.448	481	1.0000	-1.0000	1.2804	1.2958	674.1	843	.730	1.2767	1.2969	674.4	840	.730
1250	2.7735-5	-705.0	9.3900	28.448	494	1.0000	-1.0000	1.2910	1.2927	687.2	874	.730	1.2859	1.2941	687.6	871	.730
1300	2.6668-5	-640.2	9.4408	28.448	507	1.0001	-1.0000	1.3016	1.2896	700.0	905	.730	1.2946	1.2916	700.5	900	.730
1350	2.5680-5	-574.9	9.4902	28.448	520	1.0001	-1.0000	1.3122	1.2866	712.5	936	.729	1.3030	1.2892	713.2	930	.729
1400	2.4763-5	-509.0	9.5381	28.448	533	1.0002	-1.0000	1.3230	1.2837	724.7	968	.729	1.3110	1.2869	725.7	959	.729
1450	2.3909-5	-442.6	9.5847	28.447	546	1.0003	-1.0000	1.3343	1.2807	736.7	1000	.728	1.3185	1.2848	737.9	987	.729
1500	2.3112-5	-375.6	9.6301	28.447	558	1.0005	-1.0000	1.3462	1.2777	748.4	1033	.727	1.3258	1.2828	749.9	1016	.728
1550	2.2366-5	-307.9	9.6745	28.447	570	1.0008	-1.0000	1.3591	1.2745	759.9	1068	.726	1.3326	1.2810	761.8	1045	.728
1600	2.1666-5	-239.6	9.7179	28.446	582	1.0012	-1.0000	1.3734	1.2711	771.0	1104	.724	1.3391	1.2792	773.5	1073	.727
1650	2.1009-5	-170.6	9.7604	28.444	594	1.0018	-1.0000	1.3896	1.2675	781.9	1144	.722	1.3453	1.2776	785.0	1101	.726
1700	2.0389-5	-100.6	9.8021	28.442	606	1.0027	-1.0001	1.4086	1.2636	792.4	1187	.719	1.3512	1.2761	796.3	1129	.726
1750	1.9805-5	-29.6	9.8433	28.440	618	1.0040	-1.0001	1.4313	1.2591	802.6	1236	.716	1.3568	1.2746	807.5	1156	.725
1800	1.9252-5	42.6	9.8840	28.436	629	1.0058	-1.0001	1.4590	1.2541	812.4	1292	.711	1.3621	1.2733	818.6	1184	.724
1850	1.8728-5	116.4	9.9244	28.430	641	1.0084	-1.0002	1.4932	1.2483	821.8	1359	.704	1.3671	1.2721	829.6	1211	.723
1900	1.8231-5	192.1	9.9648	28.423	652	1.0119	-1.0003	1.5361	1.2417	830.7	1440	.696	1.3719	1.2710	840.5	1238	.723
1950	1.7756-5	270.2	10.0053	28.412	663	1.0168	-1.0005	1.5902	1.2342	839.2	1541	.685	1.3764	1.2700	851.3	1265	.722
2000	1.7304-5	351.3	10.0464	28.398	674	1.0234	-1.0007	1.6582	1.2258	847.2	1668	.670	1.3807	1.2691	862.1	1291	.721
2050	1.6870-5	436.3	10.0884	28.379	685	1.0323	-1.0010	1.7438	1.2166	854.8	1828	.653	1.3847	1.2684	872.8	1317	.720
2100	1.6454-5	526.0	10.1316	28.353	696	1.0439	-1.0014	1.8505	1.2067	862.0	2033	.633	1.3885	1.2677	883.6	1343	.719
2150	1.6052-5	621.7	10.1767	28.319	707	1.0589	-1.0019	1.9823	1.1964	869.0	2293	.611	1.3921	1.2673	894.4	1369	.718
2200	1.5662-5	724.8	10.2240	28.274	717	1.0780	-1.0026	2.1430	1.1860	875.9	2622	.586	1.3955	1.2670	905.3	1395	.717
2250	1.5284-5	836.6	10.2743	28.218	727	1.1018	-1.0035	2.3357	1.1759	883.0	3032	.560	1.3986	1.2669	916.5	1421	.716
2300	1.4913-5	958.9	10.3280	28.146	737	1.1308	-1.0047	2.5628	1.1665	890.2	3536	.534	1.4015	1.2671	927.8	1447	.714
2350	1.4550-5	1093.4	10.3859	28.057	747	1.1653	-1.0061	2.8251	1.1579	898.0	4148	.509	1.4043	1.2675	939.5	1474	.712
2400	1.4191-5	1242.0	10.4484	27.948	757	1.2057	-1.0077	3.1222	1.1505	906.3	4877	.485	1.4068	1.2682	951.6	1501	.710
2450	1.3836-5	1406.2	10.5161	27.817	767	1.2519	-1.0097	3.4525	1.1441	915.3	5727	.462	1.4092	1.2692	964.1	1529	.707
2500	1.3484-5	1587.7	10.5895	27.661	776	1.3038	-1.0121	3.8134	1.1389	925.1	6699	.442	1.4115	1.2706	977.1	1558	.703
2550	1.3133-5	1788.0	10.6688	27.480	785	1.3612	-1.0147	4.2018	1.1347	935.7	7789	.423	1.4136	1.2723	990.8	1589	.698
2600	1.2783-5	2008.3	10.7543	27.272	794	1.4235	-1.0177	4.6146	1.1314	947.0	8981	.408	1.4158	1.2744	1005.1	1622	.693
2650	1.2433-5	2249.8	10.8463	27.035	803	1.4904	-1.0211	5.0480	1.1290	959.2	10251	.395	1.4179	1.2770	1020.1	1657	.687
2700	1.2083-5	2513.4	10.9448	26.771	811	1.5611	-1.0247	5.4971	1.1273	972.3	11564	.386	1.4200	1.2799	1036.0	1695	.680
2750	1.1734-5	2799.7	11.0499	26.479	820	1.6341	-1.0287	5.9546	1.1263	986.2	12872	.379	1.4222	1.2833	1052.7	1736	.672
2800	1.1386-5	3108.8	11.1613	26.161	829	1.7078	-1.0328	6.4094	1.1259	1001.0	14120	.376	1.4245	1.2872	1070.2	1781	.663
2850	1.1040-5	3440.3	11.2786	25.819	837	1.7793	-1.0370	6.8463	1.1260	1016.6	15240	.376	1.4270	1.2914	1088.7	1828	.653
2900	1.0698-5	3792.8	11.4012	25.457	846	1.8455	-1.0411	7.2450	1.1267	1033.0	16167	.379	1.4296	1.2961	1108.0	1879	.643
2950	1.0360-5	4163.8	11.5280	25.079	854	1.9024	-1.0449	7.5818	1.1279	1050.3	16838	.385	1.4322	1.3012	1128.1	1933	.633
3000	1.0030-5	4549.6	11.6577	24.692	863	1.9460	-1.0481	7.8321	1.1296	1068.2	17206	.393	1.4350	1.3066	1148.9	1989	.622

TABLE 24.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.032829; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8521-4	-1143.4	8.3063	28.448	395	1.0000	-1.0000	1.2106	1.3183	588.9	651	.734	1.2103	1.3184	588.9	651	.734
950	3.6493-4	-1082.5	8.3721	28.448	410	1.0000	-1.0000	1.2236	1.3138	604.0	685	.733	1.2231	1.3140	604.0	684	.733
1000	3.4669-4	-1021.0	8.4352	28.448	425	1.0000	-1.0000	1.2360	1.3097	618.7	717	.732	1.2352	1.3100	618.8	717	.732
1050	3.3018-4	-959.0	8.4958	28.448	439	1.0000	-1.0000	1.2475	1.3060	633.1	749	.732	1.2463	1.3064	633.2	748	.732
1100	3.1517-4	-896.3	8.5541	28.448	454	1.0000	-1.0000	1.2587	1.3024	647.1	781	.731	1.2569	1.3030	647.2	780	.731
1150	3.0147-4	-833.1	8.6103	28.448	467	1.0000	-1.0000	1.2696	1.2990	660.8	812	.731	1.2670	1.2998	661.0	810	.731
1200	2.8891-4	-769.3	8.6645	28.448	481	1.0000	-1.0000	1.2802	1.2958	674.1	843	.730	1.2767	1.2969	674.4	840	.730
1250	2.7735-4	-705.1	8.7170	28.448	494	1.0000	-1.0000	1.2907	1.2927	687.2	874	.730	1.2859	1.2941	687.6	870	.730
1300	2.6668-4	-640.3	8.7678	28.448	507	1.0000	-1.0000	1.3010	1.2897	700.0	905	.730	1.2946	1.2916	700.5	900	.730
1350	2.5680-4	-575.0	8.8171	28.448	520	1.0001	-1.0000	1.3113	1.2868	712.6	936	.729	1.3030	1.2892	713.2	930	.729
1400	2.4763-4	-509.1	8.8650	28.448	533	1.0001	-1.0000	1.3216	1.2840	724.8	967	.729	1.3110	1.2869	725.7	959	.729
1450	2.3909-4	-442.8	8.9116	28.448	546	1.0002	-1.0000	1.3321	1.2812	736.9	998	.728	1.3185	1.2848	737.9	987	.729
1500	2.3112-4	-375.9	8.9569	28.448	558	1.0002	-1.0000	1.3427	1.2784	748.6	1030	.728	1.3258	1.2828	749.9	1016	.728
1550	2.2366-4	-308.5	9.0011	28.447	570	1.0004	-1.0000	1.3538	1.2756	760.2	1062	.727	1.3326	1.2809	761.8	1045	.728
1600	2.1667-4	-240.5	9.0443	28.447	582	1.0006	-1.0000	1.3653	1.2728	771.5	1095	.726	1.3391	1.2792	773.4	1073	.727
1650	2.1010-4	-172.0	9.0865	28.446	594	1.0009	-1.0000	1.3777	1.2698	782.6	1130	.725	1.3453	1.2776	784.9	1101	.726
1700	2.0391-4	-102.8	9.1278	28.445	606	1.0012	-1.0000	1.3911	1.2668	793.4	1166	.723	1.3512	1.2760	796.3	1129	.726
1750	1.9808-4	-32.8	9.1683	28.444	618	1.0018	-1.0000	1.4058	1.2636	804.0	1204	.721	1.3568	1.2746	807.5	1156	.725
1800	1.9257-4	37.9	9.2082	28.442	629	1.0025	-1.0001	1.4224	1.2602	814.3	1245	.719	1.3621	1.2733	818.5	1184	.724
1850	1.8735-4	109.4	9.2474	28.440	641	1.0035	-1.0001	1.4413	1.2566	824.4	1289	.717	1.3672	1.2720	829.4	1211	.724
1900	1.8240-4	182.0	9.2861	28.437	652	1.0049	-1.0001	1.4631	1.2526	834.2	1338	.713	1.3719	1.2708	840.2	1238	.723
1950	1.7769-4	255.8	9.3244	28.433	663	1.0067	-1.0002	1.4888	1.2482	843.7	1393	.709	1.3765	1.2698	850.9	1264	.722
2000	1.7322-4	331.0	9.3625	28.427	675	1.0092	-1.0003	1.5192	1.2435	852.9	1456	.704	1.3808	1.2688	861.5	1291	.721
2050	1.6895-4	407.8	9.4004	28.420	685	1.0123	-1.0004	1.5555	1.2382	861.7	1529	.697	1.3848	1.2678	872.0	1317	.721
2100	1.6487-4	486.7	9.4384	28.410	696	1.0165	-1.0005	1.5990	1.2324	870.3	1616	.689	1.3887	1.2670	882.4	1343	.720
2150	1.6096-4	567.9	9.4767	28.397	707	1.0218	-1.0007	1.6511	1.2262	878.6	1718	.679	1.3923	1.2663	892.8	1368	.720
2200	1.5721-4	651.9	9.5153	28.381	718	1.0285	-1.0009	1.7134	1.2194	886.5	1842	.668	1.3958	1.2656	903.2	1393	.719
2250	1.5361-4	739.4	9.5546	28.360	728	1.0370	-1.0012	1.7876	1.2123	894.2	1990	.654	1.3990	1.2651	913.5	1419	.718
2300	1.5013-4	830.9	9.5948	28.334	739	1.0475	-1.0016	1.8754	1.2049	901.8	2168	.639	1.4021	1.2647	923.9	1444	.717
2350	1.4676-4	927.2	9.6362	28.301	749	1.0603	-1.0021	1.9783	1.1973	909.2	2382	.622	1.4049	1.2644	934.3	1469	.716
2400	1.4350-4	1029.0	9.6791	28.261	759	1.0758	-1.0028	2.0976	1.1898	916.6	2638	.604	1.4076	1.2642	944.8	1494	.715
2450	1.4033-4	1137.3	9.7237	28.211	769	1.0941	-1.0035	2.2341	1.1826	924.1	2941	.584	1.4101	1.2642	955.4	1519	.714
2500	1.3723-4	1252.7	9.7704	28.152	779	1.1154	-1.0044	2.3880	1.1757	931.7	3296	.564	1.4125	1.2644	966.2	1544	.713
2550	1.3420-4	1376.3	9.8194	28.081	789	1.1398	-1.0055	2.5591	1.1693	939.6	3708	.544	1.4147	1.2647	977.2	1569	.711
2600	1.3123-4	1508.9	9.8708	27.998	798	1.1674	-1.0067	2.7463	1.1636	947.9	4180	.524	1.4167	1.2652	988.4	1595	.709
2650	1.2831-4	1651.2	9.9250	27.901	808	1.1980	-1.0082	2.9482	1.1586	956.5	4714	.505	1.4186	1.2659	999.9	1622	.707
2700	1.2543-4	1804.0	9.9821	27.789	817	1.2314	-1.0098	3.1629	1.1543	965.6	5311	.486	1.4204	1.2669	1011.6	1649	.704
2750	1.2259-4	1967.7	10.0422	27.662	826	1.2676	-1.0116	3.3884	1.1507	975.2	5969	.469	1.4221	1.2680	1023.8	1676	.701
2800	1.1978-4	2142.9	10.1054	27.520	835	1.3062	-1.0136	3.6230	1.1477	985.3	6685	.453	1.4237	1.2694	1036.3	1705	.697
2850	1.1700-4	2330.1	10.1716	27.361	844	1.3470	-1.0158	3.8649	1.1453	996.0	7454	.438	1.4253	1.2710	1049.2	1735	.694
2900	1.1425-4	2529.5	10.2410	27.186	853	1.3899	-1.0181	4.1127	1.1435	1007.1	8266	.424	1.4268	1.2728	1062.5	1766	.689
2950	1.1152-4	2741.5	10.3134	26.996	862	1.4345	-1.0207	4.3648	1.1422	1018.7	9110	.413	1.4284	1.2749	1076.3	1798	.684
3000	1.0882-4	2966.1	10.3889	26.789	871	1.4806	-1.0234	4.6195	1.1414	1030.9	9971	.403	1.4299	1.2772	1090.5	1833	.679

TABLE 24.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.032829; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8521-3	-1143.4	7.6334	28.448	395	1.0000	-1.0000	1.2106	1.3183	588.9	651	.734	1.2103	1.3184	588.9	651	.734
950	3.6493-3	-1082.5	7.6992	28.448	410	1.0000	-1.0000	1.2236	1.3138	604.0	685	.733	1.2231	1.3140	604.0	684	.733
1000	3.4669-3	-1021.0	7.7622	28.448	425	1.0000	-1.0000	1.2360	1.3097	618.7	717	.732	1.2352	1.3100	618.8	717	.732
1050	3.3018-3	-958.9	7.8228	28.448	439	1.0000	-1.0000	1.2475	1.3060	633.1	749	.732	1.2463	1.3063	633.2	748	.732
1100	3.1517-3	-896.3	7.8811	28.448	454	1.0000	-1.0000	1.2587	1.3024	647.1	781	.731	1.2569	1.3030	647.2	780	.731
1150	3.0147-3	-833.1	7.9373	28.448	467	1.0000	-1.0000	1.2696	1.2991	660.8	812	.731	1.2670	1.2998	661.0	810	.731
1200	2.8891-3	-769.3	7.9916	28.448	481	1.0000	-1.0000	1.2802	1.2958	674.1	843	.730	1.2767	1.2969	674.4	840	.730
1250	2.7735-3	-705.1	8.0440	28.448	494	1.0000	-1.0000	1.2905	1.2928	687.2	874	.730	1.2859	1.2941	687.6	870	.730
1300	2.6668-3	-640.3	8.0949	28.448	507	1.0000	-1.0000	1.3008	1.2898	700.0	904	.730	1.2946	1.2916	700.5	900	.730
1350	2.5681-3	-575.0	8.1441	28.448	520	1.0000	-1.0000	1.3109	1.2869	712.6	935	.729	1.3030	1.2892	713.2	930	.729
1400	2.4763-3	-509.2	8.1920	28.448	533	1.0000	-1.0000	1.3209	1.2842	724.9	966	.729	1.3110	1.2869	725.6	959	.729
1450	2.3909-3	-442.9	8.2385	28.448	546	1.0001	-1.0000	1.3309	1.2814	736.9	997	.728	1.3185	1.2848	737.9	987	.729
1500	2.3112-3	-376.1	8.2838	28.448	558	1.0001	-1.0000	1.3410	1.2788	748.7	1028	.728	1.3258	1.2828	749.9	1016	.728
1550	2.2367-3	-308.8	8.3279	28.448	570	1.0002	-1.0000	1.3512	1.2761	760.3	1059	.727	1.3326	1.2809	761.8	1045	.728
1600	2.1668-3	-241.0	8.3710	28.448	582	1.0003	-1.0000	1.3615	1.2735	771.7	1091	.726	1.3391	1.2792	773.4	1073	.727
1650	2.1011-3	-172.6	8.4131	28.447	594	1.0004	-1.0000	1.3722	1.2709	782.9	1124	.726	1.3453	1.2775	784.9	1101	.726
1700	2.0392-3	-103.8	8.4542	28.447	606	1.0006	-1.0000	1.3832	1.2683	793.8	1157	.725	1.3512	1.2760	796.3	1129	.726
1750	1.9809-3	-34.3	8.4945	28.446	618	1.0008	-1.0000	1.3948	1.2656	804.6	1191	.724	1.3568	1.2746	807.4	1156	.725
1800	1.9259-3	35.7	8.5339	28.445	629	1.0012	-1.0000	1.4070	1.2629	815.1	1226	.722	1.3621	1.2732	818.5	1184	.724
1850	1.8737-3	106.4	8.5726	28.444	641	1.0016	-1.0000	1.4201	1.2602	825.5	1263	.721	1.3672	1.2719	829.3	1211	.724
1900	1.8243-3	177.8	8.6107	28.443	652	1.0022	-1.0001	1.4342	1.2573	835.7	1301	.719	1.3720	1.2708	840.1	1238	.723
1950	1.7774-3	249.8	8.6482	28.441	663	1.0029	-1.0001	1.4497	1.2543	845.6	1341	.717	1.3765	1.2696	850.7	1264	.722
2000	1.7329-3	322.7	8.6851	28.439	675	1.0039	-1.0001	1.4668	1.2512	855.3	1384	.715	1.3808	1.2686	861.3	1291	.722
2050	1.6904-3	396.6	8.7215	28.435	686	1.0051	-1.0002	1.4859	1.2479	864.9	1430	.712	1.3849	1.2676	871.7	1317	.721
2100	1.6499-3	471.4	8.7576	28.431	696	1.0067	-1.0002	1.5075	1.2444	874.2	1480	.709	1.3888	1.2667	882.0	1342	.721
2150	1.6113-3	547.4	8.7933	28.426	707	1.0087	-1.0003	1.5319	1.2407	883.3	1536	.706	1.3924	1.2659	892.2	1368	.720
2200	1.5743-3	624.6	8.8289	28.420	718	1.0112	-1.0004	1.5598	1.2367	892.2	1597	.701	1.3959	1.2652	902.4	1393	.719
2250	1.5389-3	703.4	8.8643	28.412	729	1.0143	-1.0005	1.5917	1.2326	900.9	1667	.696	1.3992	1.2645	912.5	1418	.719
2300	1.5049-3	783.9	8.8996	28.402	739	1.0181	-1.0006	1.6283	1.2281	909.3	1746	.689	1.4023	1.2638	922.5	1443	.718
2350	1.4722-3	866.3	8.9351	28.389	749	1.0228	-1.0008	1.6703	1.2234	917.6	1835	.682	1.4053	1.2633	932.4	1468	.718
2400	1.4408-3	951.0	8.9708	28.374	760	1.0284	-1.0010	1.7184	1.2185	925.7	1938	.674	1.4080	1.2628	942.4	1492	.717
2450	1.4104-3	1038.3	9.0067	28.355	770	1.0351	-1.0013	1.7732	1.2135	933.7	2055	.664	1.4107	1.2624	952.3	1517	.716
2500	1.3811-3	1128.5	9.0432	28.333	780	1.0431	-1.0016	1.8353	1.2083	941.5	2191	.654	1.4132	1.2621	962.2	1541	.715
2550	1.3528-3	1221.9	9.0802	28.306	790	1.0525	-1.0020	1.9054	1.2030	949.3	2346	.642	1.4155	1.2618	972.2	1566	.714
2600	1.3253-3	1319.1	9.1179	28.275	800	1.0634	-1.0025	1.9837	1.1978	957.0	2523	.629	1.4177	1.2617	982.2	1590	.713
2650	1.2986-3	1420.5	9.1565	28.237	810	1.0759	-1.0030	2.0705	1.1927	964.7	2724	.616	1.4197	1.2617	992.2	1615	.712
2700	1.2725-3	1526.3	9.1961	28.193	819	1.0900	-1.0037	2.1657	1.1878	972.5	2951	.601	1.4217	1.2617	1002.3	1639	.711
2750	1.2472-3	1637.2	9.2368	28.143	829	1.1058	-1.0044	2.2689	1.1831	980.4	3205	.587	1.4235	1.2619	1012.5	1663	.709
2800	1.2224-3	1753.3	9.2786	28.085	838	1.1233	-1.0053	2.3795	1.1788	988.5	3489	.572	1.4252	1.2622	1022.9	1688	.708
2850	1.1981-3	1875.2	9.3218	28.019	848	1.1423	-1.0062	2.4967	1.1749	996.8	3802	.557	1.4268	1.2626	1033.3	1712	.706
2900	1.1743-3	2003.1	9.3663	27.945	857	1.1628	-1.0073	2.6195	1.1713	1005.3	4144	.542	1.4283	1.2631	1044.0	1737	.705
2950	1.1510-3	2137.2	9.4121	27.862	866	1.1846	-1.0085	2.7467	1.1682	1014.1	4517	.527	1.4297	1.2638	1054.8	1762	.703
3000	1.1281-3	2277.8	9.4594	27.771	875	1.2077	-1.0097	2.8773	1.1656	1023.2	4918	.512	1.4311	1.2646	1065.7	1788	.701

TABLE 24.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.032829; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9260-2	-1143.4	7.1630	28.448	395	1.0000	-1.0000	1.2106	1.3182	588.9	651	.734	1.2103	1.3184	588.9	651	.734
950	1.8247-2	-1082.5	7.2288	28.448	410	1.0000	-1.0000	1.2236	1.3138	604.0	685	.733	1.2231	1.3140	604.0	684	.733
1000	1.7334-2	-1021.0	7.2919	28.448	425	1.0000	-1.0000	1.2360	1.3097	618.7	717	.732	1.2352	1.3100	618.8	717	.732
1050	1.6509-2	-958.9	7.3524	28.448	439	1.0000	-1.0000	1.2475	1.3059	633.1	749	.732	1.2463	1.3063	633.2	748	.732
1100	1.5759-2	-896.3	7.4107	28.448	454	1.0000	-1.0000	1.2587	1.3024	647.1	781	.731	1.2569	1.3030	647.2	780	.731
1150	1.5073-2	-833.1	7.4669	28.448	467	1.0000	-1.0000	1.2696	1.2990	660.8	812	.731	1.2670	1.2998	661.0	810	.731
1200	1.4445-2	-769.3	7.5212	28.448	481	1.0000	-1.0000	1.2801	1.2958	674.1	843	.730	1.2767	1.2969	674.4	840	.730
1250	1.3868-2	-705.1	7.5737	28.448	494	1.0000	-1.0000	1.2905	1.2928	687.2	874	.730	1.2859	1.2941	687.6	870	.730
1300	1.3334-2	-640.3	7.6245	28.448	507	1.0000	-1.0000	1.3007	1.2898	700.0	904	.730	1.2946	1.2916	700.5	900	.730
1350	1.2840-2	-575.0	7.6738	28.448	520	1.0000	-1.0000	1.3107	1.2870	712.6	935	.729	1.3030	1.2892	713.2	930	.729
1400	1.2382-2	-509.2	7.7216	28.448	533	1.0000	-1.0000	1.3206	1.2842	724.9	966	.729	1.3110	1.2869	725.6	959	.729
1450	1.1955-2	-442.9	7.7681	28.448	546	1.0000	-1.0000	1.3305	1.2815	736.9	996	.729	1.3185	1.2848	737.9	987	.729
1500	1.1556-2	-376.2	7.8134	28.448	558	1.0001	-1.0000	1.3403	1.2789	748.8	1027	.728	1.3258	1.2828	749.9	1016	.728
1550	1.1183-2	-308.9	7.8575	28.448	570	1.0001	-1.0000	1.3502	1.2763	760.4	1058	.727	1.3326	1.2809	761.8	1045	.728
1600	1.0834-2	-241.2	7.9005	28.448	582	1.0002	-1.0000	1.3601	1.2738	771.8	1090	.727	1.3391	1.2792	773.4	1073	.727
1650	1.0506-2	-172.9	7.9425	28.448	594	1.0002	-1.0000	1.3701	1.2713	783.0	1122	.726	1.3453	1.2775	784.9	1101	.726
1700	1.0197-2	-104.1	7.9836	28.448	606	1.0004	-1.0000	1.3804	1.2688	794.0	1154	.725	1.3512	1.2760	796.2	1129	.726
1750	9.9051-3	-34.9	8.0237	28.447	618	1.0005	-1.0000	1.3908	1.2664	804.8	1187	.724	1.3568	1.2746	807.4	1156	.725
1800	9.6298-3	35.0	8.0631	28.447	629	1.0007	-1.0000	1.4016	1.2639	815.4	1220	.723	1.3621	1.2732	818.4	1184	.724
1850	9.3693-3	105.3	8.1016	28.446	641	1.0009	-1.0000	1.4128	1.2614	825.9	1254	.722	1.3672	1.2719	829.3	1211	.724
1900	9.1225-3	176.2	8.1395	28.445	652	1.0013	-1.0000	1.4245	1.2589	836.2	1289	.721	1.3720	1.2707	840.1	1238	.723
1950	8.8882-3	247.8	8.1766	28.444	663	1.0017	-1.0001	1.4368	1.2564	846.3	1325	.720	1.3765	1.2696	850.7	1264	.722
2000	8.6656-3	319.9	8.2132	28.443	675	1.0022	-1.0001	1.4499	1.2538	856.2	1362	.718	1.3808	1.2686	861.2	1291	.722
2050	8.4537-3	392.8	8.2491	28.441	686	1.0029	-1.0001	1.4640	1.2512	865.9	1401	.717	1.3849	1.2676	871.6	1317	.721
2100	8.2517-3	466.4	8.2846	28.439	697	1.0038	-1.0001	1.4792	1.2485	875.5	1441	.715	1.3888	1.2667	881.9	1342	.721
2150	8.0590-3	540.7	8.3196	28.436	707	1.0048	-1.0002	1.4957	1.2457	884.9	1484	.713	1.3925	1.2658	892.0	1368	.720
2200	7.8749-3	616.0	8.3542	28.432	718	1.0061	-1.0002	1.5138	1.2428	894.2	1530	.710	1.3960	1.2650	902.1	1393	.720
2250	7.6987-3	692.1	8.3884	28.428	729	1.0077	-1.0003	1.5338	1.2397	903.2	1580	.708	1.3993	1.2643	912.1	1418	.719
2300	7.5299-3	769.4	8.4224	28.423	739	1.0097	-1.0003	1.5559	1.2366	912.1	1633	.704	1.4024	1.2636	922.0	1443	.718
2350	7.3680-3	847.8	8.4561	28.416	750	1.0120	-1.0004	1.5805	1.2333	920.9	1692	.700	1.4054	1.2629	931.9	1468	.718
2400	7.2125-3	927.5	8.4896	28.408	760	1.0148	-1.0005	1.6079	1.2299	929.5	1756	.696	1.4082	1.2624	941.7	1492	.717
2450	7.0629-3	1008.6	8.5231	28.398	770	1.0182	-1.0007	1.6385	1.2264	937.9	1826	.691	1.4109	1.2619	951.4	1516	.717
2500	6.9188-3	1091.4	8.5565	28.387	780	1.0222	-1.0008	1.6727	1.2227	946.2	1905	.685	1.4134	1.2614	961.1	1540	.716
2550	6.7798-3	1175.9	8.5900	28.373	790	1.0269	-1.0010	1.7107	1.2189	954.4	1993	.679	1.4158	1.2610	970.7	1565	.715
2600	6.6457-3	1262.5	8.6237	28.357	800	1.0323	-1.0013	1.7530	1.2151	962.4	2090	.671	1.4180	1.2607	980.3	1589	.714
2650	6.5159-3	1351.3	8.6575	28.338	810	1.0387	-1.0015	1.7998	1.2111	970.4	2199	.663	1.4202	1.2604	989.9	1613	.713
2700	6.3902-3	1442.6	8.6916	28.315	820	1.0459	-1.0019	1.8514	1.2072	978.3	2320	.655	1.4222	1.2602	999.5	1637	.712
2750	6.2682-3	1536.5	8.7261	28.289	830	1.0542	-1.0022	1.9079	1.2033	986.2	2454	.645	1.4241	1.2600	1009.2	1661	.711
2800	6.1498-3	1633.4	8.7610	28.259	840	1.0634	-1.0027	1.9694	1.1994	994.0	2603	.635	1.4260	1.2600	1018.8	1685	.710
2850	6.0346-3	1733.6	8.7964	28.225	849	1.0738	-1.0032	2.0357	1.1957	1001.9	2768	.625	1.4277	1.2600	1028.5	1709	.709
2900	5.9224-3	1837.1	8.8325	28.186	859	1.0852	-1.0038	2.1066	1.1921	1009.8	2948	.613	1.4293	1.2601	1038.2	1733	.708
2950	5.8129-3	1944.3	8.8691	28.142	868	1.0976	-1.0044	2.1819	1.1887	1017.8	3145	.602	1.4308	1.2602	1048.0	1756	.707
3000	5.7060-3	2055.3	8.9064	28.093	877	1.1110	-1.0051	2.2609	1.1855	1026.0	3360	.590	1.4323	1.2605	1057.9	1780	.706

TABLE 24C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.032829; EQUIV.RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO W/CM K	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S			K
					PRESSURE = 0.01 ATM											
200	1.945-5	-2120.9	7.2026	28.448	1.0691	1.811-5	29.722	131	1.000	-1.000	0.9903	1.3937	279	177	.734	200
220	1.764-5	-2096.3	7.3197	28.448	1.5742	1.645-5	29.694	142	1.000	-1.000	0.9924	1.3931	293	193	.731	220
240	1.578-5	-2035.4	7.5819	28.448	5.8949	1.493-5	29.411	150	1.000	-1.000	1.0063	1.3907	307	205	.735	240
					PRESSURE = 0.10 ATM											
200	1.945-4	-2121.2	6.6018	28.448	1.0338	1.811-4	29.724	131	1.000	-1.000	0.9902	1.3937	279	177	.734	200
220	1.768-4	-2100.1	6.7023	28.448	1.0938	1.646-4	29.721	142	1.000	-1.000	0.9912	1.3932	293	193	.730	220
240	1.617-4	-2075.3	6.8100	28.448	1.5133	1.508-4	29.693	153	1.000	-1.000	0.9936	1.3924	306	208	.727	240
260	1.468-4	-2027.0	7.0020	28.448	3.9771	1.383-4	29.499	161	1.000	-1.000	1.0039	1.3903	319	222	.729	260
280	1.254-4	-1861.6	7.6107	28.448	12.5985	1.244-4	28.583	163	1.000	-1.000	1.0488	1.3838	336	228	.750	280
					PRESSURE = 1.00 ATM											
200	1.945-3	-2121.2	6.0021	28.448	1.0303	1.811-3	29.724	131	1.000	-1.000	0.9902	1.3937	279	177	.734	200
220	1.768-3	-2100.4	6.1009	28.448	1.0460	1.647-3	29.724	142	1.000	-1.000	0.9910	1.3932	293	193	.730	220
240	1.621-3	-2079.1	6.1936	28.448	1.0980	1.509-3	29.721	153	1.000	-1.000	0.9924	1.3926	306	209	.726	240
260	1.493-3	-2055.3	6.2888	28.448	1.3454	1.392-3	29.702	163	1.000	-1.000	0.9948	1.3916	318	224	.724	260
280	1.376-3	-1999.2	6.4955	28.448	2.1615	1.289-3	29.610	172	1.000	-1.000	1.0009	1.3900	331	238	.725	280
298	1.264-3	-1946.6	6.6768	28.448	3.8968	1.200-3	29.360	179	1.000	-1.000	1.0143	1.3873	342	249	.730	298
300	1.252-3	-1939.1	6.7018	28.448	4.1810	1.191-3	29.318	180	1.000	-1.000	1.0165	1.3869	344	250	.731	300
320	1.090-3	-1808.7	7.1208	28.448	9.8531	1.086-3	28.514	182	1.000	-1.000	1.0574	1.3808	359	256	.750	320
					PRESSURE = 10.00 ATM											
200	1.943-2	-2121.2	5.4025	28.448	1.0300	1.811-2	29.724	131	1.000	-1.000	0.9902	1.3937	279	177	.734	200
220	1.766-2	-2100.5	5.5011	28.448	1.0412	1.647-2	29.724	142	1.000	-1.000	0.9910	1.3932	293	193	.730	220
240	1.619-2	-2079.5	5.5923	28.448	1.0567	1.509-2	29.724	153	1.000	-1.000	0.9922	1.3926	306	209	.726	240
260	1.495-2	-2058.1	5.6781	28.448	1.0922	1.393-2	29.722	163	1.000	-1.000	0.9939	1.3917	318	224	.724	260
280	1.387-2	-2011.6	5.8491	28.448	1.3100	1.293-2	29.713	173	1.000	-1.000	0.9962	1.3906	330	239	.722	280
298	1.300-2	-1986.6	5.9357	28.448	1.4705	1.213-2	29.688	182	1.000	-1.000	0.9994	1.3893	341	252	.722	298
300	1.291-2	-1983.8	5.9449	28.448	1.4956	1.206-2	29.684	183	1.000	-1.000	0.9998	1.3892	342	253	.722	300
320	1.202-2	-1950.2	6.0534	28.448	1.9272	1.127-2	29.603	192	1.000	-1.000	1.0061	1.3873	353	266	.724	320
340	1.113-2	-1903.7	6.1939	28.448	2.8194	1.054-2	29.413	199	1.000	-1.000	1.0177	1.3846	365	278	.729	340
360	1.015-2	-1831.8	6.3990	28.448	4.5620	9.823-3	29.016	205	1.000	-1.000	1.0396	1.3805	377	288	.738	360
380	9.123-3	-1735.2	6.6608	28.448	1.0710	9.123-3	28.448	209	1.000	-1.000	1.0710	1.3753	391	298	.750	380
					PRESSURE = 50.00 ATM											
200	9.657-2	-2121.2	4.9833	28.448	1.0299	9.056-2	29.724	131	1.000	-1.000	0.9902	1.3937	279	177	.734	200
220	8.785-2	-2100.5	5.0820	28.448	1.0408	8.233-2	29.724	142	1.000	-1.000	0.9910	1.3932	293	193	.730	220
240	8.057-2	-2079.6	5.1731	28.448	1.0530	7.547-2	29.724	153	1.000	-1.000	0.9922	1.3926	306	209	.726	240
260	7.440-2	-2058.3	5.2580	28.448	1.0697	6.966-2	29.724	163	1.000	-1.000	0.9938	1.3917	318	224	.724	260
280	6.914-2	-2012.7	5.4259	28.448	1.2357	6.468-2	29.722	173	1.000	-1.000	0.9958	1.3906	330	239	.722	280
298	6.492-2	-1990.0	5.5044	28.448	1.2679	6.073-2	29.717	182	1.000	-1.000	0.9981	1.3895	340	252	.721	298
300	6.452-2	-1987.7	5.5122	28.448	1.2730	6.036-2	29.716	183	1.000	-1.000	0.9984	1.3894	341	254	.721	300
320	6.042-2	-1961.5	5.5968	28.448	1.3589	5.655-2	29.700	193	1.000	-1.000	1.0017	1.3879	353	267	.721	320
340	5.670-2	-1932.8	5.6837	28.448	1.5287	5.316-2	29.662	201	1.000	-1.000	1.0063	1.3861	363	280	.723	340
360	5.321-2	-1899.5	5.7789	28.448	1.8297	5.007-2	29.583	210	1.000	-1.000	1.0131	1.3839	374	293	.725	360
380	4.978-2	-1858.3	5.8900	28.448	2.3238	4.720-2	29.433	217	1.000	-1.000	1.0235	1.3812	385	305	.728	380
400	4.626-2	-1804.6	6.0274	28.448	3.0977	4.444-2	29.174	224	1.000	-1.000	1.0395	1.3777	396	317	.734	400
420	4.246-2	-1731.6	6.2054	28.448	4.2917	4.172-2	28.758	228	1.000	-1.000	1.0638	1.3732	408	328	.742	420

TABLE 25A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.049244; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.4418;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .09545; H2O= .13899; N2= .70947; O2= .04758; AR= .00851

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7331-3	8.6653-2	-2606.7	7.9986	7.3255	6.6524	5.9793	5.5088	1.0577	1.3820	284.2	115	154	.7860	200
210	1.6505-3	8.2527-2	-2596.1	8.0502	7.3771	6.7040	6.0309	5.5604	1.0586	1.3815	291.2	120	163	.7815	210
220	1.5755-3	7.8775-2	-2585.5	8.0995	7.4264	6.7533	6.0802	5.6097	1.0596	1.3810	298.0	126	171	.7775	220
230	1.5070-3	7.5350-2	-2574.9	8.1466	7.4735	6.8004	6.1273	5.6568	1.0608	1.3804	304.7	131	180	.7739	230
240	1.4442-3	7.2211-2	-2564.3	8.1918	7.5187	6.8456	6.1725	5.7020	1.0620	1.3798	311.1	136	188	.7709	240
250	1.3864-3	6.9322-2	-2553.7	8.2352	7.5621	6.8890	6.2158	5.7454	1.0633	1.3792	317.5	142	196	.7683	250
260	1.3331-3	6.6656-2	-2543.1	8.2769	7.6038	6.9307	6.2576	5.7871	1.0647	1.3785	323.7	147	204	.7661	260
270	1.2837-3	6.4187-2	-2532.4	8.3171	7.6440	6.9709	6.2978	5.8273	1.0662	1.3777	329.8	152	212	.7643	270
280	1.2379-3	6.1895-2	-2521.7	8.3559	7.6828	7.0097	6.3366	5.8661	1.0678	1.3770	335.7	157	220	.7629	280
290	1.1952-3	5.9761-2	-2511.1	8.3934	7.7203	7.0472	6.3741	5.9036	1.0694	1.3762	341.6	162	227	.7618	290
298	1.1625-3	5.8127-2	-2502.3	8.4231	7.7500	7.0769	6.4037	5.9333	1.0708	1.3755	346.2	166	233	.7612	298
300	1.1554-3	5.7769-2	-2500.3	8.4297	7.7566	7.0835	6.4104	5.9399	1.0711	1.3754	347.3	167	235	.7610	300
310	1.1181-3	5.5905-2	-2489.6	8.4649	7.7918	7.1186	6.4455	5.9750	1.0729	1.3745	352.9	172	242	.7609	310
320	1.0832-3	5.4158-2	-2478.9	8.4990	7.8258	7.1527	6.4796	6.0091	1.0748	1.3736	358.5	176	249	.7609	320
330	1.0503-3	5.2517-2	-2468.1	8.5321	7.8590	7.1858	6.5127	6.0422	1.0768	1.3727	363.9	181	256	.7610	330
340	1.0194-3	5.0972-2	-2457.4	8.5642	7.8911	7.2180	6.5449	6.0744	1.0788	1.3717	369.2	186	263	.7612	340
350	9.9032-4	4.9516-2	-2446.6	8.5955	7.9224	7.2493	6.5762	6.1057	1.0808	1.3707	374.5	191	270	.7612	350
360	9.6281-4	4.8140-2	-2435.7	8.6260	7.9529	7.2798	6.6067	6.1362	1.0830	1.3697	379.7	195	278	.7606	360
370	9.3679-4	4.6839-2	-2424.9	8.6557	7.9826	7.3095	6.6364	6.1659	1.0852	1.3687	384.8	200	285	.7598	370
380	9.1214-4	4.5607-2	-2414.0	8.6847	8.0116	7.3385	6.6653	6.1949	1.0874	1.3677	389.8	204	292	.7590	380
390	8.8875-4	4.4437-2	-2403.1	8.7130	8.0399	7.3667	6.6936	6.2231	1.0897	1.3666	394.7	209	300	.7581	390
400	8.6653-4	4.3326-2	-2392.2	8.7406	8.0675	7.3944	6.7212	6.2508	1.0921	1.3655	399.6	213	307	.7572	400
410	8.4539-4	4.2270-2	-2381.3	8.7676	8.0945	7.4214	6.7482	6.2778	1.0945	1.3644	404.4	217	314	.7568	410
420	8.2527-4	4.1263-2	-2370.3	8.7940	8.1209	7.4478	6.7746	6.3042	1.0970	1.3633	409.1	222	321	.7564	420
430	8.0607-4	4.0304-2	-2359.4	8.8198	8.1467	7.4736	6.8005	6.3300	1.0995	1.3622	413.8	226	328	.7562	430
440	7.8775-4	3.9388-2	-2348.4	8.8451	8.1720	7.4989	6.8258	6.3553	1.1020	1.3610	418.4	230	335	.7560	440
450	7.7025-4	3.8512-2	-2337.3	8.8699	8.1968	7.5237	6.8506	6.3801	1.1046	1.3599	423.0	234	342	.7559	450
460	7.5350-4	3.7675-2	-2326.3	8.8942	8.2211	7.5480	6.8749	6.4044	1.1073	1.3587	427.4	238	349	.7558	460
470	7.3747-4	3.6874-2	-2315.2	8.9181	8.2450	7.5718	6.8987	6.4282	1.1100	1.3575	431.9	242	356	.7558	470
480	7.2211-4	3.6105-2	-2304.1	8.9415	8.2684	7.5952	6.9221	6.4516	1.1127	1.3564	436.3	246	362	.7558	480
490	7.0737-4	3.5369-2	-2292.9	8.9644	8.2913	7.6182	6.9451	6.4746	1.1154	1.3552	440.6	250	369	.7559	490
500	6.9322-4	3.4661-2	-2281.8	8.9870	8.3139	7.6408	6.9677	6.4972	1.1182	1.3540	444.9	254	376	.7560	500
510	6.7963-4	3.3982-2	-2270.6	9.0092	8.3361	7.6630	6.9898	6.5193	1.1210	1.3528	449.1	258	383	.7557	510
520	6.6656-4	3.3328-2	-2259.3	9.0310	8.3579	7.6847	7.0116	6.5411	1.1239	1.3516	453.3	262	390	.7555	520
530	6.5398-4	3.2699-2	-2248.1	9.0524	8.3793	7.7062	7.0331	6.5626	1.1267	1.3503	457.4	266	397	.7552	530
540	6.4187-4	3.2094-2	-2236.8	9.0735	8.4004	7.7273	7.0542	6.5837	1.1296	1.3491	461.5	270	403	.7549	540
550	6.3020-4	3.1510-2	-2225.5	9.0943	8.4211	7.7480	7.0749	6.6044	1.1326	1.3479	465.5	273	410	.7545	550
560	6.1895-4	3.0947-2	-2214.2	9.1147	8.4416	7.7685	7.0953	6.6249	1.1355	1.3467	469.5	277	417	.7542	560
570	6.0809-4	3.0405-2	-2202.8	9.1348	8.4617	7.7886	7.1155	6.6450	1.1385	1.3455	473.5	281	424	.7538	570
580	5.9761-4	2.9880-2	-2191.4	9.1546	8.4815	7.8084	7.1353	6.6648	1.1415	1.3443	477.4	285	431	.7534	580
590	5.8748-4	2.9374-2	-2180.0	9.1742	8.5011	7.8279	7.1548	6.6843	1.1445	1.3431	481.3	288	438	.7530	590

TABLE 25A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.049244; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.4418;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .09545; H2O= .13899; N2= .70947; O2= .04758; AR= .00851

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.7769-4	2.8884-2	-2168.5	9.1934	8.5203	7.8472	7.1741	6.7036	1.1475	1.3419	485.1	292	445	.7526	600
610	5.6822-4	2.8411-2	-2157.0	9.2124	8.5393	7.8662	7.1931	6.7226	1.1505	1.3406	488.9	296	452	.7522	610
620	5.5905-4	2.7953-2	-2145.5	9.2312	8.5580	7.8849	7.2118	6.7413	1.1535	1.3394	492.7	299	459	.7517	620
630	5.5018-4	2.7509-2	-2133.9	9.2496	8.5765	7.9034	7.2303	6.7598	1.1566	1.3382	496.4	303	466	.7512	630
640	5.4158-4	2.7079-2	-2122.4	9.2679	8.5948	7.9216	7.2485	6.7780	1.1596	1.3371	500.2	307	473	.7508	640
650	5.3325-4	2.6662-2	-2110.7	9.2859	8.6128	7.9397	7.2665	6.7960	1.1627	1.3359	503.8	310	481	.7503	650
660	5.2517-4	2.6258-2	-2099.1	9.3037	8.6305	7.9574	7.2843	6.8138	1.1658	1.3347	507.5	314	488	.7498	660
670	5.1733-4	2.5867-2	-2087.4	9.3212	8.6481	7.9750	7.3019	6.8314	1.1689	1.3335	511.1	317	495	.7493	670
680	5.0972-4	2.5486-2	-2075.7	9.3385	8.6654	7.9923	7.3192	6.8487	1.1719	1.3323	514.6	321	502	.7489	680
690	5.0234-4	2.5117-2	-2064.0	9.3557	8.6826	8.0095	7.3363	6.8658	1.1750	1.3312	518.2	324	509	.7484	690
700	4.9516-4	2.4758-2	-2052.2	9.3726	8.6995	8.0264	7.3533	6.8828	1.1781	1.3300	521.7	328	516	.7479	700
710	4.8818-4	2.4409-2	-2040.4	9.3893	8.7162	8.0431	7.3700	6.8995	1.1812	1.3289	525.2	331	523	.7474	710
720	4.8140-4	2.4070-2	-2028.6	9.4059	8.7328	8.0597	7.3865	6.9161	1.1842	1.3278	528.6	334	530	.7470	720
730	4.7481-4	2.3741-2	-2016.7	9.4222	8.7491	8.0760	7.4029	6.9324	1.1873	1.3266	532.1	338	537	.7465	730
740	4.6839-4	2.3420-2	-2004.9	9.4384	8.7653	8.0922	7.4191	6.9486	1.1904	1.3255	535.5	341	544	.7461	740
750	4.6215-4	2.3107-2	-1992.9	9.4544	8.7813	8.1082	7.4351	6.9646	1.1934	1.3244	538.9	345	552	.7456	750
760	4.5607-4	2.2803-2	-1981.0	9.4702	8.7971	8.1240	7.4509	6.9804	1.1965	1.3233	542.2	348	559	.7452	760
770	4.5014-4	2.2507-2	-1969.0	9.4859	8.8128	8.1397	7.4666	6.9961	1.1995	1.3222	545.6	351	566	.7447	770
780	4.4437-4	2.2219-2	-1957.0	9.5014	8.8283	8.1552	7.4821	7.0116	1.2025	1.3212	548.9	355	573	.7443	780
790	4.3875-4	2.1937-2	-1945.0	9.5167	8.8436	8.1705	7.4974	7.0269	1.2055	1.3201	552.1	358	580	.7439	790
800	4.3326-4	2.1663-2	-1932.9	9.5319	8.8588	8.1857	7.5126	7.0421	1.2085	1.3191	555.4	361	587	.7435	800
810	4.2792-4	2.1396-2	-1920.8	9.5470	8.8738	8.2007	7.5276	7.0571	1.2115	1.3180	558.7	364	594	.7431	810
820	4.2270-4	2.1135-2	-1908.7	9.5618	8.8887	8.2156	7.5425	7.0720	1.2145	1.3170	561.9	368	601	.7428	820
830	4.1760-4	2.0880-2	-1896.5	9.5766	8.9035	8.2303	7.5572	7.0867	1.2175	1.3160	565.1	371	608	.7425	830
840	4.1263-4	2.0632-2	-1884.3	9.5912	8.9181	8.2449	7.5718	7.1013	1.2204	1.3150	568.2	374	615	.7422	840
850	4.0778-4	2.0389-2	-1872.1	9.6056	8.9325	8.2594	7.5863	7.1158	1.2233	1.3140	571.4	377	622	.7419	850
860	4.0304-4	2.0152-2	-1859.8	9.6200	8.9468	8.2737	7.6006	7.1301	1.2262	1.3130	574.5	380	629	.7416	860
870	3.9840-4	1.9920-2	-1847.6	9.6341	8.9610	8.2879	7.6148	7.1443	1.2291	1.3121	577.7	383	636	.7413	870
880	3.9388-4	1.9694-2	-1835.3	9.6482	8.9751	8.3020	7.6289	7.1584	1.2319	1.3111	580.8	387	643	.7410	880
890	3.8945-4	1.9473-2	-1822.9	9.6621	8.9890	8.3159	7.6428	7.1723	1.2348	1.3102	583.8	390	650	.7408	890
900	3.8512-4	1.9256-2	-1810.6	9.6760	9.0028	8.3297	7.6566	7.1861	1.2376	1.3093	586.9	393	656	.7405	900
910	3.8089-4	1.9045-2	-1798.2	9.6897	9.0165	8.3434	7.6703	7.1998	1.2403	1.3084	590.0	396	663	.7402	910
920	3.7675-4	1.8838-2	-1785.8	9.7032	9.0301	8.3570	7.6839	7.2134	1.2431	1.3075	593.0	399	670	.7400	920
930	3.7270-4	1.8635-2	-1773.3	9.7167	9.0436	8.3704	7.6973	7.2268	1.2458	1.3066	596.0	402	677	.7398	930
940	3.6874-4	1.8437-2	-1760.8	9.7300	9.0569	8.3838	7.7107	7.2402	1.2485	1.3057	599.0	405	684	.7395	940
950	3.6485-4	1.8243-2	-1748.3	9.7432	9.0701	8.3970	7.7239	7.2534	1.2512	1.3049	602.0	408	691	.7393	950
960	3.6105-4	1.8053-2	-1735.8	9.7564	9.0832	8.4101	7.7370	7.2665	1.2538	1.3040	604.9	411	697	.7391	960
970	3.5733-4	1.7867-2	-1723.3	9.7694	9.0962	8.4231	7.7500	7.2795	1.2565	1.3032	607.9	414	704	.7388	970
980	3.5369-4	1.7684-2	-1710.7	9.7823	9.1091	8.4360	7.7629	7.2924	1.2590	1.3024	610.8	417	711	.7386	980
990	3.5011-4	1.7506-2	-1698.1	9.7951	9.1219	8.4488	7.7757	7.3052	1.2616	1.3016	613.8	420	718	.7384	990

TABLE 25A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.049244; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.4418;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .09545; H2O= .13899; N2= .70947; O2= .04758; AR= .00851

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4661-4	1.7331-2	-1685.5	9.8078	9.1346	8.4615	7.7884	7.3179	1.2641	1.3008	616.7	423	724	.7382	1000
1050	3.3011-4	1.6505-2	-1621.9	9.8697	9.1966	8.5235	7.8504	7.3799	1.2761	1.2972	631.0	438	757	.7373	1050
1100	3.1510-4	1.5755-2	-1557.9	9.9293	9.2562	8.5831	7.9100	7.4395	1.2875	1.2938	645.0	452	790	.7365	1100
1150	3.0140-4	1.5070-2	-1493.2	9.9868	9.3137	8.6406	7.9675	7.4970	1.2984	1.2906	658.7	466	822	.7358	1150
1200	2.8884-4	1.4442-2	-1428.0	10.0423	9.3692	8.6961	8.0230	7.5525	1.3087	1.2876	672.1	480	854	.7352	1200
1250	2.7729-4	1.3864-2	-1362.3	10.0959	9.4228	8.7497	8.0766	7.6061	1.3186	1.2848	685.2	493	885	.7346	1250
1300	2.6662-4	1.3331-2	-1296.2	10.1478	9.4747	8.8016	8.1285	7.6580	1.3281	1.2822	698.1	507	916	.7340	1300
1350	2.5675-4	1.2837-2	-1229.5	10.1981	9.5250	8.8519	8.1788	7.7083	1.3370	1.2798	710.7	520	947	.7334	1350
1400	2.4758-4	1.2379-2	-1162.5	10.2469	9.5738	8.9007	8.2276	7.7571	1.3456	1.2775	723.1	533	978	.7328	1400
1450	2.3904-4	1.1952-2	-1095.0	10.2943	9.6211	8.9480	8.2749	7.8044	1.3537	1.2754	735.3	545	1008	.7322	1450
1500	2.3107-4	1.1554-2	-1027.1	10.3403	9.6672	8.9941	8.3209	7.8505	1.3615	1.2734	747.3	558	1038	.7316	1500
1550	2.2362-4	1.1181-2	-958.9	10.3850	9.7119	9.0388	8.3657	7.8952	1.3688	1.2716	759.1	571	1069	.7309	1550
1600	2.1663-4	1.0832-2	-890.2	10.4286	9.7555	9.0824	8.4093	7.9388	1.3758	1.2698	770.7	583	1098	.7301	1600
1650	2.1007-4	1.0503-2	-821.3	10.4711	9.7979	9.1248	8.4517	7.9812	1.3825	1.2682	782.1	595	1128	.7294	1650
1700	2.0389-4	1.0194-2	-752.0	10.5124	9.8393	9.1662	8.4931	8.0226	1.3888	1.2666	793.4	607	1157	.7286	1700
1750	1.9806-4	9.9032-3	-682.4	10.5528	9.8797	9.2065	8.5334	8.0629	1.3948	1.2652	804.5	619	1186	.7278	1750
1800	1.9256-4	9.6281-3	-612.5	10.5921	9.9190	9.2459	8.5728	8.1023	1.4005	1.2638	815.5	631	1215	.7270	1800
1850	1.8736-4	9.3679-3	-542.4	10.6306	9.9575	9.2844	8.6112	8.1408	1.4059	1.2625	826.3	642	1244	.7262	1850
1900	1.8243-4	9.1214-3	-471.9	10.6681	9.9950	9.3219	8.6488	8.1783	1.4110	1.2613	837.0	654	1272	.7254	1900
1950	1.7775-4	8.8875-3	-401.3	10.7049	10.0317	9.3586	8.6855	8.2150	1.4159	1.2602	847.6	665	1300	.7246	1950
2000	1.7331-4	8.6653-3	-330.4	10.7408	10.0676	9.3945	8.7214	8.2509	1.4205	1.2591	858.0	677	1328	.7238	2000
2050	1.6908-4	8.4539-3	-259.2	10.7759	10.1028	9.4297	8.7565	8.2861	1.4248	1.2581	868.3	688	1355	.7231	2050
2100	1.6505-4	8.2527-3	-187.9	10.8103	10.1372	9.4640	8.7909	8.3204	1.4290	1.2572	878.5	699	1383	.7224	2100
2150	1.6121-4	8.0607-3	-116.3	10.8440	10.1708	9.4977	8.8246	8.3541	1.4329	1.2563	888.6	710	1410	.7217	2150
2200	1.5755-4	7.8775-3	-44.6	10.8769	10.2038	9.5307	8.8576	8.3871	1.4367	1.2555	898.6	721	1436	.7210	2200
2250	1.5405-4	7.7025-3	27.3	10.9093	10.2361	9.5630	8.8899	8.4194	1.4402	1.2547	908.4	732	1463	.7203	2250
2300	1.5070-4	7.5350-3	99.4	10.9410	10.2678	9.5947	8.9216	8.4511	1.4436	1.2539	918.2	742	1489	.7195	2300
2350	1.4749-4	7.3747-3	171.7	10.9720	10.2989	9.6258	8.9527	8.4822	1.4468	1.2532	927.9	753	1516	.7188	2350
2400	1.4442-4	7.2211-3	244.1	11.0025	10.3294	9.6563	8.9832	8.5127	1.4499	1.2525	937.4	763	1542	.7180	2400
2450	1.4147-4	7.0737-3	316.7	11.0325	10.3593	9.6862	9.0131	8.5426	1.4528	1.2519	946.9	774	1567	.7172	2450
2500	1.3864-4	6.9322-3	389.4	11.0618	10.3887	9.7156	9.0425	8.5720	1.4556	1.2513	956.3	784	1593	.7164	2500
2550	1.3593-4	6.7963-3	462.2	11.0907	10.4176	9.7445	9.0713	8.6009	1.4582	1.2507	965.6	794	1619	.7154	2550
2600	1.3331-4	6.6656-3	535.2	11.1190	10.4459	9.7728	9.0997	8.6292	1.4607	1.2502	974.8	805	1645	.7145	2600
2650	1.3080-4	6.5398-3	608.3	11.1469	10.4738	9.8006	9.1275	8.6570	1.4632	1.2497	983.9	815	1670	.7135	2650
2700	1.2837-4	6.4187-3	681.5	11.1742	10.5011	9.8280	9.1549	8.6844	1.4655	1.2492	993.0	825	1696	.7126	2700
2750	1.2604-4	6.3020-3	754.9	11.2012	10.5280	9.8549	9.1818	8.7113	1.4677	1.2487	1001.9	835	1721	.7117	2750
2800	1.2379-4	6.1895-3	828.3	11.2276	10.5545	9.8814	9.2083	8.7378	1.4698	1.2483	1010.8	844	1746	.7109	2800
2850	1.2162-4	6.0809-3	901.8	11.2537	10.5805	9.9074	9.2343	8.7638	1.4719	1.2478	1019.6	854	1771	.7100	2850
2900	1.1952-4	5.9761-3	975.5	11.2793	10.6062	9.9330	9.2599	8.7894	1.4738	1.2474	1028.4	864	1795	.7092	2900
2950	1.1750-4	5.8748-3	1049.2	11.3045	10.6314	9.9583	9.2851	8.8146	1.4758	1.2470	1037.0	874	1820	.7084	2950
3000	1.1554-4	5.7769-3	1123.1	11.3293	10.6562	9.9831	9.3100	8.8395	1.4776	1.2466	1045.6	883	1844	.7077	3000

TABLE 25.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.049244; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.8512-6	-1810.5	9.6760	28.442	393	1.0000	-1.0000	1.2378	1.3092	586.9	657	.741	1.2376	1.3093	586.9	656	.741
950	3.6485-6	-1748.3	9.7433	28.442	408	1.0000	-1.0000	1.2516	1.3048	602.0	691	.739	1.2512	1.3049	602.0	691	.739
1000	3.4661-6	-1685.4	9.8078	28.442	423	1.0000	-1.0000	1.2647	1.3006	616.6	725	.738	1.2641	1.3008	616.7	724	.738
1050	3.3011-6	-1621.9	9.8698	28.442	438	1.0000	-1.0000	1.2770	1.2969	630.9	758	.737	1.2761	1.2972	631.0	757	.737
1100	3.1510-6	-1557.7	9.9295	28.442	452	1.0000	-1.0000	1.2889	1.2934	644.9	791	.736	1.2875	1.2938	645.0	790	.736
1150	3.0140-6	-1493.0	9.9870	28.442	466	1.0000	-1.0000	1.3004	1.2900	658.5	823	.736	1.2984	1.2906	658.7	822	.736
1200	2.8884-6	-1427.7	10.0426	28.442	480	1.0000	-1.0000	1.3117	1.2868	671.9	856	.735	1.3087	1.2876	672.1	854	.735
1250	2.7729-6	-1361.8	10.0964	28.442	493	1.0001	-1.0000	1.3229	1.2837	684.9	888	.734	1.3186	1.2848	685.2	885	.735
1300	2.6662-6	-1295.4	10.1485	28.442	507	1.0001	-1.0000	1.3342	1.2807	697.6	921	.734	1.3281	1.2822	698.1	916	.734
1350	2.5675-6	-1228.4	10.1991	28.441	520	1.0002	-1.0000	1.3457	1.2777	710.1	954	.733	1.3370	1.2798	710.7	947	.733
1400	2.4757-6	-1160.8	10.2482	28.441	533	1.0004	-1.0000	1.3579	1.2746	722.3	988	.732	1.3456	1.2776	723.1	978	.733
1450	2.3903-6	-1092.6	10.2961	28.441	545	1.0007	-1.0000	1.3713	1.2714	734.1	1024	.730	1.3537	1.2754	735.3	1008	.732
1500	2.3106-6	-1023.6	10.3428	28.440	558	1.0011	-1.0000	1.3866	1.2679	745.7	1062	.728	1.3615	1.2735	747.3	1038	.732
1550	2.2359-6	-953.9	10.3886	28.438	571	1.0019	-1.0000	1.4050	1.2640	756.8	1105	.726	1.3688	1.2716	759.1	1069	.731
1600	2.1659-6	-883.1	10.4336	28.436	583	1.0031	-1.0001	1.4283	1.2593	767.5	1154	.721	1.3758	1.2699	770.8	1098	.730
1650	2.1000-6	-810.9	10.4780	28.433	595	1.0050	-1.0001	1.4587	1.2537	777.8	1213	.715	1.3824	1.2683	782.3	1128	.729
1700	2.0378-6	-737.0	10.5221	28.427	607	1.0080	-1.0002	1.4998	1.2468	787.3	1288	.707	1.3887	1.2668	793.6	1157	.728
1750	1.9790-6	-660.7	10.5663	28.419	619	1.0125	-1.0003	1.5560	1.2383	796.2	1387	.695	1.3947	1.2655	804.9	1186	.728
1800	1.9232-6	-581.1	10.6112	28.406	631	1.0193	-1.0005	1.6334	1.2280	804.3	1519	.678	1.4003	1.2642	816.1	1215	.727
1850	1.8700-6	-496.9	10.6573	28.388	642	1.0292	-1.0008	1.7392	1.2159	811.7	1700	.657	1.4057	1.2632	827.3	1244	.725
1900	1.8191-6	-406.5	10.7055	28.361	654	1.0433	-1.0012	1.8821	1.2024	818.4	1948	.631	1.4107	1.2623	838.5	1273	.724
1950	1.7700-6	-307.9	10.7567	28.322	665	1.0630	-1.0019	2.0711	1.1880	824.7	2285	.603	1.4153	1.2617	849.9	1301	.723
2000	1.7225-6	-198.5	10.8121	28.268	676	1.0893	-1.0027	2.3149	1.1737	830.9	2735	.572	1.4197	1.2613	861.4	1330	.721
2050	1.6761-6	-75.4	10.8729	28.194	686	1.1235	-1.0039	2.6199	1.1603	837.5	3325	.541	1.4237	1.2612	873.2	1359	.719
2100	1.6305-6	64.6	10.9403	28.097	697	1.1664	-1.0054	2.9895	1.1484	844.8	4078	.511	1.4275	1.2615	885.4	1388	.717
2150	1.5854-6	224.6	11.0156	27.970	707	1.2186	-1.0073	3.4240	1.1384	853.0	5018	.482	1.4309	1.2622	898.2	1417	.714
2200	1.5406-6	408.0	11.0999	27.811	717	1.2802	-1.0097	3.9213	1.1303	862.2	6163	.456	1.4340	1.2634	911.6	1448	.710
2250	1.4957-6	617.8	11.1942	27.615	726	1.3512	-1.0125	4.4785	1.1239	872.6	7527	.432	1.4370	1.2651	925.7	1480	.705
2300	1.4507-6	856.8	11.2992	27.379	735	1.4317	-1.0158	5.0936	1.1190	884.1	9118	.411	1.4398	1.2673	940.8	1515	.699
2350	1.4054-6	1128.1	11.4159	27.100	744	1.5217	-1.0197	5.7654	1.1154	896.8	10927	.392	1.4425	1.2701	956.9	1553	.691
2400	1.3597-6	1434.3	11.5448	26.777	752	1.6207	-1.0242	6.4917	1.1129	910.7	12922	.378	1.4453	1.2736	974.2	1594	.682
2450	1.3135-6	1778.1	11.6865	26.407	760	1.7276	-1.0292	7.2660	1.1113	925.9	15041	.367	1.4482	1.2778	992.8	1641	.671
2500	1.2671-6	2161.4	11.8414	25.993	768	1.8396	-1.0347	8.0718	1.1104	942.3	17179	.361	1.4513	1.2827	1012.8	1693	.659
2550	1.2204-6	2585.3	12.0092	25.536	776	1.9520	-1.0404	8.8776	1.1103	960.1	19190	.359	1.4547	1.2884	1034.3	1751	.645
2600	1.1738-6	3048.4	12.1891	25.042	784	2.0571	-1.0461	9.6323	1.1108	979.2	20895	.361	1.4583	1.2948	1057.2	1814	.630
2650	1.1277-6	3546.5	12.3788	24.522	792	2.1451	-1.0512	10.2659	1.1121	999.6	22104	.368	1.4623	1.3019	1081.6	1883	.615
2700	1.0827-6	4071.6	12.5751	23.988	799	2.2050	-1.0552	10.6978	1.1139	1021.0	22654	.378	1.4664	1.3095	1107.0	1956	.599
2750	1.0395-6	4611.6	12.7733	23.457	807	2.2275	-1.0576	10.8544	1.1166	1043.3	22451	.390	1.4707	1.3175	1133.3	2030	.585
2800	9.9872-7	5151.7	12.9679	22.946	815	2.2073	-1.0580	10.6917	1.1200	1066.0	21509	.405	1.4750	1.3256	1159.7	2104	.572
2850	9.6092-7	5675.5	13.1533	22.472	824	2.1458	-1.0563	10.2134	1.1243	1088.8	19950	.422	1.4792	1.3335	1185.8	2176	.560
2900	9.2644-7	6168.6	13.3249	22.046	832	2.0507	-1.0527	9.4741	1.1295	1111.5	17981	.439	1.4832	1.3410	1211.0	2243	.550
2950	8.9540-7	6620.1	13.4793	21.675	841	1.9339	-1.0479	8.5635	1.1359	1133.8	15831	.455	1.4869	1.3477	1234.9	2306	.543
3000	8.6768-7	7023.8	13.6150	21.360	851	1.8079	-1.0423	7.5800	1.1436	1155.6	13703	.470	1.4901	1.3536	1257.2	2363	.536

TABLE 25.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.049244; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
					MICRO						MICRO					MICRO	
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8512-5	-1810.5	9.0029	28.442	393	1.0000	-1.0000	1.2378	1.3092	586.9	657	.741	1.2376	1.3093	586.9	656	.741
950	3.6485-5	-1748.3	9.0702	28.442	408	1.0000	-1.0000	1.2516	1.3048	602.0	691	.739	1.2512	1.3049	602.0	691	.739
1000	3.4661-5	-1685.4	9.1347	28.442	423	1.0000	-1.0000	1.2647	1.3006	616.6	725	.738	1.2641	1.3008	616.7	724	.738
1050	3.3011-5	-1621.9	9.1967	28.442	438	1.0000	-1.0000	1.2769	1.2969	630.9	758	.737	1.2761	1.2972	631.0	757	.737
1100	3.1510-5	-1557.7	9.2564	28.442	452	1.0000	-1.0000	1.2888	1.2934	644.9	791	.737	1.2875	1.2938	645.0	790	.736
1150	3.0140-5	-1493.0	9.3139	28.442	466	1.0000	-1.0000	1.3003	1.2900	658.5	823	.736	1.2984	1.2906	658.7	822	.736
1200	2.8884-5	-1427.7	9.3695	28.442	480	1.0000	-1.0000	1.3114	1.2869	671.9	856	.735	1.3087	1.2876	672.1	854	.735
1250	2.7729-5	-1361.8	9.4232	28.442	493	1.0000	-1.0000	1.3224	1.2838	684.9	888	.735	1.3186	1.2848	685.2	885	.735
1300	2.6662-5	-1295.5	9.4753	28.442	507	1.0001	-1.0000	1.3332	1.2809	697.7	920	.734	1.3281	1.2822	698.1	916	.734
1350	2.5675-5	-1228.5	9.5258	28.442	520	1.0001	-1.0000	1.3440	1.2781	710.2	953	.733	1.3370	1.2798	710.7	947	.733
1400	2.4758-5	-1161.1	9.5749	28.441	533	1.0002	-1.0000	1.3549	1.2752	722.4	985	.732	1.3456	1.2776	723.1	978	.733
1450	2.3904-5	-1093.0	9.6227	28.441	545	1.0003	-1.0000	1.3662	1.2724	734.4	1019	.732	1.3537	1.2754	735.3	1008	.732
1500	2.3107-5	-1024.4	9.6692	28.441	558	1.0005	-1.0000	1.3782	1.2696	746.1	1053	.730	1.3615	1.2734	747.3	1038	.732
1550	2.2361-5	-955.2	9.7146	28.440	571	1.0008	-1.0000	1.3912	1.2666	757.6	1089	.729	1.3688	1.2716	759.1	1069	.731
1600	2.1661-5	-885.3	9.7590	28.439	583	1.0013	-1.0000	1.4059	1.2634	768.7	1127	.727	1.3758	1.2698	770.7	1098	.730
1650	2.1004-5	-814.6	9.8025	28.438	595	1.0021	-1.0000	1.4231	1.2598	779.6	1169	.724	1.3825	1.2682	782.2	1128	.729
1700	2.0384-5	-742.9	9.8453	28.436	607	1.0032	-1.0001	1.4439	1.2558	790.1	1216	.721	1.3888	1.2667	793.5	1157	.729
1750	1.9800-5	-670.1	9.8875	28.432	619	1.0048	-1.0001	1.4698	1.2512	800.2	1270	.716	1.3947	1.2653	804.7	1186	.728
1800	1.9247-5	-595.8	9.9293	28.428	631	1.0072	-1.0002	1.5027	1.2457	809.8	1334	.710	1.4004	1.2640	815.7	1215	.727
1850	1.8722-5	-519.7	9.9711	28.421	642	1.0106	-1.0003	1.5451	1.2393	819.0	1414	.702	1.4058	1.2628	826.7	1244	.726
1900	1.8223-5	-441.1	10.0130	28.411	654	1.0155	-1.0004	1.6002	1.2318	827.6	1513	.691	1.4109	1.2617	837.6	1272	.725
1950	1.7747-5	-359.4	10.0554	28.397	665	1.0224	-1.0006	1.6717	1.2231	835.7	1640	.678	1.4156	1.2608	848.4	1301	.724
2000	1.7292-5	-273.6	10.0988	28.378	676	1.0317	-1.0009	1.7638	1.2134	843.2	1804	.661	1.4202	1.2599	859.2	1329	.723
2050	1.6854-5	-182.6	10.1438	28.352	687	1.0442	-1.0014	1.8811	1.2028	850.4	2014	.642	1.4244	1.2593	870.1	1356	.722
2100	1.6432-5	-85.0	10.1908	28.316	698	1.0604	-1.0019	2.0276	1.1918	857.3	2281	.621	1.4283	1.2588	881.0	1384	.721
2150	1.6024-5	20.7	10.2406	28.269	709	1.0812	-1.0027	2.2071	1.1808	864.1	2619	.597	1.4320	1.2585	892.1	1411	.719
2200	1.5626-5	136.3	10.2937	28.209	719	1.1068	-1.0036	2.4215	1.1703	871.1	3038	.573	1.4354	1.2584	903.3	1439	.718
2250	1.5237-5	263.5	10.3508	28.131	730	1.1377	-1.0048	2.6714	1.1607	878.6	3549	.549	1.4385	1.2586	914.9	1466	.716
2300	1.4855-5	404.0	10.4126	28.036	740	1.1740	-1.0062	2.9553	1.1523	886.5	4161	.525	1.4414	1.2590	926.7	1494	.713
2350	1.4478-5	559.5	10.4795	27.919	749	1.2155	-1.0078	3.2703	1.1451	895.2	4881	.502	1.4440	1.2598	939.0	1523	.711
2400	1.4106-5	731.5	10.5519	27.779	759	1.2620	-1.0098	3.6133	1.1391	904.6	5716	.480	1.4465	1.2609	951.7	1552	.707
2450	1.3736-5	921.3	10.6301	27.615	768	1.3134	-1.0120	3.9811	1.1343	914.7	6671	.458	1.4487	1.2624	965.0	1583	.703
2500	1.3369-5	1130.0	10.7144	27.425	777	1.3695	-1.0146	4.3714	1.1306	925.7	7747	.439	1.4508	1.2642	978.8	1614	.698
2550	1.3004-5	1358.8	10.8050	27.209	786	1.4300	-1.0174	4.7827	1.1277	937.4	8943	.420	1.4529	1.2663	993.3	1649	.693
2600	1.2640-5	1608.6	10.9020	26.966	795	1.4950	-1.0206	5.2143	1.1255	949.9	10248	.404	1.4549	1.2689	1008.6	1685	.686
2650	1.2277-5	1880.5	11.0056	26.696	803	1.5641	-1.0241	5.6648	1.1240	963.2	11642	.391	1.4569	1.2719	1024.6	1725	.678
2700	1.1915-5	2175.4	11.1158	26.398	811	1.6368	-1.0280	6.1311	1.1231	977.3	13093	.380	1.4590	1.2753	1041.4	1767	.670
2750	1.1555-5	2493.8	11.2327	26.074	820	1.7118	-1.0321	6.6069	1.1227	992.2	14555	.372	1.4612	1.2792	1059.1	1813	.660
2800	1.1196-5	2836.0	11.3560	25.724	828	1.7873	-1.0364	7.0815	1.1228	1008.0	15968	.367	1.4635	1.2834	1077.7	1863	.650
2850	1.0840-5	3201.6	11.4854	25.351	836	1.8606	-1.0408	7.5381	1.1234	1024.7	17260	.365	1.4660	1.2882	1097.3	1917	.639
2900	1.0489-5	3589.2	11.6202	24.960	844	1.9280	-1.0451	7.9545	1.1243	1042.2	18353	.366	1.4687	1.2933	1117.8	1975	.627
2950	1.0144-5	3996.0	11.7593	24.555	852	1.9854	-1.0490	8.3043	1.1258	1060.5	19170	.369	1.4715	1.2989	1139.1	2036	.616
3000	9.8070-6	4418.0	11.9011	24.142	860	2.0284	-1.0523	8.5591	1.1277	1079.4	19648	.375	1.4745	1.3047	1161.1	2100	.604

TABLE 25.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.049244; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO W/CM K	PRAN	CP	GAM	VS	COND MICRO W/CM K	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S			J/G K		M/S		
900	3.8512-4	-1810.5	8.3298	28.442	393	1.0000	-1.0000	1.2378	1.3092	586.9	657	.741	1.2376	1.3093	586.9	656	.741
950	3.6485-4	-1748.3	8.3970	28.442	408	1.0000	-1.0000	1.2516	1.3048	602.0	691	.739	1.2512	1.3049	602.0	691	.739
1000	3.4661-4	-1685.4	8.4616	28.442	423	1.0000	-1.0000	1.2647	1.3006	616.6	725	.738	1.2641	1.3008	616.7	724	.738
1050	3.3011-4	-1621.9	8.5236	28.442	438	1.0000	-1.0000	1.2769	1.2969	630.9	758	.737	1.2761	1.2972	631.0	757	.737
1100	3.1510-4	-1557.7	8.5833	28.442	452	1.0000	-1.0000	1.2887	1.2934	644.9	791	.737	1.2875	1.2938	645.0	790	.736
1150	3.0140-4	-1493.0	8.6408	28.442	466	1.0000	-1.0000	1.3002	1.2901	658.6	823	.736	1.2984	1.2906	658.7	822	.736
1200	2.8884-4	-1427.7	8.6964	28.442	480	1.0000	-1.0000	1.3113	1.2869	671.9	855	.735	1.3087	1.2876	672.1	854	.735
1250	2.7729-4	-1361.9	8.7501	28.442	493	1.0000	-1.0000	1.3221	1.2839	684.9	888	.735	1.3186	1.2848	685.2	885	.735
1300	2.6662-4	-1295.5	8.8022	28.442	507	1.0000	-1.0000	1.3327	1.2810	697.7	920	.734	1.3281	1.2822	698.1	916	.734
1350	2.5675-4	-1228.6	8.8527	28.442	520	1.0001	-1.0000	1.3431	1.2782	710.3	952	.733	1.3370	1.2798	710.7	947	.733
1400	2.4758-4	-1161.2	8.9017	28.442	533	1.0001	-1.0000	1.3535	1.2756	722.5	984	.733	1.3456	1.2776	723.1	978	.733
1450	2.3904-4	-1093.3	8.9494	28.442	545	1.0002	-1.0000	1.3639	1.2729	734.6	1016	.732	1.3537	1.2754	735.3	1008	.732
1500	2.3107-4	-1024.8	8.9958	28.441	558	1.0003	-1.0000	1.3744	1.2703	746.4	1049	.731	1.3615	1.2734	747.3	1038	.732
1550	2.2361-4	-955.8	9.0410	28.441	571	1.0004	-1.0000	1.3853	1.2677	757.9	1083	.730	1.3688	1.2716	759.1	1069	.731
1600	2.1662-4	-886.3	9.0852	28.441	583	1.0006	-1.0000	1.3967	1.2651	769.3	1117	.729	1.3758	1.2698	770.7	1098	.730
1650	2.1005-4	-816.1	9.1284	28.440	595	1.0009	-1.0000	1.4090	1.2624	780.3	1153	.727	1.3825	1.2682	782.1	1128	.729
1700	2.0387-4	-745.3	9.1706	28.439	607	1.0014	-1.0000	1.4226	1.2595	791.2	1190	.726	1.3888	1.2667	793.4	1157	.729
1750	1.9803-4	-673.8	9.2121	28.438	619	1.0020	-1.0000	1.4378	1.2565	801.8	1230	.724	1.3948	1.2652	804.6	1186	.728
1800	1.9252-4	-601.5	9.2528	28.436	631	1.0029	-1.0001	1.4554	1.2531	812.1	1273	.721	1.4004	1.2639	815.6	1215	.727
1850	1.8730-4	-528.2	9.2930	28.433	642	1.0042	-1.0001	1.4763	1.2494	822.1	1321	.718	1.4058	1.2626	826.5	1244	.726
1900	1.8235-4	-453.8	9.3327	28.429	654	1.0060	-1.0002	1.5014	1.2453	831.8	1376	.713	1.4109	1.2615	837.2	1272	.725
1950	1.7764-4	-378.0	9.3720	28.424	665	1.0084	-1.0002	1.5320	1.2406	841.2	1439	.708	1.4158	1.2604	847.9	1300	.724
2000	1.7315-4	-300.5	9.4113	28.417	677	1.0117	-1.0003	1.5696	1.2353	850.2	1514	.702	1.4203	1.2594	858.5	1328	.724
2050	1.6887-4	-220.9	9.4506	28.407	688	1.0161	-1.0005	1.6160	1.2293	858.8	1602	.694	1.4247	1.2586	869.0	1356	.723
2100	1.6478-4	-138.7	9.4902	28.394	699	1.0219	-1.0007	1.6733	1.2226	867.1	1710	.684	1.4287	1.2578	879.5	1383	.722
2150	1.6085-4	-53.4	9.5304	28.377	710	1.0295	-1.0009	1.7434	1.2153	875.0	1841	.672	1.4326	1.2571	889.9	1410	.721
2200	1.5707-4	35.9	9.5714	28.355	720	1.0391	-1.0013	1.8286	1.2075	882.6	2000	.659	1.4361	1.2566	900.3	1437	.720
2250	1.5342-4	129.8	9.6136	28.326	731	1.0511	-1.0017	1.9308	1.1994	890.0	2193	.644	1.4395	1.2561	910.8	1464	.719
2300	1.4990-4	229.3	9.6573	28.290	741	1.0658	-1.0023	2.0513	1.1911	897.3	2425	.627	1.4426	1.2558	921.4	1490	.718
2350	1.4647-4	335.2	9.7029	28.245	752	1.0835	-1.0030	2.1911	1.1831	904.7	2701	.610	1.4455	1.2557	932.0	1517	.716
2400	1.4314-4	448.7	9.7507	28.189	762	1.1042	-1.0038	2.3499	1.1754	912.2	3026	.592	1.4482	1.2557	942.8	1544	.715
2450	1.3988-4	570.5	9.8009	28.122	772	1.1280	-1.0048	2.5269	1.1684	920.0	3403	.573	1.4507	1.2560	953.8	1570	.713
2500	1.3669-4	701.6	9.8539	28.042	782	1.1549	-1.0059	2.7201	1.1621	928.1	3835	.554	1.4530	1.2564	965.0	1597	.711
2550	1.3357-4	842.8	9.9098	27.948	791	1.1845	-1.0072	2.9272	1.1566	936.7	4323	.536	1.4551	1.2570	976.5	1625	.709
2600	1.3049-4	994.6	9.9687	27.839	801	1.2167	-1.0087	3.1457	1.1519	945.7	4870	.517	1.4570	1.2578	988.3	1653	.706
2650	1.2746-4	1157.5	10.0308	27.716	810	1.2512	-1.0103	3.3733	1.1480	955.3	5477	.499	1.4587	1.2589	1000.4	1681	.703
2700	1.2447-4	1332.0	10.0960	27.577	819	1.2878	-1.0121	3.6079	1.1448	965.4	6143	.481	1.4604	1.2602	1012.8	1710	.699
2750	1.2152-4	1518.4	10.1644	27.422	828	1.3263	-1.0141	3.8483	1.1423	975.9	6870	.464	1.4619	1.2617	1025.7	1740	.696
2800	1.1861-4	1716.9	10.2359	27.251	837	1.3668	-1.0162	4.0936	1.1403	987.0	7655	.447	1.4634	1.2634	1038.9	1771	.691
2850	1.1573-4	1927.8	10.3106	27.065	845	1.4090	-1.0185	4.3435	1.1389	998.5	8495	.432	1.4649	1.2654	1052.5	1804	.686
2900	1.1289-4	2151.3	10.3883	26.863	854	1.4529	-1.0210	4.5976	1.1378	1010.6	9384	.418	1.4663	1.2676	1066.7	1838	.681
2950	1.1007-4	2387.7	10.4691	26.645	862	1.4984	-1.0236	4.8557	1.1372	1023.1	10311	.406	1.4678	1.2700	1081.2	1875	.675
3000	1.0729-4	2636.9	10.5529	26.413	871	1.5453	-1.0265	5.1167	1.1369	1036.2	11262	.396	1.4693	1.2727	1096.3	1913	.669

TABLE 25.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.049244; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8512-3	-1810.5	7.6566	28.442	393	1.0000	-1.0000	1.2378	1.3092	586.9	657	.741	1.2376	1.3093	586.9	656	.741
950	3.6485-3	-1748.3	7.7239	28.442	408	1.0000	-1.0000	1.2516	1.3048	602.0	691	.739	1.2512	1.3049	602.0	691	.739
1000	3.4661-3	-1685.4	7.7885	28.442	423	1.0000	-1.0000	1.2647	1.3006	616.6	725	.738	1.2641	1.3008	616.7	724	.738
1050	3.3011-3	-1621.9	7.8505	28.442	438	1.0000	-1.0000	1.2769	1.2969	630.9	758	.737	1.2761	1.2972	631.0	757	.737
1100	3.1510-3	-1557.7	7.9101	28.442	452	1.0000	-1.0000	1.2887	1.2934	644.9	791	.737	1.2875	1.2938	645.0	790	.736
1150	3.0140-3	-1493.0	7.9677	28.442	466	1.0000	-1.0000	1.3001	1.2901	658.6	823	.736	1.2984	1.2906	658.7	822	.736
1200	2.8884-3	-1427.7	8.0232	28.442	480	1.0000	-1.0000	1.3112	1.2869	671.9	855	.735	1.3087	1.2876	672.1	854	.735
1250	2.7729-3	-1361.9	8.0770	28.442	493	1.0000	-1.0000	1.3219	1.2839	685.0	887	.735	1.3186	1.2848	685.2	885	.735
1300	2.6662-3	-1295.5	8.1290	28.442	507	1.0000	-1.0000	1.3324	1.2811	697.7	919	.734	1.3281	1.2822	698.1	916	.734
1350	2.5675-3	-1228.6	8.1795	28.442	520	1.0000	-1.0000	1.3427	1.2783	710.3	951	.733	1.3370	1.2798	710.7	947	.733
1400	2.4758-3	-1161.3	8.2285	28.442	533	1.0000	-1.0000	1.3527	1.2757	722.6	983	.733	1.3456	1.2775	723.1	978	.733
1450	2.3904-3	-1093.4	8.2762	28.442	545	1.0001	-1.0000	1.3627	1.2732	734.6	1015	.732	1.3537	1.2754	735.3	1008	.732
1500	2.3107-3	-1025.0	8.3225	28.442	558	1.0001	-1.0000	1.3726	1.2707	746.5	1047	.731	1.3615	1.2734	747.3	1038	.732
1550	2.2362-3	-956.1	8.3677	28.441	571	1.0002	-1.0000	1.3826	1.2683	758.1	1080	.731	1.3688	1.2716	759.1	1068	.731
1600	2.1663-3	-886.7	8.4118	28.441	583	1.0003	-1.0000	1.3926	1.2659	769.5	1112	.730	1.3758	1.2698	770.7	1098	.730
1650	2.1006-3	-816.8	8.4548	28.441	595	1.0004	-1.0000	1.4030	1.2635	780.7	1146	.729	1.3825	1.2682	782.1	1128	.729
1700	2.0388-3	-746.4	8.4968	28.440	607	1.0006	-1.0000	1.4137	1.2611	791.7	1180	.728	1.3888	1.2666	793.4	1157	.729
1750	1.9805-3	-675.5	8.5380	28.440	619	1.0009	-1.0000	1.4249	1.2587	802.5	1215	.726	1.3948	1.2652	804.5	1186	.728
1800	1.9254-3	-603.9	8.5783	28.439	631	1.0013	-1.0000	1.4370	1.2562	813.1	1251	.725	1.4005	1.2638	815.5	1215	.727
1850	1.8733-3	-531.7	8.6178	28.438	642	1.0018	-1.0000	1.4501	1.2536	823.4	1289	.723	1.4058	1.2626	826.4	1244	.726
1900	1.8239-3	-458.9	8.6567	28.436	654	1.0025	-1.0001	1.4646	1.2509	833.6	1328	.721	1.4110	1.2614	837.1	1272	.725
1950	1.7770-3	-385.3	8.6949	28.434	665	1.0034	-1.0001	1.4809	1.2480	843.6	1371	.719	1.4158	1.2603	847.7	1300	.725
2000	1.7324-3	-310.8	8.7326	28.431	677	1.0047	-1.0001	1.4996	1.2449	853.3	1418	.716	1.4204	1.2593	858.2	1328	.724
2050	1.6899-3	-235.2	8.7699	28.427	688	1.0063	-1.0002	1.5212	1.2415	862.8	1468	.713	1.4248	1.2583	868.6	1355	.723
2100	1.6494-3	-158.6	8.8069	28.422	699	1.0084	-1.0003	1.5465	1.2378	872.0	1525	.709	1.4289	1.2574	878.9	1383	.722
2150	1.6107-3	-80.5	8.8436	28.416	710	1.0111	-1.0003	1.5762	1.2337	881.0	1589	.704	1.4328	1.2566	889.1	1410	.722
2200	1.5736-3	-0.9	8.8802	28.407	721	1.0146	-1.0005	1.6112	1.2293	889.7	1663	.698	1.4364	1.2559	899.3	1436	.721
2250	1.5381-3	80.7	8.9169	28.397	731	1.0189	-1.0006	1.6524	1.2245	898.2	1747	.692	1.4399	1.2552	909.4	1463	.720
2300	1.5039-3	164.5	8.9537	28.383	742	1.0244	-1.0008	1.7010	1.2193	906.4	1845	.684	1.4432	1.2547	919.4	1490	.719
2350	1.4710-3	250.9	8.9909	28.367	753	1.0310	-1.0011	1.7578	1.2139	914.4	1959	.675	1.4463	1.2542	929.4	1516	.718
2400	1.4393-3	340.4	9.0286	28.346	763	1.0391	-1.0014	1.8237	1.2081	922.2	2091	.665	1.4492	1.2538	939.5	1542	.717
2450	1.4087-3	433.5	9.0670	28.320	773	1.0488	-1.0018	1.8993	1.2023	929.9	2243	.655	1.4519	1.2535	949.5	1568	.716
2500	1.3790-3	530.5	9.1062	28.289	783	1.0601	-1.0022	1.9852	1.1964	937.6	2418	.643	1.4544	1.2533	959.6	1594	.715
2550	1.3502-3	632.2	9.1464	28.252	793	1.0732	-1.0028	2.0812	1.1906	945.2	2619	.631	1.4567	1.2532	969.8	1620	.713
2600	1.3221-3	738.8	9.1878	28.208	803	1.0881	-1.0034	2.1871	1.1850	953.0	2845	.618	1.4589	1.2532	980.0	1646	.712
2650	1.2948-3	851.0	9.2306	28.156	813	1.1048	-1.0042	2.3020	1.1798	960.8	3098	.604	1.4610	1.2533	990.3	1672	.710
2700	1.2681-3	969.2	9.2747	28.096	823	1.1231	-1.0050	2.4248	1.1750	968.9	3379	.590	1.4628	1.2536	1000.8	1698	.709
2750	1.2421-3	1093.6	9.3204	28.028	832	1.1430	-1.0060	2.5541	1.1706	977.2	3688	.576	1.4646	1.2540	1011.4	1724	.707
2800	1.2165-3	1224.7	9.3676	27.950	842	1.1642	-1.0070	2.6883	1.1668	985.8	4024	.562	1.4662	1.2545	1022.2	1751	.705
2850	1.1915-3	1362.5	9.4164	27.864	851	1.1865	-1.0081	2.8258	1.1635	994.7	4388	.548	1.4676	1.2552	1033.2	1777	.703
2900	1.1669-3	1507.3	9.4668	27.768	860	1.2098	-1.0093	2.9653	1.1607	1003.9	4780	.534	1.4690	1.2560	1044.3	1803	.700
2950	1.1428-3	1659.0	9.5187	27.663	869	1.2340	-1.0106	3.1056	1.1584	1013.5	5198	.519	1.4703	1.2569	1055.7	1830	.698
3000	1.1191-3	1817.8	9.5720	27.549	878	1.2588	-1.0120	3.2457	1.1565	1023.3	5644	.505	1.4715	1.2580	1067.3	1858	.695

TABLE 25.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.049244; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9256-2	-1810.5	7.1862	28.442	393	1.0000	-1.0000	1.2378	1.3092	586.9	657	.741	1.2376	1.3093	586.9	656	.741
950	1.8243-2	-1748.3	7.2534	28.442	408	1.0000	-1.0000	1.2516	1.3047	602.0	691	.739	1.2512	1.3049	602.0	691	.739
1000	1.7331-2	-1685.4	7.3180	28.442	423	1.0000	-1.0000	1.2647	1.3006	616.6	725	.738	1.2641	1.3008	616.7	724	.738
1050	1.6505-2	-1621.9	7.3800	28.442	438	1.0000	-1.0000	1.2769	1.2969	630.9	758	.737	1.2761	1.2972	631.0	757	.737
1100	1.5755-2	-1557.7	7.4397	28.442	452	1.0000	-1.0000	1.2887	1.2934	644.9	791	.737	1.2875	1.2938	645.0	790	.736
1150	1.5070-2	-1493.0	7.4972	28.442	466	1.0000	-1.0000	1.3001	1.2901	658.6	823	.736	1.2984	1.2906	658.7	822	.736
1200	1.4442-2	-1427.7	7.5528	28.442	480	1.0000	-1.0000	1.3112	1.2869	671.9	855	.735	1.3087	1.2876	672.1	854	.735
1250	1.3864-2	-1361.9	7.6065	28.442	493	1.0000	-1.0000	1.3219	1.2839	685.0	887	.735	1.3186	1.2848	685.2	885	.735
1300	1.3331-2	-1295.5	7.6585	28.442	507	1.0000	-1.0000	1.3323	1.2811	697.7	919	.734	1.3281	1.2822	698.1	916	.734
1350	1.2837-2	-1228.7	7.7090	28.442	520	1.0000	-1.0000	1.3425	1.2784	710.3	951	.733	1.3370	1.2798	710.7	947	.733
1400	1.2379-2	-1161.3	7.7580	28.442	533	1.0000	-1.0000	1.3525	1.2758	722.6	983	.733	1.3456	1.2775	723.1	978	.733
1450	1.1952-2	-1093.4	7.8057	28.442	545	1.0000	-1.0000	1.3623	1.2732	734.6	1015	.732	1.3537	1.2754	735.3	1008	.732
1500	1.1554-2	-1025.1	7.8520	28.442	558	1.0001	-1.0000	1.3719	1.2708	746.5	1047	.732	1.3615	1.2734	747.3	1038	.732
1550	1.1181-2	-956.2	7.8971	28.442	571	1.0001	-1.0000	1.3816	1.2685	758.1	1079	.731	1.3688	1.2716	759.1	1068	.731
1600	1.0832-2	-886.9	7.9412	28.442	583	1.0002	-1.0000	1.3911	1.2662	769.6	1111	.730	1.3758	1.2698	770.7	1098	.730
1650	1.0503-2	-817.1	7.9841	28.441	595	1.0003	-1.0000	1.4008	1.2639	780.8	1143	.729	1.3825	1.2682	782.1	1128	.729
1700	1.0194-2	-746.8	8.0261	28.441	607	1.0004	-1.0000	1.4106	1.2617	791.8	1176	.728	1.3888	1.2666	793.4	1157	.729
1750	9.9028-3	-676.0	8.0671	28.441	619	1.0005	-1.0000	1.4205	1.2594	802.7	1210	.727	1.3948	1.2652	804.5	1186	.728
1800	9.6276-3	-604.8	8.1073	28.440	631	1.0007	-1.0000	1.4308	1.2572	813.4	1243	.726	1.4005	1.2638	815.5	1215	.727
1850	9.3671-3	-532.9	8.1466	28.440	642	1.0010	-1.0000	1.4416	1.2550	823.9	1278	.725	1.4058	1.2626	826.4	1244	.726
1900	9.1203-3	-460.6	8.1852	28.439	654	1.0014	-1.0000	1.4530	1.2527	834.2	1314	.723	1.4110	1.2614	837.1	1272	.725
1950	8.8861-3	-387.6	8.2231	28.437	665	1.0019	-1.0001	1.4652	1.2504	844.3	1351	.722	1.4158	1.2602	847.6	1300	.725
2000	8.6634-3	-314.0	8.2604	28.436	677	1.0026	-1.0001	1.4785	1.2480	854.3	1390	.720	1.4204	1.2592	858.1	1328	.724
2050	8.4515-3	-239.8	8.2971	28.434	688	1.0034	-1.0001	1.4931	1.2455	864.1	1431	.718	1.4248	1.2582	868.5	1355	.723
2100	8.2495-3	-164.7	8.3332	28.431	699	1.0045	-1.0001	1.5093	1.2428	873.6	1474	.716	1.4289	1.2573	878.7	1383	.722
2150	8.0567-3	-88.8	8.3690	28.428	710	1.0059	-1.0002	1.5275	1.2400	883.0	1521	.713	1.4328	1.2565	888.9	1410	.722
2200	7.8724-3	-11.9	8.4043	28.423	721	1.0076	-1.0002	1.5482	1.2370	892.2	1572	.710	1.4365	1.2557	898.9	1436	.721
2250	7.6959-3	66.1	8.4394	28.418	732	1.0097	-1.0003	1.5718	1.2337	901.2	1628	.706	1.4400	1.2550	908.9	1463	.720
2300	7.5268-3	145.3	8.4742	28.411	742	1.0124	-1.0004	1.5989	1.2303	910.0	1690	.702	1.4433	1.2543	918.8	1489	.719
2350	7.3645-3	226.0	8.5089	28.402	753	1.0157	-1.0005	1.6299	1.2266	918.6	1759	.697	1.4465	1.2537	928.7	1516	.718
2400	7.2083-3	308.4	8.5436	28.392	763	1.0198	-1.0007	1.6654	1.2227	927.0	1837	.692	1.4494	1.2532	938.5	1542	.718
2450	7.0580-3	392.6	8.5783	28.379	774	1.0246	-1.0009	1.7061	1.2186	935.3	1925	.686	1.4522	1.2527	948.3	1568	.717
2500	6.9130-3	479.1	8.6132	28.363	784	1.0304	-1.0011	1.7523	1.2143	943.3	2024	.679	1.4549	1.2523	958.0	1594	.716
2550	6.7730-3	568.0	8.6485	28.344	794	1.0372	-1.0014	1.8046	1.2098	951.3	2136	.671	1.4573	1.2520	967.7	1620	.714
2600	6.6374-3	659.6	8.6841	28.322	804	1.0451	-1.0017	1.8632	1.2053	959.2	2261	.663	1.4597	1.2518	977.5	1645	.713
2650	6.5061-3	754.4	8.7202	28.295	814	1.0541	-1.0021	1.9283	1.2008	967.0	2402	.654	1.4619	1.2516	987.2	1671	.712
2700	6.3785-3	852.6	8.7569	28.264	824	1.0644	-1.0026	1.9998	1.1963	974.8	2558	.644	1.4639	1.2515	997.0	1697	.711
2750	6.2545-3	954.5	8.7942	28.227	834	1.0759	-1.0031	2.0773	1.1919	982.6	2731	.634	1.4658	1.2515	1006.8	1722	.709
2800	6.1337-3	1060.4	8.8324	28.186	843	1.0886	-1.0037	2.1604	1.1878	990.5	2920	.624	1.4676	1.2516	1016.7	1747	.708
2850	6.0160-3	1170.6	8.8714	28.138	853	1.1024	-1.0044	2.2482	1.1839	998.5	3126	.613	1.4693	1.2517	1026.7	1773	.707
2900	5.9010-3	1285.3	8.9113	28.084	862	1.1172	-1.0051	2.3400	1.1803	1006.7	3349	.602	1.4708	1.2520	1036.8	1798	.705
2950	5.7886-3	1404.7	8.9521	28.025	871	1.1328	-1.0059	2.4346	1.1771	1015.0	3588	.591	1.4723	1.2524	1046.9	1823	.704
3000	5.6786-3	1528.8	8.9938	27.958	881	1.1493	-1.0068	2.5311	1.1743	1023.5	3843	.580	1.4736	1.2528	1057.2	1848	.702

TABLE 25C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.049244; EQUIV.RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3					J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.012-5	-2856.0	6.9898	28.442	1.0706	1.835-5	30.123	130	1.000	-1.000	0.9813	1.3913	277	173	.734	200
220	1.825-5	-2831.4	7.1067	28.442	1.5631	1.667-5	30.093	141	1.000	-1.000	0.9847	1.3900	291	189	.731	220
240	1.632-5	-2771.7	7.3640	28.442	5.7435	1.513-5	29.800	149	1.000	-1.000	0.9998	1.3871	305	202	.735	240
						PRESSURE = 0.10 ATM										
200	2.013-4	-2856.2	6.4091	28.442	1.0365	1.836-4	30.125	130	1.000	-1.000	0.9813	1.3913	277	173	.734	200
220	1.829-4	-2835.0	6.5100	28.442	1.0987	1.669-4	30.122	141	1.000	-1.000	0.9835	1.3902	291	190	.730	220
240	1.673-4	-2810.1	6.6179	28.442	1.5084	1.528-4	30.092	151	1.000	-1.000	0.9871	1.3887	303	206	.727	240
260	1.518-4	-2762.5	6.8073	28.442	3.8941	1.401-4	29.892	160	1.000	-1.000	0.9985	1.3862	317	219	.730	260
280	1.298-4	-2594.2	7.4267	28.442	12.2748	1.260-4	28.945	161	1.000	-1.000	1.0440	1.3796	333	224	.751	280
						PRESSURE = 1.00 ATM										
200	2.012-3	-2856.2	5.8294	28.442	1.0331	1.836-3	30.125	130	1.000	-1.000	0.9812	1.3913	277	173	.734	200
220	1.829-3	-2835.4	5.9287	28.442	1.0525	1.669-3	30.125	141	1.000	-1.000	0.9833	1.3902	291	190	.730	220
240	1.677-3	-2813.9	6.0221	28.442	1.1070	1.530-3	30.122	152	1.000	-1.000	0.9859	1.3889	303	206	.727	240
260	1.545-3	-2789.9	6.1180	28.442	1.3504	1.411-3	30.102	162	1.000	-1.000	0.9894	1.3873	316	221	.724	260
280	1.424-3	-2727.2	6.3487	28.442	2.1869	1.306-3	30.007	171	1.000	-1.000	0.9964	1.3852	328	235	.725	280
298	1.308-3	-2674.6	6.5301	28.442	3.8645	1.216-3	29.748	178	1.000	-1.000	1.0106	1.3823	339	246	.731	298
300	1.295-3	-2667.2	6.5549	28.442	4.1392	1.207-3	29.705	178	1.000	-1.000	1.0129	1.3819	341	247	.732	300
320	1.128-3	-2539.2	6.9662	28.442	9.6224	1.100-3	28.874	180	1.000	-1.000	1.0542	1.3758	356	253	.751	320
						PRESSURE = 10.00 ATM										
200	2.009-2	-2856.2	5.2499	28.442	1.0327	1.836-2	30.125	130	1.000	-1.000	0.9812	1.3913	277	173	.734	200
220	1.827-2	-2835.4	5.3490	28.442	1.0479	1.669-2	30.125	141	1.000	-1.000	0.9833	1.3902	291	190	.730	220
240	1.675-2	-2814.3	5.4409	28.442	1.0671	1.530-2	30.125	152	1.000	-1.000	0.9857	1.3889	303	206	.726	240
260	1.546-2	-2792.6	5.5276	28.442	1.1057	1.412-2	30.123	162	1.000	-1.000	0.9885	1.3874	316	222	.724	260
280	1.435-2	-2739.2	5.7240	28.442	1.3639	1.311-2	30.113	172	1.000	-1.000	0.9918	1.3858	327	237	.722	280
298	1.344-2	-2713.3	5.8138	28.442	1.5194	1.230-2	30.087	181	1.000	-1.000	0.9959	1.3841	338	250	.722	298
300	1.336-2	-2710.4	5.8233	28.442	1.5436	1.222-2	30.083	182	1.000	-1.000	0.9963	1.3839	339	251	.722	300
320	1.244-2	-2675.9	5.9345	28.442	1.9615	1.142-2	30.000	191	1.000	-1.000	1.0034	1.3816	350	264	.725	320
340	1.152-2	-2629.0	6.0764	28.442	2.8249	1.068-2	29.803	198	1.000	-1.000	1.0157	1.3787	362	276	.730	340
360	1.050-2	-2557.5	6.2803	28.442	4.5102	9.950-3	29.393	203	1.000	-1.000	1.0381	1.3745	374	286	.740	360
380	9.275-3	-2437.8	6.6030	28.442	7.8564	9.178-3	28.619	206	1.000	-1.000	1.0788	1.3685	389	294	.755	380
						PRESSURE = 50.00 ATM										
200	9.968-2	-2856.2	4.8448	28.442	1.0327	9.178-2	30.125	130	1.000	-1.000	0.9812	1.3913	277	173	.734	200
220	9.069-2	-2835.4	4.9439	28.442	1.0475	8.344-2	30.125	141	1.000	-1.000	0.9833	1.3902	291	190	.730	220
240	8.320-2	-2814.3	5.0357	28.442	1.0636	7.648-2	30.125	152	1.000	-1.000	0.9857	1.3889	303	206	.726	240
260	7.684-2	-2792.8	5.1216	28.442	1.0840	7.060-2	30.124	162	1.000	-1.000	0.9884	1.3874	316	222	.724	260
280	7.142-2	-2740.3	5.3149	28.442	1.2921	6.555-2	30.123	172	1.000	-1.000	0.9914	1.3858	327	237	.722	280
298	6.707-2	-2716.6	5.3969	28.442	1.3235	6.155-2	30.117	181	1.000	-1.000	0.9946	1.3842	338	250	.722	298
300	6.665-2	-2714.1	5.4051	28.442	1.3285	6.117-2	30.117	182	1.000	-1.000	0.9949	1.3841	339	251	.722	300
320	6.243-2	-2686.8	5.4932	28.442	1.4122	5.732-2	30.100	192	1.000	-1.000	0.9991	1.3821	350	265	.722	320
340	5.859-2	-2657.1	5.5832	28.442	1.5772	5.387-2	30.061	200	1.000	-1.000	1.0044	1.3800	360	278	.724	340
360	5.498-2	-2622.9	5.6809	28.442	1.8693	5.074-2	29.979	209	1.000	-1.000	1.0119	1.3776	371	291	.726	360
380	5.144-2	-2581.1	5.7938	28.442	2.3481	4.782-2	29.824	216	1.000	-1.000	1.0229	1.3747	382	303	.730	380
400	4.781-2	-2527.2	5.9319	28.442	3.0974	4.502-2	29.556	223	1.000	-1.000	1.0393	1.3711	393	314	.736	400
420	4.389-2	-2454.5	6.1090	28.442	4.2530	4.226-2	29.125	227	1.000	-1.000	1.0639	1.3667	405	325	.744	420

TABLE 26A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.065658; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.4358;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .12519; H2O= .16805; N2= .69839; O2= .00000; AR= .00838

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7327-3	8.6634-2	-3266.9	7.9717	7.2985	6.6252	5.9519	5.4814	1.0656	1.3782	283.9	110	147	.7975	200
210	1.6502-3	8.2509-2	-3256.2	8.0237	7.3505	6.6772	6.0040	5.5334	1.0671	1.3774	290.8	116	156	.7923	210
220	1.5752-3	7.8759-2	-3245.5	8.0734	7.4002	6.7269	6.0536	5.5831	1.0687	1.3767	297.6	121	164	.7878	220
230	1.5067-3	7.5334-2	-3234.8	8.1210	7.4477	6.7744	6.1012	5.6306	1.0704	1.3758	304.2	126	173	.7839	230
240	1.4439-3	7.2195-2	-3224.1	8.1666	7.4933	6.8200	6.1468	5.6762	1.0721	1.3750	310.6	132	181	.7806	240
250	1.3861-3	6.9308-2	-3213.4	8.2104	7.5371	6.8638	6.1906	5.7200	1.0739	1.3741	316.9	137	189	.7778	250
260	1.3328-3	6.6642-2	-3202.6	8.2525	7.5793	6.9060	6.2327	5.7621	1.0758	1.3732	323.1	142	197	.7754	260
270	1.2835-3	6.4174-2	-3191.9	8.2931	7.6199	6.9466	6.2734	5.8028	1.0778	1.3723	329.1	147	205	.7736	270
280	1.2376-3	6.1882-2	-3181.1	8.3324	7.6591	6.9859	6.3126	5.8420	1.0798	1.3713	335.1	152	213	.7721	280
290	1.1950-3	5.9748-2	-3170.3	8.3703	7.6971	7.0238	6.3505	5.8799	1.0819	1.3703	340.9	157	221	.7710	290
298	1.1623-3	5.8115-2	-3161.4	8.4003	7.7271	7.0538	6.3805	5.9100	1.0836	1.3695	345.5	161	227	.7703	298
300	1.1551-3	5.7756-2	-3159.4	8.4070	7.7338	7.0605	6.3872	5.9167	1.0841	1.3693	346.6	162	228	.7702	300
310	1.1179-3	5.5893-2	-3148.6	8.4426	7.7693	7.0961	6.4228	5.9522	1.0863	1.3683	352.2	167	235	.7701	310
320	1.0829-3	5.4147-2	-3137.7	8.4771	7.8039	7.1306	6.4574	5.9868	1.0885	1.3673	357.7	172	243	.7702	320
330	1.0501-3	5.2506-2	-3126.8	8.5107	7.8374	7.1641	6.4909	6.0203	1.0909	1.3662	363.1	176	250	.7703	330
340	1.0192-3	5.0961-2	-3115.9	8.5433	7.8700	7.1967	6.5235	6.0529	1.0933	1.3651	368.4	181	257	.7705	340
350	9.9011-4	4.9505-2	-3105.0	8.5750	7.9017	7.2285	6.5552	6.0846	1.0957	1.3640	373.6	186	264	.7705	350
360	9.6260-4	4.8130-2	-3094.0	8.6059	7.9326	7.2594	6.5861	6.1155	1.0982	1.3629	378.8	190	272	.7698	360
370	9.3659-4	4.6829-2	-3083.0	8.6360	7.9628	7.2895	6.6162	6.1457	1.1007	1.3617	383.8	195	279	.7689	370
380	9.1194-4	4.5597-2	-3072.0	8.6654	7.9921	7.3189	6.6456	6.1750	1.1033	1.3606	388.8	199	287	.7679	380
390	8.8856-4	4.4428-2	-3060.9	8.6941	8.0208	7.3476	6.6743	6.2037	1.1060	1.3594	393.7	204	294	.7668	390
400	8.6634-4	4.3317-2	-3049.9	8.7221	8.0489	7.3756	6.7024	6.2318	1.1086	1.3582	398.6	208	302	.7658	400
410	8.4521-4	4.2261-2	-3038.8	8.7495	8.0763	7.4030	6.7298	6.2592	1.1114	1.3570	403.3	213	309	.7653	410
420	8.2509-4	4.1254-2	-3027.6	8.7764	8.1031	7.4298	6.7566	6.2860	1.1141	1.3558	408.0	217	316	.7649	420
430	8.0590-4	4.0295-2	-3016.5	8.8026	8.1293	7.4561	6.7828	6.3122	1.1169	1.3546	412.7	221	323	.7647	430
440	7.8759-4	3.9379-2	-3005.3	8.8283	8.1551	7.4818	6.8085	6.3379	1.1198	1.3534	417.3	225	330	.7645	440
450	7.7008-4	3.8504-2	-2994.1	8.8535	8.1802	7.5070	6.8337	6.3631	1.1226	1.3522	421.8	230	337	.7644	450
460	7.5334-4	3.7667-2	-2982.8	8.8782	8.2050	7.5317	6.8584	6.3879	1.1255	1.3510	426.3	234	344	.7643	460
470	7.3731-4	3.6866-2	-2971.6	8.9025	8.2292	7.5559	6.8827	6.4121	1.1285	1.3497	430.7	238	351	.7643	470
480	7.2195-4	3.6098-2	-2960.3	8.9262	8.2530	7.5797	6.9065	6.4359	1.1314	1.3485	435.0	242	358	.7644	480
490	7.0722-4	3.5361-2	-2948.9	8.9496	8.2763	7.6031	6.9298	6.4592	1.1344	1.3472	439.3	246	365	.7645	490
500	6.9307-4	3.4654-2	-2937.6	8.9725	8.2993	7.6260	6.9528	6.4822	1.1375	1.3460	443.6	250	371	.7646	500
510	6.7949-4	3.3974-2	-2926.2	8.9951	8.3218	7.6486	6.9753	6.5047	1.1405	1.3448	447.8	254	379	.7643	510
520	6.6642-4	3.3321-2	-2914.8	9.0173	8.3440	7.6708	6.9975	6.5269	1.1436	1.3435	452.0	258	386	.7639	520
530	6.5384-4	3.2692-2	-2903.3	9.0391	8.3658	7.6926	7.0193	6.5487	1.1467	1.3423	456.1	261	393	.7636	530
540	6.4174-4	3.2087-2	-2891.8	9.0606	8.3873	7.7140	7.0408	6.5702	1.1498	1.3410	460.1	265	400	.7632	540
550	6.3007-4	3.1503-2	-2880.3	9.0817	8.4084	7.7352	7.0619	6.5913	1.1529	1.3398	464.2	269	407	.7628	550
560	6.1882-4	3.0941-2	-2868.8	9.1025	8.4292	7.7560	7.0827	6.6121	1.1561	1.3385	468.2	273	414	.7624	560
570	6.0796-4	3.0398-2	-2857.2	9.1230	8.4497	7.7765	7.1032	6.6326	1.1592	1.3373	472.1	277	421	.7619	570
580	5.9748-4	2.9874-2	-2845.6	9.1432	8.4699	7.7966	7.1234	6.6528	1.1624	1.3361	476.0	281	428	.7614	580
590	5.8735-4	2.9368-2	-2833.9	9.1631	8.4898	7.8165	7.1433	6.6727	1.1656	1.3348	479.9	284	436	.7609	590

TABLE 26A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.065658; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.4358;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .12519; H2O= .16805; N2= .69839; O2= .00000; AR= .00838

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
600	5.7756-4	2.8878-2	-2822.3	9.1827	8.5094	7.8362	7.1629	6.6923	1.1688	1.3336	483.7	288	443	.7604	600
610	5.6809-4	2.8405-2	-2810.6	9.2020	8.5288	7.8555	7.1823	6.7117	1.1721	1.3324	487.5	292	450	.7599	610
620	5.5893-4	2.7947-2	-2798.8	9.2211	8.5479	7.8746	7.2013	6.7307	1.1753	1.3312	491.2	295	457	.7594	620
630	5.5006-4	2.7503-2	-2787.1	9.2399	8.5667	7.8934	7.2202	6.7496	1.1785	1.3300	495.0	299	465	.7588	630
640	5.4146-4	2.7073-2	-2775.3	9.2585	8.5853	7.9120	7.2388	6.7682	1.1818	1.3288	498.7	303	472	.7582	640
650	5.3313-4	2.6657-2	-2763.4	9.2769	8.6036	7.9304	7.2571	6.7865	1.1850	1.3276	502.3	306	479	.7577	650
660	5.2506-4	2.6253-2	-2751.6	9.2950	8.6217	7.9485	7.2752	6.8046	1.1882	1.3264	505.9	310	486	.7571	660
670	5.1722-4	2.5861-2	-2739.7	9.3129	8.6396	7.9664	7.2931	6.8225	1.1915	1.3252	509.5	313	494	.7566	670
680	5.0961-4	2.5481-2	-2727.7	9.3306	8.6573	7.9840	7.3108	6.8402	1.1947	1.3240	513.1	317	501	.7560	680
690	5.0223-4	2.5111-2	-2715.8	9.3480	8.6748	8.0015	7.3282	6.8577	1.1980	1.3229	516.6	320	508	.7554	690
700	4.9505-4	2.4753-2	-2703.8	9.3653	8.6920	8.0188	7.3455	6.8749	1.2012	1.3217	520.1	324	516	.7549	700
710	4.8808-4	2.4404-2	-2691.7	9.3823	8.7091	8.0358	7.3626	6.8920	1.2045	1.3206	523.6	327	523	.7543	710
720	4.8130-4	2.4065-2	-2679.7	9.3992	8.7260	8.0527	7.3794	6.9089	1.2077	1.3194	527.0	331	530	.7538	720
730	4.7471-4	2.3735-2	-2667.6	9.4159	8.7426	8.0694	7.3961	6.9255	1.2110	1.3183	530.5	334	537	.7532	730
740	4.6829-4	2.3415-2	-2655.5	9.4324	8.7591	8.0859	7.4126	6.9420	1.2142	1.3172	533.9	338	545	.7527	740
750	4.6205-4	2.3103-2	-2643.3	9.4487	8.7755	8.1022	7.4289	6.9584	1.2174	1.3161	537.2	341	552	.7522	750
760	4.5597-4	2.2799-2	-2631.1	9.4649	8.7916	8.1183	7.4451	6.9745	1.2206	1.3150	540.6	345	559	.7517	760
770	4.5005-4	2.2502-2	-2618.9	9.4808	8.8076	8.1343	7.4611	6.9905	1.2238	1.3139	543.9	348	567	.7512	770
780	4.4428-4	2.2214-2	-2606.6	9.4967	8.8234	8.1501	7.4769	7.0063	1.2270	1.3128	547.2	351	574	.7507	780
790	4.3865-4	2.1933-2	-2594.4	9.5123	8.8390	8.1658	7.4925	7.0219	1.2302	1.3118	550.5	355	581	.7502	790
800	4.3317-4	2.1659-2	-2582.0	9.5278	8.8545	8.1813	7.5080	7.0374	1.2334	1.3107	553.7	358	589	.7497	800
810	4.2782-4	2.1391-2	-2569.7	9.5431	8.8699	8.1966	7.5234	7.0528	1.2365	1.3097	556.9	361	596	.7493	810
820	4.2261-4	2.1130-2	-2557.3	9.5583	8.8851	8.2118	7.5386	7.0680	1.2396	1.3087	560.2	364	603	.7489	820
830	4.1752-4	2.0876-2	-2544.9	9.5734	8.9001	8.2269	7.5536	7.0830	1.2428	1.3077	563.3	368	610	.7486	830
840	4.1254-4	2.0627-2	-2532.5	9.5883	8.9150	8.2418	7.5685	7.0979	1.2458	1.3067	566.5	371	617	.7482	840
850	4.0769-4	2.0385-2	-2520.0	9.6030	8.9298	8.2565	7.5833	7.1127	1.2489	1.3057	569.7	374	625	.7479	850
860	4.0295-4	2.0148-2	-2507.5	9.6177	8.9444	8.2711	7.5979	7.1273	1.2520	1.3047	572.8	377	632	.7475	860
870	3.9832-4	1.9916-2	-2494.9	9.6322	8.9589	8.2856	7.6124	7.1418	1.2550	1.3037	575.9	380	639	.7472	870
880	3.9379-4	1.9690-2	-2482.4	9.6465	8.9733	8.3000	7.6267	7.1562	1.2580	1.3028	579.0	384	646	.7469	880
890	3.8937-4	1.9468-2	-2469.8	9.6607	8.9875	8.3142	7.6410	7.1704	1.2610	1.3019	582.0	387	653	.7466	890
900	3.8504-4	1.9252-2	-2457.2	9.6749	9.0016	8.3283	7.6551	7.1845	1.2640	1.3009	585.1	390	660	.7463	900
910	3.8081-4	1.9041-2	-2444.5	9.6888	9.0156	8.3423	7.6691	7.1985	1.2669	1.3000	588.1	393	668	.7460	910
920	3.7667-4	1.8834-2	-2431.8	9.7027	9.0294	8.3562	7.6829	7.2123	1.2699	1.2991	591.2	396	675	.7457	920
930	3.7262-4	1.8631-2	-2419.1	9.7164	9.0432	8.3699	7.6967	7.2261	1.2727	1.2983	594.2	399	682	.7454	930
940	3.6866-4	1.8433-2	-2406.4	9.7301	9.0568	8.3836	7.7103	7.2397	1.2756	1.2974	597.1	402	689	.7451	940
950	3.6478-4	1.8239-2	-2393.6	9.7436	9.0703	8.3971	7.7238	7.2532	1.2784	1.2965	600.1	405	696	.7449	950
960	3.6098-4	1.8049-2	-2380.8	9.7570	9.0837	8.4105	7.7372	7.2666	1.2812	1.2957	603.1	408	703	.7446	960
970	3.5726-4	1.7863-2	-2368.0	9.7703	9.0970	8.4238	7.7505	7.2799	1.2840	1.2949	606.0	411	710	.7443	970
980	3.5361-4	1.7681-2	-2355.1	9.7835	9.1102	8.4369	7.7637	7.2931	1.2868	1.2940	608.9	414	717	.7441	980
990	3.5004-4	1.7502-2	-2342.2	9.7965	9.1233	8.4500	7.7768	7.3062	1.2895	1.2932	611.8	417	724	.7438	990

TABLE 26A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A=0.065658; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.4358;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .12519; H2O= .16805; N2= .69839; O2= .00000; AR= .00838

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4654-4	1.7327-2	-2329.3	9.8095	9.1363	8.4630	7.7897	7.3191	1.2922	1.2925	614.7	420	731	.7436	1000
1050	3.3004-4	1.6502-2	-2264.4	9.8729	9.1996	8.5264	7.8531	7.3825	1.3049	1.2888	629.0	435	765	.7424	1050
1100	3.1503-4	1.5752-2	-2198.8	9.9339	9.2606	8.5873	7.9141	7.4435	1.3171	1.2853	643.0	450	799	.7414	1100
1150	3.0134-4	1.5067-2	-2132.7	9.9927	9.3194	8.6461	7.9729	7.5023	1.3287	1.2821	656.6	464	832	.7405	1150
1200	2.8878-4	1.4439-2	-2066.0	10.0494	9.3762	8.7029	8.0297	7.5591	1.3398	1.2792	669.9	478	865	.7396	1200
1250	2.7723-4	1.3862-2	-1998.7	10.1044	9.4311	8.7578	8.0846	7.6140	1.3504	1.2764	683.0	491	898	.7388	1250
1300	2.6657-4	1.3328-2	-1930.9	10.1575	9.4843	8.8110	8.1377	7.6672	1.3604	1.2738	695.8	505	931	.7380	1300
1350	2.5669-4	1.2835-2	-1862.7	10.2090	9.5358	8.8625	8.1893	7.7187	1.3700	1.2713	708.4	518	963	.7372	1350
1400	2.4753-4	1.2376-2	-1793.9	10.2590	9.5858	8.9125	8.2393	7.7687	1.3791	1.2691	720.8	532	995	.7364	1400
1450	2.3899-4	1.1950-2	-1724.8	10.3076	9.6343	8.9611	8.2878	7.8172	1.3878	1.2669	732.9	545	1027	.7357	1450
1500	2.3103-4	1.1551-2	-1655.2	10.3548	9.6815	9.0083	8.3350	7.8644	1.3961	1.2649	744.8	557	1059	.7349	1500
1550	2.2357-4	1.1179-2	-1585.2	10.4007	9.7274	9.0542	8.3809	7.9103	1.4039	1.2631	756.6	570	1090	.7340	1550
1600	2.1659-4	1.0829-2	-1514.8	10.4454	9.7721	9.0989	8.4256	7.9550	1.4114	1.2613	768.2	583	1122	.7332	1600
1650	2.1002-4	1.0501-2	-1444.0	10.4889	9.8157	9.1424	8.4691	7.9985	1.4185	1.2597	779.6	595	1153	.7323	1650
1700	2.0385-4	1.0192-2	-1372.9	10.5314	9.8581	9.1848	8.5116	8.0410	1.4252	1.2581	790.8	607	1183	.7314	1700
1750	1.9802-4	9.9011-3	-1301.5	10.5728	9.8995	9.2262	8.5530	8.0824	1.4316	1.2567	801.9	619	1214	.7305	1750
1800	1.9252-4	9.6260-3	-1229.8	10.6132	9.9399	9.2667	8.5934	8.1228	1.4376	1.2553	812.8	631	1244	.7296	1800
1850	1.8732-4	9.3659-3	-1157.8	10.6526	9.9794	9.3061	8.6329	8.1623	1.4433	1.2540	823.6	643	1274	.7287	1850
1900	1.8239-4	9.1194-3	-1085.5	10.6912	10.0179	9.3447	8.6714	8.2008	1.4488	1.2528	834.3	655	1304	.7278	1900
1950	1.7771-4	8.8856-3	-1012.9	10.7289	10.0556	9.3824	8.7091	8.2385	1.4540	1.2517	844.8	667	1333	.7268	1950
2000	1.7327-4	8.6634-3	-940.1	10.7658	10.0925	9.4193	8.7460	8.2754	1.4588	1.2507	855.2	678	1363	.7259	2000
2050	1.6904-4	8.4521-3	-867.0	10.8019	10.1286	9.4553	8.7821	8.3115	1.4635	1.2497	865.5	689	1391	.7251	2050
2100	1.6502-4	8.2509-3	-793.7	10.8372	10.1639	9.4907	8.8174	8.3468	1.4679	1.2487	875.6	701	1420	.7242	2100
2150	1.6118-4	8.0590-3	-720.2	10.8718	10.1985	9.5253	8.8520	8.3814	1.4721	1.2479	885.7	712	1449	.7233	2150
2200	1.5752-4	7.8759-3	-646.5	10.9057	10.2324	9.5591	8.8859	8.4153	1.4760	1.2470	895.6	723	1477	.7224	2200
2250	1.5402-4	7.7008-3	-572.6	10.9389	10.2656	9.5924	8.9191	8.4485	1.4798	1.2463	905.5	734	1505	.7215	2250
2300	1.5067-4	7.5334-3	-498.6	10.9714	10.2982	9.6249	8.9517	8.4811	1.4833	1.2455	915.2	745	1533	.7205	2300
2350	1.4746-4	7.3731-3	-424.3	11.0034	10.3301	9.6569	8.9836	8.5130	1.4867	1.2448	924.8	755	1561	.7195	2350
2400	1.4439-4	7.2195-3	-349.9	11.0347	10.3614	9.6882	9.0149	8.5443	1.4899	1.2442	934.4	766	1588	.7185	2400
2450	1.4144-4	7.0722-3	-275.3	11.0655	10.3922	9.7189	9.0457	8.5751	1.4930	1.2435	943.8	777	1616	.7175	2450
2500	1.3862-4	6.9308-3	-200.6	11.0956	10.4224	9.7491	9.0759	8.6053	1.4959	1.2430	953.2	787	1643	.7164	2500
2550	1.3590-4	6.7949-3	-125.7	11.1253	10.4520	9.7788	9.1055	8.6349	1.4987	1.2424	962.5	797	1671	.7152	2550
2600	1.3328-4	6.6642-3	-50.7	11.1544	10.4812	9.8079	9.1347	8.6641	1.5013	1.2419	971.6	808	1698	.7140	2600
2650	1.3077-4	6.5384-3	24.4	11.1830	10.5098	9.8365	9.1633	8.6927	1.5038	1.2414	980.7	818	1725	.7129	2650
2700	1.2835-4	6.4174-3	99.7	11.2112	10.5379	9.8647	9.1914	8.7208	1.5062	1.2409	989.8	828	1752	.7118	2700
2750	1.2601-4	6.3007-3	175.0	11.2388	10.5656	9.8923	9.2191	8.7485	1.5085	1.2404	998.7	838	1779	.7107	2750
2800	1.2376-4	6.1882-3	250.5	11.2660	10.5928	9.9195	9.2463	8.7757	1.5107	1.2400	1007.6	848	1805	.7096	2800
2850	1.2159-4	6.0796-3	326.1	11.2928	10.6195	9.9463	9.2730	8.8024	1.5129	1.2396	1016.3	858	1831	.7086	2850
2900	1.1950-4	5.9748-3	401.8	11.3191	10.6459	9.9726	9.2994	8.8288	1.5149	1.2392	1025.1	868	1857	.7077	2900
2950	1.1747-4	5.8735-3	477.6	11.3450	10.6718	9.9985	9.3253	8.8547	1.5169	1.2388	1033.7	877	1883	.7067	2950
3000	1.1551-4	5.7756-3	553.5	11.3706	10.6973	10.0240	9.3508	8.8802	1.5188	1.2384	1042.3	887	1909	.7058	3000

TABLE 26.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.065658; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.8504-6	-2457.2	9.6749	28.436	390	1.0000	-1.0000	1.2640	1.3009	585.1	660 .746	1.2640	1.3009	585.1	660 .746
950	3.6478-6	-2393.6	9.7436	28.436	405	1.0000	-1.0000	1.2785	1.2965	600.1	696 .745	1.2784	1.2965	600.1	696 .745
1000	3.4654-6	-2329.3	9.8095	28.436	420	1.0000	-1.0000	1.2923	1.2924	614.7	731 .744	1.2922	1.2925	614.7	731 .744
1050	3.3004-6	-2264.4	9.8729	28.436	435	1.0000	-1.0000	1.3052	1.2887	629.0	765 .742	1.3049	1.2888	629.0	765 .742
1100	3.1503-6	-2198.8	9.9339	28.436	450	1.0000	-1.0000	1.3177	1.2852	642.9	799 .741	1.3171	1.2853	643.0	799 .741
1150	3.0134-6	-2132.6	9.9927	28.436	464	1.0001	-1.0000	1.3299	1.2819	656.5	833 .740	1.3287	1.2821	656.6	832 .740
1200	2.8878-6	-2065.8	10.0496	28.436	478	1.0001	-1.0000	1.3422	1.2786	669.8	868 .739	1.3398	1.2792	669.9	865 .740
1250	2.7723-6	-1998.4	10.1046	28.435	491	1.0003	-1.0000	1.3549	1.2754	682.8	903 .738	1.3504	1.2764	683.0	898 .739
1300	2.6656-6	-1930.3	10.1580	28.435	505	1.0005	-1.0000	1.3686	1.2721	695.4	939 .736	1.3604	1.2738	695.8	931 .738
1350	2.5668-6	-1861.5	10.2100	28.434	518	1.0010	-1.0000	1.3842	1.2685	707.6	977 .735	1.3700	1.2714	708.4	963 .737
1400	2.4750-6	-1791.8	10.2606	28.433	532	1.0017	-1.0000	1.4028	1.2644	719.5	1018 .732	1.3791	1.2691	720.8	995 .736
1450	2.3895-6	-1721.1	10.3102	28.430	545	1.0028	-1.0001	1.4257	1.2598	730.9	1064 .730	1.3878	1.2670	733.0	1027 .736
1500	2.3095-6	-1649.2	10.3591	28.427	557	1.0045	-1.0001	1.4550	1.2543	741.8	1117 .726	1.3960	1.2650	745.0	1059 .735
1550	2.2346-6	-1575.5	10.4073	28.422	570	1.0070	-1.0002	1.4927	1.2477	752.2	1180 .721	1.4038	1.2632	756.8	1090 .734
1600	2.1642-6	-1499.7	10.4555	28.414	582	1.0106	-1.0003	1.5418	1.2400	761.9	1257 .715	1.4113	1.2616	768.5	1122 .733
1650	2.0978-6	-1421.1	10.5039	28.403	595	1.0156	-1.0004	1.6055	1.2311	771.1	1352 .707	1.4183	1.2601	780.2	1153 .732
1700	2.0349-6	-1338.8	10.5530	28.387	607	1.0226	-1.0006	1.6873	1.2209	779.7	1471 .696	1.4249	1.2588	791.7	1184 .731
1750	1.9752-6	-1252.0	10.6033	28.364	619	1.0319	-1.0008	1.7915	1.2098	787.8	1621 .684	1.4311	1.2576	803.2	1214 .729
1800	1.9183-6	-1159.3	10.6555	28.334	631	1.0442	-1.0012	1.9223	1.1980	795.5	1813 .669	1.4369	1.2566	814.7	1245 .728
1850	1.8638-6	-1059.2	10.7103	28.294	642	1.0602	-1.0017	2.0845	1.1859	802.9	2058 .650	1.4424	1.2559	826.3	1275 .726
1900	1.8114-6	-950.2	10.7685	28.241	654	1.0805	-1.0023	2.2826	1.1741	810.4	2370 .629	1.4475	1.2553	838.0	1306 .725
1950	1.7607-6	-830.3	10.8308	28.173	665	1.1058	-1.0031	2.5212	1.1628	818.0	2766 .606	1.4521	1.2551	849.9	1336 .723
2000	1.7115-6	-697.3	10.8981	28.087	675	1.1370	-1.0042	2.8043	1.1524	826.0	3265 .580	1.4565	1.2551	862.0	1366 .720
2050	1.6633-6	-549.1	10.9713	27.980	686	1.1747	-1.0055	3.1355	1.1432	834.5	3891 .553	1.4605	1.2554	874.5	1397 .717
2100	1.6161-6	-382.9	11.0513	27.848	696	1.2196	-1.0071	3.5180	1.1352	843.7	4670 .525	1.4641	1.2562	887.5	1428 .714
2150	1.5694-6	-196.4	11.1391	27.688	706	1.2725	-1.0091	3.9547	1.1285	853.6	5630 .496	1.4675	1.2573	901.0	1460 .710
2200	1.5231-6	13.5	11.2356	27.496	716	1.3339	-1.0115	4.4482	1.1229	864.3	6800 .468	1.4706	1.2588	915.1	1493 .705
2250	1.4770-6	249.5	11.3416	27.269	725	1.4046	-1.0144	5.0015	1.1184	875.9	8205 .442	1.4735	1.2609	930.1	1529 .699
2300	1.4308-6	514.7	11.4582	27.004	734	1.4850	-1.0178	5.6176	1.1149	888.6	9863 .418	1.4764	1.2635	945.9	1567 .691
2350	1.3846-6	812.3	11.5862	26.699	743	1.5756	-1.0218	6.2987	1.1123	902.2	11772 .397	1.4792	1.2667	962.8	1609 .683
2400	1.3380-6	1145.6	11.7265	26.350	751	1.6760	-1.0263	7.0445	1.1105	917.0	13911 .380	1.4820	1.2705	980.9	1655 .672
2450	1.2911-6	1517.7	11.8799	25.956	759	1.7852	-1.0315	7.8483	1.1093	933.1	16216 .367	1.4851	1.2750	1000.3	1707 .660
2500	1.2439-6	1931.1	12.0469	25.518	766	1.9001	-1.0372	8.6919	1.1088	950.4	18582 .359	1.4884	1.2803	1021.2	1765 .646
2550	1.1966-6	2387.0	12.2274	25.039	774	2.0156	-1.0431	9.5403	1.1090	969.0	20855 .354	1.4919	1.2863	1043.6	1830 .631
2600	1.1495-6	2884.3	12.4205	24.524	781	2.1235	-1.0490	10.3373	1.1097	989.0	22834 .354	1.4958	1.2931	1067.6	1901 .615
2650	1.1029-6	3418.6	12.6241	23.983	789	2.2133	-1.0543	11.0060	1.1111	1010.3	24299 .357	1.5000	1.3006	1093.1	1978 .598
2700	1.0576-6	3981.3	12.8344	23.431	796	2.2734	-1.0585	11.4576	1.1131	1032.7	25047 .364	1.5045	1.3087	1119.7	2058 .582
2750	1.0141-6	4559.4	13.0465	22.884	804	2.2936	-1.0609	11.6091	1.1158	1055.9	24948 .374	1.5091	1.3171	1147.2	2141 .566
2800	9.7321-7	5136.3	13.2545	22.360	812	2.2681	-1.0611	11.4092	1.1193	1079.5	23987 .386	1.5137	1.3256	1174.8	2224 .552
2850	9.3544-7	5694.4	13.4521	21.876	820	2.1982	-1.0590	10.8603	1.1237	1103.3	22286 .399	1.5183	1.3339	1202.0	2304 .540
2900	9.0114-7	6217.5	13.6340	21.444	828	2.0924	-1.0550	10.0235	1.1291	1126.8	20077 .413	1.5225	1.3417	1228.2	2380 .530
2950	8.7041-7	6693.7	13.7968	21.070	837	1.9640	-1.0496	9.0019	1.1357	1149.8	17631 .427	1.5265	1.3486	1253.0	2450 .521
3000	8.4311-7	7116.6	13.9390	20.755	846	1.8271	-1.0434	7.9102	1.1437	1172.4	15196 .440	1.5300	1.3547	1276.0	2514 .515

TABLE 26.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.065658; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8504-5	-2457.2	9.0016	28.436	390	1.0000	-1.0000	1.2640	1.3009	585.1	660	.746	1.2640	1.3009	585.1	660	.746
950	3.6478-5	-2393.6	9.0703	28.436	405	1.0000	-1.0000	1.2784	1.2965	600.1	696	.745	1.2784	1.2965	600.1	696	.745
1000	3.4654-5	-2329.3	9.1363	28.436	420	1.0000	-1.0000	1.2922	1.2925	614.7	731	.744	1.2922	1.2925	614.7	731	.744
1050	3.3004-5	-2264.4	9.1996	28.436	435	1.0000	-1.0000	1.3050	1.2888	629.0	765	.742	1.3049	1.2888	629.0	765	.742
1100	3.1503-5	-2198.8	9.2606	28.436	450	1.0000	-1.0000	1.3174	1.2853	643.0	799	.741	1.3171	1.2853	643.0	799	.741
1150	3.0134-5	-2132.7	9.3194	28.436	464	1.0000	-1.0000	1.3293	1.2820	656.6	833	.740	1.3287	1.2821	656.6	832	.740
1200	2.8878-5	-2065.9	9.3763	28.436	478	1.0001	-1.0000	1.3409	1.2789	669.9	866	.739	1.3398	1.2792	669.9	865	.740
1250	2.7723-5	-1998.6	9.4312	28.436	491	1.0001	-1.0000	1.3525	1.2759	682.9	900	.738	1.3504	1.2764	683.0	898	.739
1300	2.6656-5	-1930.6	9.4845	28.435	505	1.0003	-1.0000	1.3643	1.2729	695.6	935	.737	1.3604	1.2738	695.8	931	.738
1350	2.5669-5	-1862.1	9.5362	28.435	518	1.0005	-1.0000	1.3767	1.2700	708.0	970	.736	1.3700	1.2713	708.4	963	.737
1400	2.4751-5	-1793.0	9.5865	28.434	532	1.0008	-1.0000	1.3903	1.2668	720.1	1006	.735	1.3791	1.2691	720.8	995	.736
1450	2.3897-5	-1723.1	9.6356	28.433	545	1.0013	-1.0000	1.4057	1.2635	731.9	1044	.733	1.3878	1.2670	732.9	1027	.736
1500	2.3099-5	-1652.3	9.6835	28.432	557	1.0021	-1.0000	1.4239	1.2598	743.4	1086	.731	1.3961	1.2650	744.9	1059	.735
1550	2.2352-5	-1580.6	9.7306	28.429	570	1.0033	-1.0001	1.4458	1.2555	754.4	1132	.728	1.4039	1.2631	756.7	1090	.734
1600	2.1651-5	-1507.7	9.7769	28.426	583	1.0049	-1.0001	1.4728	1.2507	765.1	1184	.725	1.4113	1.2614	768.3	1122	.733
1650	2.0991-5	-1433.2	9.8227	28.420	595	1.0073	-1.0002	1.5064	1.2451	775.3	1243	.721	1.4184	1.2599	779.8	1153	.732
1700	2.0368-5	-1356.9	9.8683	28.413	607	1.0105	-1.0003	1.5482	1.2387	785.0	1313	.716	1.4250	1.2584	791.2	1183	.731
1750	1.9779-5	-1278.2	9.9139	28.403	619	1.0148	-1.0004	1.6002	1.2315	794.3	1396	.710	1.4313	1.2571	802.5	1214	.730
1800	1.9220-5	-1196.7	9.9598	28.389	631	1.0204	-1.0005	1.6644	1.2235	803.1	1496	.702	1.4373	1.2559	813.7	1244	.729
1850	1.8688-5	-1111.5	10.0065	28.370	643	1.0278	-1.0008	1.7430	1.2148	811.6	1616	.693	1.4429	1.2549	824.9	1274	.728
1900	1.8181-5	-1022.1	10.0542	28.346	654	1.0371	-1.0011	1.8382	1.2056	819.7	1761	.683	1.4481	1.2540	836.0	1304	.726
1950	1.7695-5	-927.4	10.1033	28.314	666	1.0487	-1.0014	1.9521	1.1962	827.6	1938	.671	1.4530	1.2533	847.1	1334	.725
2000	1.7229-5	-826.5	10.1544	28.274	677	1.0630	-1.0019	2.0869	1.1867	835.4	2152	.656	1.4576	1.2527	858.3	1364	.723
2050	1.6779-5	-718.3	10.2078	28.225	688	1.0803	-1.0025	2.2443	1.1775	843.2	2411	.640	1.4619	1.2524	869.6	1393	.722
2100	1.6344-5	-601.7	10.2640	28.163	699	1.1010	-1.0032	2.4257	1.1687	851.2	2723	.622	1.4658	1,2522	881.1	1422	.720
2150	1.5921-5	-475.4	10.3235	28.088	709	1.1254	-1.0041	2.6324	1.1605	859.4	3097	.603	1.4694	1.2523	892.7	1451	.718
2200	1.5510-5	-338.0	10.3866	27.999	720	1.1537	-1.0051	2.8649	1.1532	868.0	3544	.582	1.4727	1.2526	904.6	1480	.716
2250	1.5107-5	-188.4	10.4539	27.892	730	1.1862	-1.0064	3.1233	1.1466	877.0	4075	.559	1.4758	1.2531	916.8	1510	.713
2300	1.4713-5	-25.3	10.5256	27.767	740	1.2229	-1.0079	3.4077	1.1410	886.4	4702	.536	1.4786	1.2539	929.3	1540	.710
2350	1.4325-5	152.8	10.6021	27.623	749	1.2642	-1.0096	3.7176	1.1361	896.5	5436	.512	1.4811	1.2551	942.2	1571	.706
2400	1.3942-5	346.9	10.6839	27.456	759	1.3100	-1.0116	4.0528	1.1321	907.1	6290	.489	1.4835	1.2565	955.6	1603	.702
2450	1.3563-5	558.5	10.7711	27.268	768	1.3606	-1.0138	4.4132	1.1288	918.3	7274	.466	1.4857	1.2582	969.5	1636	.697
2500	1.3188-5	788.7	10.8641	27.055	777	1.4160	-1.0164	4.7991	1.1261	930.2	8394	.444	1.4878	1.2603	984.0	1671	.691
2550	1.2816-5	1038.8	10.9631	26.817	785	1.4765	-1.0193	5.2108	1.1241	942.7	9652	.424	1.4899	1.2628	999.2	1709	.684
2600	1.2446-5	1310.2	11.0685	26.553	794	1.5418	-1.0226	5.6483	1.1226	956.0	11040	.406	1.4919	1.2656	1015.1	1750	.677
2650	1.2078-5	1604.0	11.1805	26.264	802	1.6119	-1.0262	6.1104	1.1216	970.0	12541	.391	1.4940	1.2689	1031.7	1794	.668
2700	1.1711-5	1921.6	11.2992	25.947	810	1.6860	-1.0301	6.5936	1.1211	984.9	14123	.378	1.4962	1.2725	1049.3	1841	.658
2750	1.1347-5	2263.6	11.4247	25.605	818	1.7628	-1.0344	7.0903	1.1210	1000.5	15737	.369	1.4986	1.2766	1067.7	1892	.648
2800	1.0984-5	2630.6	11.5569	25.237	826	1.8403	-1.0389	7.5881	1.1213	1017.0	17320	.362	1.5011	1.2812	1087.1	1948	.636
2850	1.0625-5	3022.1	11.6955	24.848	833	1.9154	-1.0434	8.0683	1.1220	1034.4	18793	.358	1.5037	1.2862	1107.5	2008	.624
2900	1.0271-5	3436.8	11.8397	24.441	841	1.9843	-1.0478	8.5066	1.1231	1052.6	20068	.357	1.5066	1.2917	1128.8	2072	.612
2950	9.9231-6	3871.6	11.9884	24.021	849	2.0426	-1.0519	8.8737	1.1247	1071.7	21054	.358	1.5096	1.2975	1151.0	2140	.599
3000	9.5845-6	4322.4	12.1399	23.594	857	2.0857	-1.0552	9.1386	1.1267	1091.4	21673	.361	1.5128	1.3037	1174.0	2211	.586

TABLE 26.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.065658; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8504-4	-2457.2	8.3283	28.436	390	1.0000	-1.0000	1.2640	1.3009	585.1	660	.746	1.2640	1.3009	585.1	660	.746
950	3.6478-4	-2393.6	8.3971	28.436	405	1.0000	-1.0000	1.2784	1.2965	600.1	696	.745	1.2784	1.2965	600.1	696	.745
1000	3.4654-4	-2329.3	8.4630	28.436	420	1.0000	-1.0000	1.2922	1.2925	614.7	731	.744	1.2922	1.2925	614.7	731	.744
1050	3.3004-4	-2264.4	8.5264	28.436	435	1.0000	-1.0000	1.3050	1.2888	629.0	765	.742	1.3049	1.2888	629.0	765	.742
1100	3.1503-4	-2198.8	8.5873	28.436	450	1.0000	-1.0000	1.3172	1.2853	643.0	799	.741	1.3171	1.2853	643.0	799	.741
1150	3.0134-4	-2132.7	8.6462	28.436	464	1.0000	-1.0000	1.3290	1.2821	656.6	833	.740	1.3287	1.2821	656.6	832	.740
1200	2.8878-4	-2066.0	8.7030	28.436	478	1.0000	-1.0000	1.3403	1.2790	669.9	866	.740	1.3398	1.2792	669.9	865	.740
1250	2.7723-4	-1998.6	8.7579	28.436	491	1.0001	-1.0000	1.3514	1.2761	683.0	899	.739	1.3504	1.2764	683.0	898	.739
1300	2.6656-4	-1930.8	8.8111	28.436	505	1.0001	-1.0000	1.3623	1.2734	695.7	933	.738	1.3604	1.2738	695.8	931	.738
1350	2.5669-4	-1862.4	8.8627	28.435	518	1.0002	-1.0000	1.3732	1.2707	708.2	966	.737	1.3700	1.2713	708.4	963	.737
1400	2.4752-4	-1793.5	8.9129	28.435	532	1.0004	-1.0000	1.3845	1.2680	720.5	1000	.736	1.3791	1.2691	720.8	995	.736
1450	2.3898-4	-1724.0	8.9617	28.435	545	1.0006	-1.0000	1.3964	1.2653	732.4	1035	.734	1.3878	1.2669	732.9	1027	.736
1500	2.3101-4	-1653.8	9.0092	28.434	557	1.0010	-1.0000	1.4093	1.2624	744.1	1072	.733	1.3961	1.2649	744.9	1059	.735
1550	2.2355-4	-1583.0	9.0557	28.433	570	1.0015	-1.0000	1.4239	1.2594	755.5	1110	.731	1.4039	1.2631	756.6	1090	.734
1600	2.1655-4	-1511.4	9.1011	28.431	583	1.0023	-1.0001	1.4406	1.2561	766.6	1151	.729	1.4113	1.2614	768.2	1122	.733
1650	2.0997-4	-1438.9	9.1457	28.428	595	1.0034	-1.0001	1.4603	1.2524	777.4	1195	.727	1.4184	1.2598	779.7	1153	.732
1700	2.0377-4	-1365.3	9.1897	28.425	607	1.0049	-1.0001	1.4837	1.2484	787.9	1244	.724	1.4251	1.2583	791.0	1183	.731
1750	1.9791-4	-1290.4	9.2331	28.420	619	1.0069	-1.0002	1.5117	1.2438	798.0	1298	.721	1.4314	1.2569	802.2	1214	.730
1800	1.9237-4	-1214.0	9.2761	28.414	631	1.0096	-1.0003	1.5453	1.2388	807.8	1360	.717	1.4374	1.2556	813.2	1244	.729
1850	1.8711-4	-1135.8	9.3190	28.405	643	1.0130	-1.0004	1.5856	1.2332	817.2	1430	.713	1.4431	1.2544	824.2	1274	.728
1900	1.8212-4	-1055.3	9.3619	28.393	655	1.0173	-1.0005	1.6336	1.2271	826.3	1511	.708	1.4485	1.2534	835.1	1304	.727
1950	1.7736-4	-972.3	9.4050	28.379	666	1.0228	-1.0007	1.6904	1.2205	835.0	1605	.702	1.4535	1.2525	845.9	1334	.726
2000	1.7281-4	-886.1	9.4487	28.360	677	1.0295	-1.0009	1.7571	1.2135	843.5	1714	.695	1.4582	1.2516	856.7	1363	.725
2050	1.6845-4	-796.4	9.4930	28.337	689	1.0376	-1.0011	1.8347	1.2063	851.8	1840	.687	1.4627	1.2509	867.4	1392	.724
2100	1.6428-4	-702.5	9.5382	28.308	700	1.0474	-1.0015	1.9241	1.1990	860.0	1987	.678	1.4668	1.2504	878.2	1421	.722
2150	1.6026-4	-603.8	9.5847	28.273	711	1.0589	-1.0019	2.0260	1.1917	868.0	2157	.667	1.4707	1.2499	889.0	1449	.721
2200	1.5638-4	-499.7	9.6326	28.230	721	1.0724	-1.0024	2.1410	1.1846	876.1	2355	.656	1.4743	1.2496	899.8	1478	.720
2250	1.5263-4	-389.5	9.6821	28.179	732	1.0880	-1.0030	2.2694	1.1778	884.2	2583	.643	1.4776	1.2495	910.8	1506	.718
2300	1.4899-4	-272.5	9.7335	28.120	742	1.1057	-1.0036	2.4111	1.1714	892.5	2845	.629	1.4807	1.2495	921.8	1534	.716
2350	1.4546-4	-148.1	9.7870	28.050	752	1.1257	-1.0044	2.5661	1.1654	901.0	3146	.614	1.4835	1.2497	933.0	1563	.714
2400	1.4202-4	-15.7	9.8427	27.969	762	1.1480	-1.0053	2.7337	1.1601	909.7	3489	.597	1.4861	1.2500	944.4	1591	.712
2450	1.3866-4	125.5	9.9009	27.877	772	1.1726	-1.0064	2.9134	1.1552	918.8	3879	.580	1.4885	1.2506	955.9	1620	.710
2500	1.3538-4	275.8	9.9617	27.773	782	1.1995	-1.0076	3.1041	1.1510	928.1	4320	.562	1.4907	1.2513	967.7	1649	.707
2550	1.3217-4	436.0	10.0251	27.655	791	1.2286	-1.0089	3.3050	1.1474	937.9	4817	.543	1.4927	1.2522	979.8	1678	.704
2600	1.2901-4	606.5	10.0913	27.524	801	1.2600	-1.0104	3.5152	1.1443	948.0	5374	.524	1.4945	1.2533	992.1	1709	.700
2650	1.2591-4	787.7	10.1603	27.380	810	1.2935	-1.0120	3.7339	1.1417	958.5	5995	.504	1.4963	1.2546	1004.8	1740	.697
2700	1.2286-4	980.0	10.2322	27.221	819	1.3291	-1.0138	3.9607	1.1395	969.4	6683	.485	1.4979	1.2562	1017.8	1771	.692
2750	1.1986-4	1183.9	10.3071	27.048	828	1.3669	-1.0157	4.1953	1.1379	980.8	7440	.467	1.4994	1.2579	1031.2	1804	.688
2800	1.1691-4	1399.7	10.3848	26.860	836	1.4069	-1.0179	4.4377	1.1366	992.5	8266	.449	1.5009	1.2598	1045.0	1839	.683
2850	1.1399-4	1627.8	10.4655	26.658	845	1.4490	-1.0202	4.6877	1.1357	1004.7	9158	.433	1.5024	1.2620	1059.1	1875	.677
2900	1.1111-4	1868.6	10.5493	26.440	853	1.4931	-1.0228	4.9451	1.1351	1017.4	10109	.417	1.5038	1.2644	1073.8	1912	.671
2950	1.0827-4	2122.4	10.6361	26.208	862	1.5393	-1.0255	5.2095	1.1348	1030.5	11111	.404	1.5054	1.2670	1088.9	1953	.664
3000	1.0546-4	2389.6	10.7259	25.961	870	1.5870	-1.0284	5.4792	1.1348	1044.2	12149	.392	1.5070	1.2699	1104.6	1995	.657

TABLE 26.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.065658; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8504-3	-2457.2	7.6551	28.436	390	1.0000	-1.0000	1.2640	1.3009	585.1	660	.746	1.2640	1.3009	585.1	660	.746
950	3.6478-3	-2393.6	7.7238	28.436	405	1.0000	-1.0000	1.2784	1.2965	600.1	696	.745	1.2784	1.2965	600.1	696	.745
1000	3.4654-3	-2329.3	7.7897	28.436	420	1.0000	-1.0000	1.2922	1.2925	614.7	731	.744	1.2922	1.2925	614.7	731	.744
1050	3.3004-3	-2264.4	7.8531	28.436	435	1.0000	-1.0000	1.3049	1.2888	629.0	765	.742	1.3049	1.2888	629.0	765	.742
1100	3.1503-3	-2198.8	7.9141	28.436	450	1.0000	-1.0000	1.3172	1.2853	643.0	799	.741	1.3171	1.2853	643.0	799	.741
1150	3.0134-3	-2132.7	7.9729	28.436	464	1.0000	-1.0000	1.3288	1.2821	656.6	832	.740	1.3287	1.2821	656.6	832	.740
1200	2.8878-3	-2066.0	8.0297	28.436	478	1.0000	-1.0000	1.3401	1.2791	669.9	866	.740	1.3398	1.2792	669.9	865	.740
1250	2.7723-3	-1998.7	8.0846	28.436	491	1.0000	-1.0000	1.3509	1.2763	683.0	899	.739	1.3504	1.2764	683.0	898	.739
1300	2.6657-3	-1930.9	8.1378	28.436	505	1.0001	-1.0000	1.3613	1.2736	695.8	932	.738	1.3604	1.2738	695.8	931	.738
1350	2.5669-3	-1862.6	8.1894	28.436	518	1.0001	-1.0000	1.3716	1.2710	708.3	965	.737	1.3700	1.2713	708.4	963	.737
1400	2.4752-3	-1793.7	8.2394	28.435	532	1.0002	-1.0000	1.3817	1.2685	720.6	998	.736	1.3791	1.2691	720.8	995	.736
1450	2.3899-3	-1724.4	8.2881	28.435	545	1.0003	-1.0000	1.3920	1.2661	732.7	1031	.735	1.3878	1.2669	732.9	1027	.736
1500	2.3102-3	-1654.5	8.3355	28.435	557	1.0005	-1.0000	1.4025	1.2637	744.5	1065	.734	1.3961	1.2649	744.9	1059	.735
1550	2.2356-3	-1584.1	8.3816	28.434	570	1.0007	-1.0000	1.4136	1.2613	756.1	1100	.733	1.4039	1.2631	756.6	1090	.734
1600	2.1657-3	-1513.1	8.4267	28.433	583	1.0011	-1.0000	1.4255	1.2587	767.4	1136	.731	1.4114	1.2613	768.2	1122	.733
1650	2.1000-3	-1441.6	8.4708	28.432	595	1.0016	-1.0000	1.4386	1.2561	778.5	1173	.730	1.4184	1.2597	779.6	1153	.732
1700	2.0381-3	-1369.3	8.5139	28.431	607	1.0023	-1.0001	1.4534	1.2533	789.4	1212	.728	1.4251	1.2582	790.9	1183	.731
1750	1.9797-3	-1296.2	8.5563	28.428	619	1.0033	-1.0001	1.4702	1.2502	799.9	1254	.726	1.4315	1.2568	802.0	1214	.730
1800	1.9245-3	-1222.2	8.5980	28.425	631	1.0045	-1.0001	1.4895	1.2469	810.3	1299	.724	1.4375	1.2555	813.0	1244	.729
1850	1.8722-3	-1147.2	8.6391	28.421	643	1.0061	-1.0002	1.5118	1.2434	820.3	1348	.721	1.4432	1.2542	823.9	1274	.728
1900	1.8226-3	-1071.0	8.6797	28.416	655	1.0082	-1.0002	1.5377	1.2394	830.1	1401	.719	1.4486	1.2531	834.7	1304	.727
1950	1.7754-3	-993.3	8.7200	28.409	666	1.0108	-1.0003	1.5677	1.2352	839.6	1460	.715	1.4537	1.2521	845.3	1333	.726
2000	1.7305-3	-914.1	8.7602	28.400	678	1.0139	-1.0004	1.6024	1.2306	848.9	1526	.712	1.4585	1.2511	855.9	1363	.725
2050	1.6876-3	-833.0	8.8002	28.389	689	1.0178	-1.0005	1.6423	1.2258	857.9	1599	.708	1.4631	1.2503	866.4	1392	.724
2100	1.6467-3	-749.8	8.8403	28.375	700	1.0224	-1.0007	1.6879	1.2207	866.7	1681	.703	1.4674	1.2495	876.9	1420	.723
2150	1.6074-3	-664.1	8.8806	28.358	711	1.0280	-1.0009	1.7397	1.2154	875.3	1772	.698	1.4714	1.2488	887.3	1449	.722
2200	1.5698-3	-575.7	8.9213	28.338	722	1.0344	-1.0011	1.7980	1.2099	883.7	1875	.692	1.4752	1.2483	897.6	1477	.721
2250	1.5336-3	-484.2	8.9624	28.314	733	1.0420	-1.0014	1.8633	1.2044	892.1	1990	.686	1.4787	1.2478	908.0	1505	.720
2300	1.4987-3	-389.3	9.0041	28.285	743	1.0506	-1.0017	1.9355	1.1989	900.3	2119	.679	1.4820	1.2474	918.3	1533	.719
2350	1.4651-3	-290.5	9.0466	28.251	754	1.0604	-1.0021	2.0150	1.1935	908.5	2264	.671	1.4851	1.2472	928.7	1561	.717
2400	1.4326-3	-187.6	9.0899	28.212	764	1.0715	-1.0025	2.1016	1.1883	916.8	2424	.663	1.4879	1.2470	939.1	1589	.716
2450	1.4011-3	-80.2	9.1342	28.167	775	1.0838	-1.0030	2.1952	1.1833	925.1	2603	.653	1.4906	1.2469	949.6	1616	.714
2500	1.3706-3	32.0	9.1795	28.116	785	1.0974	-1.0036	2.2954	1.1786	933.5	2800	.643	1.4930	1.2470	960.2	1644	.713
2550	1.3409-3	149.4	9.2260	28.058	795	1.1123	-1.0042	2.4018	1.1743	942.0	3019	.632	1.4953	1.2472	970.8	1672	.711
2600	1.3120-3	272.3	9.2738	27.992	804	1.1284	-1.0050	2.5139	1.1702	950.7	3260	.620	1.4974	1.2474	981.5	1700	.709
2650	1.2839-3	400.9	9.3228	27.919	814	1.1457	-1.0058	2.6310	1.1666	959.5	3523	.608	1.4993	1.2478	992.4	1727	.707
2700	1.2565-3	535.4	9.3731	27.839	824	1.1641	-1.0066	2.7523	1.1634	968.6	3811	.595	1.5011	1.2484	1003.3	1755	.704
2750	1.2297-3	676.2	9.4247	27.750	833	1.1836	-1.0076	2.8771	1.1605	977.9	4125	.581	1.5028	1.2490	1014.5	1783	.702
2800	1.2036-3	823.2	9.4777	27.653	842	1.2042	-1.0086	3.0048	1.1581	987.4	4466	.567	1.5043	1.2498	1025.8	1811	.700
2850	1.1780-3	976.7	9.5320	27.548	852	1.2256	-1.0097	3.1345	1.1559	997.1	4835	.552	1.5057	1.2507	1037.2	1840	.697
2900	1.1529-3	1136.7	9.5877	27.435	861	1.2479	-1.0109	3.2657	1.1542	1007.2	5234	.537	1.5070	1.2517	1048.9	1868	.694
2950	1.1284-3	1303.3	9.6446	27.314	870	1.2710	-1.0122	3.3981	1.1528	1017.4	5664	.522	1.5083	1.2529	1060.7	1898	.691
3000	1.1043-3	1476.5	9.7028	27.184	878	1.2949	-1.0136	3.5312	1.1516	1027.9	6124	.506	1.5094	1.2541	1072.7	1927	.688

TABLE 26.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.065658; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9252-2	-2457.2	7.1845	28.436	390	1.0000	-1.0000	1.2640	1.3009	585.1	660	.746	1.2640	1.3009	585.1	660	.746
950	1.8239-2	-2393.6	7.2532	28.436	405	1.0000	-1.0000	1.2784	1.2965	600.1	696	.745	1.2784	1.2965	600.1	696	.745
1000	1.7327-2	-2329.3	7.3191	28.436	420	1.0000	-1.0000	1.2922	1.2925	614.7	731	.744	1.2922	1.2925	614.7	731	.744
1050	1.6502-2	-2264.4	7.3825	28.436	435	1.0000	-1.0000	1.3049	1.2888	629.0	765	.742	1.3049	1.2888	629.0	765	.742
1100	1.5752-2	-2198.8	7.4435	28.436	450	1.0000	-1.0000	1.3171	1.2853	643.0	799	.741	1.3171	1.2853	643.0	799	.741
1150	1.5067-2	-2132.7	7.5023	28.436	464	1.0000	-1.0000	1.3288	1.2821	656.6	832	.740	1.3287	1.2821	656.6	832	.740
1200	1.4439-2	-2066.0	7.5591	28.436	478	1.0000	-1.0000	1.3400	1.2791	669.9	866	.740	1.3398	1.2792	669.9	865	.740
1250	1.3862-2	-1998.7	7.6140	28.436	491	1.0000	-1.0000	1.3507	1.2763	683.0	899	.739	1.3504	1.2764	683.0	898	.739
1300	1.3328-2	-1930.9	7.6672	28.436	505	1.0000	-1.0000	1.3610	1.2737	695.8	931	.738	1.3604	1.2738	695.8	931	.738
1350	1.2835-2	-1862.6	7.7188	28.436	518	1.0001	-1.0000	1.3710	1.2711	708.3	964	.737	1.3700	1.2713	708.4	963	.737
1400	1.2376-2	-1793.8	7.7688	28.436	532	1.0001	-1.0000	1.3807	1.2687	720.7	997	.736	1.3791	1.2691	720.8	995	.736
1450	1.1949-2	-1724.5	7.8174	28.435	545	1.0002	-1.0000	1.3903	1.2664	732.8	1030	.735	1.3878	1.2669	732.9	1027	.736
1500	1.1551-2	-1654.8	7.8647	28.435	557	1.0003	-1.0000	1.4000	1.2642	744.6	1063	.734	1.3961	1.2649	744.8	1059	.735
1550	1.1178-2	-1584.5	7.9108	28.435	570	1.0004	-1.0000	1.4098	1.2620	756.3	1096	.733	1.4039	1.2631	756.6	1090	.734
1600	1.0829-2	-1513.8	7.9557	28.434	583	1.0007	-1.0000	1.4199	1.2597	767.7	1130	.732	1.4114	1.2613	768.2	1122	.733
1650	1.0500-2	-1442.5	7.9995	28.434	595	1.0010	-1.0000	1.4307	1.2575	778.9	1165	.731	1.4184	1.2597	779.6	1153	.732
1700	1.0191-2	-1370.7	8.0424	28.433	607	1.0014	-1.0000	1.4423	1.2552	789.9	1201	.729	1.4252	1.2582	790.9	1183	.731
1750	9.8995-3	-1298.3	8.0844	28.431	619	1.0020	-1.0000	1.4549	1.2527	800.7	1238	.728	1.4315	1.2567	802.0	1214	.730
1800	9.6239-3	-1225.2	8.1256	28.429	631	1.0027	-1.0001	1.4690	1.2501	811.2	1277	.726	1.4376	1.2554	812.9	1244	.730
1850	9.3630-3	-1151.4	8.1660	28.427	643	1.0037	-1.0001	1.4848	1.2474	821.6	1318	.724	1.4433	1.2542	823.8	1274	.729
1900	9.1156-3	-1076.7	8.2059	28.424	655	1.0049	-1.0001	1.5026	1.2445	831.7	1362	.722	1.4487	1.2530	834.5	1304	.728
1950	8.8805-3	-1001.1	8.2451	28.420	666	1.0064	-1.0002	1.5228	1.2413	841.5	1409	.720	1.4538	1.2519	845.1	1333	.727
2000	8.6569-3	-924.4	8.2840	28.414	678	1.0083	-1.0002	1.5457	1.2380	851.2	1460	.718	1.4587	1.2509	855.6	1363	.726
2050	8.4438-3	-846.4	8.3225	28.408	689	1.0106	-1.0003	1.5717	1.2344	860.6	1515	.715	1.4632	1.2500	866.0	1392	.725
2100	8.2404-3	-767.1	8.3607	28.400	700	1.0134	-1.0004	1.6011	1.2306	869.8	1575	.712	1.4676	1.2492	876.4	1420	.724
2150	8.0459-3	-686.3	8.3987	28.390	711	1.0167	-1.0005	1.6342	1.2266	878.8	1640	.709	1.4716	1.2485	886.6	1449	.723
2200	7.8597-3	-603.6	8.4367	28.377	722	1.0206	-1.0007	1.6713	1.2224	887.7	1712	.705	1.4755	1.2478	896.8	1477	.722
2250	7.6811-3	-519.1	8.4747	28.363	733	1.0251	-1.0008	1.7127	1.2181	896.3	1791	.701	1.4791	1.2472	907.0	1505	.721
2300	7.5096-3	-432.3	8.5129	28.346	744	1.0303	-1.0010	1.7584	1.2137	904.9	1877	.697	1.4825	1.2467	917.1	1533	.719
2350	7.3445-3	-343.1	8.5512	28.325	754	1.0363	-1.0012	1.8087	1.2093	913.3	1972	.692	1.4857	1.2462	927.2	1561	.718
2400	7.1855-3	-251.3	8.5899	28.302	765	1.0430	-1.0015	1.8636	1.2048	921.7	2076	.687	1.4887	1.2459	937.2	1588	.717
2450	7.0321-3	-156.7	8.6289	28.275	775	1.0506	-1.0018	1.9232	1.2004	930.0	2190	.681	1.4915	1.2456	947.3	1616	.716
2500	6.8838-3	-59.0	8.6684	28.243	786	1.0590	-1.0021	1.9873	1.1962	938.3	2314	.674	1.4941	1.2454	957.4	1643	.714
2550	6.7404-3	42.1	8.7084	28.208	796	1.0683	-1.0025	2.0558	1.1920	946.5	2450	.668	1.4965	1.2453	967.5	1671	.713
2600	6.6014-3	146.7	8.7490	28.168	806	1.0784	-1.0030	2.1284	1.1881	954.9	2597	.660	1.4988	1.2452	977.6	1698	.711
2650	6.4665-3	255.0	8.7903	28.123	816	1.0894	-1.0035	2.2050	1.1843	963.3	2757	.652	1.5009	1.2453	987.7	1726	.709
2700	6.3354-3	367.2	8.8323	28.073	825	1.1011	-1.0040	2.2850	1.1809	971.7	2929	.644	1.5029	1.2454	998.0	1753	.708
2750	6.2080-3	483.6	8.8749	28.018	835	1.1137	-1.0046	2.3680	1.1776	980.3	3114	.635	1.5047	1.2457	1008.3	1780	.706
2800	6.0840-3	604.1	8.9184	27.957	845	1.1270	-1.0052	2.4536	1.1747	989.0	3313	.626	1.5064	1.2460	1018.6	1807	.704
2850	5.9631-3	728.9	8.9626	27.891	854	1.1411	-1.0059	2.5411	1.1721	997.9	3525	.616	1.5080	1.2464	1029.0	1834	.702
2900	5.8452-3	858.2	9.0075	27.819	863	1.1557	-1.0067	2.6301	1.1697	1006.9	3753	.605	1.5094	1.2469	1039.6	1860	.701
2950	5.7301-3	992.0	9.0533	27.741	873	1.1709	-1.0075	2.7201	1.1676	1016.1	3995	.594	1.5108	1.2475	1050.2	1887	.699
3000	5.6177-3	1130.2	9.0997	27.658	882	1.1866	-1.0083	2.8105	1.1659	1025.4	4252	.583	1.5121	1.2481	1061.0	1914	.697

TABLE 26C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.065658; EQUIV.RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.082-5	-3568.3	6.7616	28.436	1.0720	1.861-5	30.539	129	1.000	-1.000	0.9723	1.3889	275	170	.734	200
220	1.888-5	-3543.8	6.8783	28.436	1.5522	1.690-5	30.508	139	1.000	-1.000	0.9769	1.3869	288	186	.731	220
240	1.689-5	-3485.2	7.1308	28.436	5.5968	1.534-5	30.205	147	1.000	-1.000	0.9931	1.3835	302	199	.736	240
						PRESSURE = 0.10 ATM										
200	2.083-4	-3568.5	6.2004	28.436	1.0390	1.861-4	30.540	129	1.000	-1.000	0.9722	1.3889	275	170	.734	200
220	1.893-4	-3547.3	6.3016	28.436	1.1035	1.692-4	30.537	140	1.000	-1.000	0.9757	1.3871	288	187	.730	220
240	1.731-4	-3522.4	6.4097	28.436	1.5037	1.549-4	30.507	150	1.000	-1.000	0.9805	1.3849	301	202	.728	240
260	1.571-4	-3475.4	6.5966	28.436	3.8136	1.420-4	30.299	159	1.000	-1.000	0.9929	1.3819	314	216	.730	260
280	1.343-4	-3304.2	7.2263	28.436	11.9610	1.276-4	29.320	160	1.000	-1.000	1.0392	1.3753	330	221	.752	280
						PRESSURE = 1.00 ATM										
200	2.082-3	-3568.6	5.6401	28.436	1.0357	1.861-3	30.541	129	1.000	-1.000	0.9722	1.3889	275	170	.734	200
220	1.893-3	-3547.6	5.7398	28.436	1.0588	1.692-3	30.540	140	1.000	-1.000	0.9756	1.3871	288	187	.730	220
240	1.735-3	-3526.0	5.8339	28.436	1.1158	1.551-3	30.537	151	1.000	-1.000	0.9793	1.3851	301	203	.727	240
260	1.599-3	-3501.9	5.9304	28.436	1.3553	1.430-3	30.516	161	1.000	-1.000	0.9839	1.3829	313	218	.725	260
280	1.473-3	-3432.8	6.1844	28.436	2.2115	1.324-3	30.419	170	1.000	-1.000	0.9919	1.3804	325	233	.726	280
298	1.353-3	-3380.2	6.3659	28.436	3.8332	1.232-3	30.151	177	1.000	-1.000	1.0069	1.3772	336	243	.731	298
300	1.340-3	-3372.9	6.3905	28.436	4.0988	1.223-3	30.106	177	1.000	-1.000	1.0092	1.3768	338	244	.733	300
320	1.167-3	-3247.1	6.7944	28.436	9.3987	1.114-3	29.246	179	1.000	-1.000	1.0511	1.3708	353	250	.753	320
						PRESSURE = 10.00 ATM										
200	2.078-2	-3568.6	5.0800	28.436	1.0354	1.861-2	30.541	129	1.000	-1.000	0.9722	1.3889	275	170	.734	200
220	1.889-2	-3547.7	5.1796	28.436	1.0543	1.692-2	30.541	140	1.000	-1.000	0.9756	1.3871	288	187	.730	220
240	1.732-2	-3526.4	5.2722	28.436	1.0772	1.551-2	30.540	151	1.000	-1.000	0.9792	1.3851	301	203	.727	240
260	1.599-2	-3504.5	5.3599	28.436	1.1187	1.431-2	30.538	161	1.000	-1.000	0.9830	1.3831	313	219	.724	260
280	1.484-2	-3444.4	5.5807	28.436	1.4161	1.329-2	30.528	171	1.000	-1.000	0.9874	1.3809	325	234	.723	280
298	1.391-2	-3417.5	5.6737	28.436	1.5667	1.247-2	30.502	180	1.000	-1.000	0.9922	1.3788	335	247	.723	298
300	1.382-2	-3414.6	5.6834	28.436	1.5902	1.239-2	30.497	181	1.000	-1.000	0.9928	1.3785	336	248	.723	300
320	1.287-2	-3379.3	5.7973	28.436	1.9948	1.158-2	30.411	190	1.000	-1.000	1.0007	1.3759	347	261	.726	320
340	1.191-2	-3332.0	5.9404	28.436	2.8301	1.083-2	30.208	197	1.000	-1.000	1.0137	1.3727	358	273	.731	340
360	1.086-2	-3260.9	6.1432	28.436	4.4600	1.008-2	29.783	202	1.000	-1.000	1.0366	1.3685	371	283	.741	360
380	9.595-3	-3143.1	6.4606	28.436	7.6952	9.295-3	28.982	204	1.000	-1.000	1.0775	1.3628	385	291	.757	380
						PRESSURE = 50.00 ATM										
200	1.029-1	-3568.6	4.6885	28.436	1.0354	9.305-2	30.541	129	1.000	-1.000	0.9722	1.3889	275	170	.734	200
220	9.364-2	-3547.7	4.7880	28.436	1.0539	8.459-2	30.541	140	1.000	-1.000	0.9756	1.3871	288	187	.730	220
240	8.591-2	-3526.4	4.8806	28.436	1.0738	7.754-2	30.541	151	1.000	-1.000	0.9792	1.3851	301	203	.727	240
260	7.936-2	-3504.7	4.9674	28.436	1.0978	7.157-2	30.540	161	1.000	-1.000	0.9830	1.3831	313	219	.724	260
280	7.378-2	-3445.4	5.1853	28.436	1.3467	6.646-2	30.538	171	1.000	-1.000	0.9870	1.3809	324	234	.723	280
298	6.929-2	-3420.7	5.2707	28.436	1.3774	6.240-2	30.533	180	1.000	-1.000	0.9910	1.3789	335	247	.722	298
300	6.887-2	-3418.2	5.2793	28.436	1.3823	6.201-2	30.532	181	1.000	-1.000	0.9914	1.3787	336	249	.722	300
320	6.450-2	-3389.8	5.3708	28.436	1.4639	5.811-2	30.515	191	1.000	-1.000	0.9964	1.3764	346	262	.723	320
340	6.054-2	-3359.1	5.4638	28.436	1.6243	5.461-2	30.474	199	1.000	-1.000	1.0026	1.3739	357	276	.725	340
360	5.682-2	-3324.0	5.5640	28.436	1.9077	5.144-2	30.389	208	1.000	-1.000	1.0107	1.3712	367	288	.728	360
380	5.317-2	-3281.6	5.6786	28.436	2.3716	4.847-2	30.229	215	1.000	-1.000	1.0223	1.3681	378	301	.732	380
400	4.941-2	-3227.4	5.8174	28.436	3.0972	4.563-2	29.952	221	1.000	-1.000	1.0392	1.3645	389	312	.737	400
420	4.536-2	-3155.1	5.9935	28.436	4.2154	4.281-2	29.507	226	1.000	-1.000	1.0640	1.3602	401	323	.746	420

TABLE 27.1D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	1.7323-5	-3255.5	7.9993	28.430	111	1.0000	-1.0000	1.0661	1.3780	283.9	149 .790	1.0661	1.3780	283.9	149 .790
210	1.6498-5	-3244.8	8.0513	28.430	116	1.0000	-1.0000	1.0679	1.3771	290.8	158 .785	1.0679	1.3771	290.8	158 .785
220	1.5748-5	-3234.1	8.1010	28.430	122	1.0000	-1.0000	1.0699	1.3762	297.6	167 .781	1.0699	1.3762	297.6	167 .781
230	1.5064-5	-3223.4	8.1486	28.430	127	1.0000	-1.0000	1.0720	1.3752	304.1	175 .777	1.0719	1.3752	304.1	175 .777
240	1.4436-5	-3212.7	8.1943	28.430	132	1.0000	-1.0000	1.0741	1.3741	310.6	183 .774	1.0741	1.3742	310.6	183 .774
250	1.3859-5	-3202.0	8.2382	28.430	137	1.0000	-1.0000	1.0764	1.3731	316.8	192 .772	1.0763	1.3731	316.8	192 .772
260	1.3326-5	-3191.2	8.2805	28.430	143	1.0000	-1.0000	1.0788	1.3719	323.0	200 .769	1.0785	1.3720	323.0	200 .770
270	1.2832-5	-3180.4	8.3212	28.430	148	1.0000	-1.0000	1.0814	1.3707	329.0	208 .767	1.0809	1.3709	329.0	208 .768
280	1.2374-5	-3169.5	8.3606	28.430	153	1.0001	-1.0000	1.0842	1.3695	334.9	216 .765	1.0833	1.3698	334.9	216 .767
290	1.1947-5	-3158.7	8.3987	28.430	158	1.0001	-1.0000	1.0873	1.3681	340.6	224 .763	1.0858	1.3686	340.7	223 .766
298	1.1620-5	-3149.8	8.4289	28.430	162	1.0002	-1.0000	1.0901	1.3669	345.2	231 .761	1.0879	1.3676	345.3	230 .765
300	1.1549-5	-3147.8	8.4356	28.429	162	1.0002	-1.0000	1.0908	1.3666	346.3	233 .761	1.0884	1.3674	346.4	231 .765
310	1.1176-5	-3136.9	8.4714	28.429	167	1.0004	-1.0000	1.0949	1.3649	351.8	241 .758	1.0911	1.3662	351.9	239 .765
320	1.0827-5	-3125.9	8.5063	28.429	172	1.0006	-1.0000	1.0997	1.3629	357.1	251 .755	1.0938	1.3650	357.4	246 .765
330	1.0498-5	-3114.9	8.5402	28.428	177	1.0010	-1.0000	1.1056	1.3606	362.4	260 .750	1.0966	1.3637	362.8	253 .765
340	1.0189-5	-3103.8	8.5733	28.427	181	1.0015	-1.0001	1.1127	1.3580	367.5	271 .743	1.0994	1.3625	368.1	261 .765
350	9.8975-6	-3092.6	8.6057	28.425	186	1.0023	-1.0001	1.1216	1.3548	372.4	284 .735	1.1024	1.3612	373.3	268 .765
360	9.6218-6	-3081.3	8.6374	28.423	191	1.0033	-1.0001	1.1326	1.3511	377.2	299 .723	1.1054	1.3599	378.4	276 .764
370	9.3607-6	-3070.0	8.6687	28.420	195	1.0047	-1.0002	1.1464	1.3467	381.8	316 .708	1.1084	1.3586	383.5	283 .763
380	9.1130-6	-3058.4	8.6994	28.416	200	1.0066	-1.0002	1.1633	1.3416	386.2	336 .690	1.1116	1.3573	388.5	291 .762
390	8.8776-6	-3046.7	8.7299	28.410	204	1.0091	-1.0003	1.1843	1.3356	390.4	360 .670	1.1149	1.3559	393.4	299 .760
400	8.6533-6	-3034.7	8.7602	28.402	208	1.0122	-1.0005	1.2099	1.3288	394.5	389 .648	1.1182	1.3546	398.3	307 .759
410	8.4393-6	-3022.5	8.7905	28.393	213	1.0162	-1.0006	1.2409	1.3211	398.3	423 .625	1.1217	1.3533	403.1	315 .758
420	8.2347-6	-3009.9	8.8208	28.380	217	1.0212	-1.0009	1.2781	1.3127	401.9	462 .601	1.1253	1.3520	407.9	323 .756
430	8.0386-6	-2996.9	8.8514	28.364	221	1.0274	-1.0011	1.3221	1.3036	405.4	507 .577	1.1290	1.3507	412.6	331 .755
440	7.8503-6	-2983.4	8.8823	28.344	225	1.0348	-1.0015	1.3735	1.2940	408.7	558 .555	1.1329	1.3494	417.3	339 .753
450	7.6691-6	-2969.4	8.9139	28.319	230	1.0435	-1.0019	1.4329	1.2841	411.9	616 .534	1.1369	1.3481	422.0	348 .751
460	7.4944-6	-2954.7	8.9461	28.288	234	1.0537	-1.0024	1.5002	1.2741	415.0	680 .516	1.1411	1.3469	426.7	356 .749
470	7.3256-6	-2939.3	8.9791	28.252	238	1.0654	-1.0029	1.5755	1.2644	418.2	747 .501	1.1455	1.3457	431.4	365 .746
480	7.1621-6	-2923.2	9.0132	28.210	242	1.0784	-1.0036	1.6580	1.2549	421.4	818 .490	1.1501	1.3446	436.1	374 .743
490	7.0036-6	-2906.2	9.0482	28.160	246	1.0926	-1.0043	1.7466	1.2461	424.6	889 .483	1.1549	1.3434	440.9	384 .740
500	6.8497-6	-2888.2	9.0845	28.103	250	1.1078	-1.0051	1.8394	1.2381	428.0	959 .480	1.1599	1.3424	445.6	394 .736
510	6.7000-6	-2869.4	9.1218	28.039	254	1.1233	-1.0059	1.9339	1.2309	431.4	1023 .480	1.1651	1.3414	450.4	405 .731
520	6.5545-6	-2849.6	9.1603	27.968	258	1.1387	-1.0068	2.0267	1.2247	435.1	1079 .485	1.1705	1.3405	455.2	416 .726
530	6.4130-6	-2828.9	9.1997	27.890	262	1.1532	-1.0076	2.1133	1.2196	439.0	1123 .493	1.1760	1.3396	460.1	427 .721
540	6.2754-6	-2807.3	9.2399	27.807	266	1.1656	-1.0083	2.1883	1.2156	443.0	1151 .505	1.1816	1.3388	464.9	439 .716
550	6.1421-6	-2785.2	9.2806	27.720	270	1.1749	-1.0088	2.2449	1.2130	447.3	1161 .522	1.1873	1.3380	469.8	451 .710
560	6.0131-6	-2762.5	9.3214	27.631	274	1.1794	-1.0092	2.2751	1.2118	451.9	1149 .542	1.1930	1.3373	474.7	463 .705
570	5.8890-6	-2739.8	9.3617	27.544	277	1.1776	-1.0092	2.2701	1.2124	456.7	1113 .566	1.1986	1.3366	479.6	475 .700
580	5.7700-6	-2717.3	9.4008	27.461	281	1.1680	-1.0088	2.2216	1.2153	462.0	1054 .593	1.2039	1.3360	484.4	487 .695
590	5.6567-6	-2695.5	9.4380	27.386	285	1.1500	-1.0079	2.1254	1.2210	467.7	976 .621	1.2090	1.3353	489.1	499 .691

TABLE 27.1D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.5496-6	-2674.9	9.4727	27.323	289	1.1246	-1.0066	1.9876	1.2300	473.9	887	.647	1.2137	1.3346	493.6	509	.688
610	5.4487-6	-2655.8	9.5042	27.273	292	1.0952	-1.0051	1.8279	1.2422	480.6	800	.667	1.2181	1.3338	498.0	519	.685
620	5.3538-6	-2638.3	9.5327	27.237	296	1.0670	-1.0036	1.6748	1.2561	487.6	728	.680	1.2220	1.3330	502.3	529	.684
630	5.2642-6	-2622.2	9.5584	27.213	299	1.0438	-1.0024	1.5512	1.2694	494.3	676	.686	1.2256	1.3321	506.4	537	.683
640	5.1790-6	-2607.2	9.5821	27.198	303	1.0272	-1.0015	1.4649	1.2800	500.4	645	.688	1.2289	1.3311	510.3	545	.683
650	5.0977-6	-2592.8	9.6044	27.189	306	1.0164	-1.0009	1.4110	1.2870	505.8	628	.688	1.2321	1.3301	514.2	553	.683
660	5.0195-6	-2578.9	9.6257	27.184	310	1.0097	-1.0005	1.3803	1.2910	510.5	622	.687	1.2352	1.3291	518.0	560	.683
670	4.9440-6	-2565.2	9.6463	27.181	313	1.0058	-1.0003	1.3644	1.2928	514.7	622	.687	1.2382	1.3281	521.7	567	.683
680	4.8709-6	-2551.6	9.6664	27.179	316	1.0034	-1.0002	1.3573	1.2932	518.7	626	.687	1.2412	1.3271	525.4	575	.683
690	4.8002-6	-2538.0	9.6862	27.178	320	1.0020	-1.0001	1.3553	1.2929	522.4	631	.686	1.2441	1.3261	529.1	582	.684
700	4.7315-6	-2524.4	9.7057	27.178	323	1.0012	-1.0001	1.3560	1.2921	526.0	638	.686	1.2471	1.3251	532.7	589	.684
710	4.6648-6	-2510.9	9.7250	27.177	326	1.0007	-1.0000	1.3582	1.2912	529.6	646	.687	1.2500	1.3241	536.3	596	.685
720	4.5999-6	-2497.3	9.7440	27.177	330	1.0005	-1.0000	1.3612	1.2902	533.1	653	.687	1.2529	1.3231	539.9	603	.685
730	4.5369-6	-2483.7	9.7628	27.177	333	1.0003	-1.0000	1.3645	1.2892	536.6	661	.687	1.2558	1.3221	543.4	610	.686
740	4.4756-6	-2470.0	9.7814	27.177	336	1.0002	-1.0000	1.3679	1.2882	540.0	669	.687	1.2586	1.3211	546.9	617	.686
750	4.4159-6	-2456.3	9.7998	27.177	339	1.0001	-1.0000	1.3712	1.2873	543.5	677	.687	1.2615	1.3202	550.4	623	.687
760	4.3578-6	-2442.6	9.8180	27.177	343	1.0001	-1.0000	1.3743	1.2864	546.9	685	.688	1.2644	1.3192	553.8	630	.687
770	4.3012-6	-2428.8	9.8359	27.177	346	1.0000	-1.0000	1.3773	1.2856	550.3	693	.688	1.2672	1.3183	557.3	637	.688
780	4.2461-6	-2415.0	9.8537	27.177	349	1.0000	-1.0000	1.3802	1.2848	553.7	700	.688	1.2700	1.3173	560.7	644	.688
790	4.1923-6	-2401.2	9.8713	27.177	352	1.0000	-1.0000	1.3828	1.2841	557.1	708	.688	1.2728	1.3164	564.1	651	.689
800	4.1399-6	-2387.4	9.8887	27.177	355	1.0000	-1.0000	1.3852	1.2835	560.5	715	.688	1.2756	1.3155	567.4	658	.68°
810	4.0888-6	-2373.5	9.9060	27.177	359	1.0000	-1.0000	1.3875	1.2829	563.8	722	.689	1.2784	1.3146	570.8	664	.690
820	4.0389-6	-2359.6	9.9230	27.177	362	1.0000	-1.0000	1.3896	1.2823	567.2	730	.689	1.2812	1.3137	574.1	671	.691
830	3.9903-6	-2345.7	9.9399	27.177	365	1.0000	-1.0000	1.3915	1.2818	570.5	737	.689	1.2839	1.3128	577.4	678	.691
840	3.9428-6	-2331.8	9.9565	27.177	368	1.0000	-1.0000	1.3933	1.2814	573.8	743	.689	1.2867	1.3119	580.7	684	.692
850	3.8964-6	-2317.8	9.9730	27.177	371	1.0000	-1.0000	1.3949	1.2809	577.2	750	.690	1.2894	1.3111	583.9	691	.692
860	3.8511-6	-2303.9	9.9894	27.177	374	1.0000	-1.0000	1.3965	1.2805	580.4	757	.690	1.2921	1.3102	587.1	698	.693
870	3.8068-6	-2289.9	10.0055	27.177	377	1.0000	-1.0000	1.3979	1.2802	583.7	764	.690	1.2948	1.3094	590.4	704	.693
880	3.7635-6	-2275.9	10.0215	27.177	380	1.0000	-1.0000	1.3993	1.2798	587.0	770	.691	1.2975	1.3086	593.5	711	.694
890	3.7213-6	-2261.9	10.0373	27.177	383	1.0000	-1.0000	1.4005	1.2795	590.2	777	.691	1.3001	1.3077	596.7	717	.694
900	3.6799-6	-2247.9	10.0530	27.177	386	1.0000	-1.0000	1.4017	1.2792	593.5	783	.691	1.3028	1.3069	599.9	724	.695
910	3.6395-6	-2233.9	10.0685	27.177	389	1.0000	-1.0000	1.4028	1.2789	596.7	789	.691	1.3054	1.3061	603.0	730	.695
920	3.5999-6	-2219.9	10.0838	27.177	392	1.0000	-1.0000	1.4038	1.2787	599.9	796	.692	1.3080	1.3053	606.1	737	.696
930	3.5612-6	-2205.8	10.0990	27.177	395	1.0000	-1.0000	1.4048	1.2784	603.1	802	.692	1.3105	1.3045	609.2	744	.696
940	3.5233-6	-2191.8	10.1140	27.177	398	1.0000	-1.0000	1.4057	1.2782	606.3	808	.692	1.3131	1.3038	612.3	750	.697
950	3.4862-6	-2177.7	10.1289	27.177	401	1.0000	-1.0000	1.4066	1.2780	609.5	814	.693	1.3156	1.3030	615.4	757	.697
960	3.4499-6	-2163.6	10.1436	27.177	404	1.0000	-1.0000	1.4074	1.2778	612.6	820	.693	1.3181	1.3023	618.4	763	.698
970	3.4143-6	-2149.6	10.1582	27.177	407	1.0000	-1.0000	1.4082	1.2776	615.7	826	.693	1.3206	1.3015	621.5	769	.698
980	3.3795-6	-2135.5	10.1727	27.177	410	1.0000	-1.0000	1.4090	1.2774	618.9	832	.693	1.3230	1.3008	624.5	776	.699
990	3.3454-6	-2121.4	10.1870	27.177	413	1.0000	-1.0000	1.4097	1.2772	622.0	838	.694	1.3254	1.3001	627.5	782	.699

TABLE 27.1D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

T	DENSITY	H	ENTROPY	MW	VIS	REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
					MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3119-6	-2107.3	10.2011	27.177	416	1.0000	-1.0000	1.4104	1.2770	625.0	844	.694	1.3278	1.2994	630.5	789	.699
1050	3.1542-6	-2036.7	10.2700	27.177	430	1.0000	-1.0000	1.4138	1.2762	640.3	874	.695	1.3393	1.2961	645.2	821	.701
1100	3.0108-6	-1965.9	10.3359	27.177	444	1.0000	-1.0000	1.4172	1.2753	655.1	902	.697	1.3504	1.2929	659.6	853	.703
1150	2.8799-6	-1895.0	10.3990	27.177	457	1.0000	-1.0000	1.4208	1.2744	669.6	931	.698	1.3610	1.2900	673.7	884	.704
1200	2.7599-6	-1823.8	10.4595	27.177	471	1.0000	-1.0000	1.4247	1.2735	683.8	960	.699	1.3712	1.2872	687.4	916	.705
1250	2.6495-6	-1752.5	10.5178	27.177	484	1.0000	-1.0000	1.4289	1.2724	697.6	988	.700	1.3811	1.2846	700.9	947	.706
1300	2.5476-6	-1680.9	10.5739	27.176	498	1.0000	-1.0000	1.4335	1.2714	711.1	1017	.701	1.3905	1.2821	714.1	978	.707
1350	2.4533-6	-1609.1	10.6281	27.176	511	1.0000	-1.0000	1.4383	1.2702	724.3	1047	.701	1.3996	1.2798	727.0	1010	.708
1400	2.3656-6	-1537.1	10.6805	27.176	523	1.0001	-1.0000	1.4436	1.2690	737.2	1077	.701	1.4082	1.2776	739.7	1041	.708
1450	2.2841-6	-1464.8	10.7312	27.176	536	1.0002	-1.0000	1.4493	1.2677	749.9	1109	.701	1.4165	1.2755	752.2	1072	.709
1500	2.2079-6	-1392.1	10.7805	27.176	549	1.0003	-1.0000	1.4559	1.2663	762.3	1144	.699	1.4244	1.2735	764.5	1103	.709
1550	2.1366-6	-1319.1	10.8283	27.176	561	1.0006	-1.0000	1.4635	1.2647	774.4	1181	.695	1.4320	1.2717	776.6	1134	.709
1600	2.0698-6	-1245.7	10.8749	27.175	574	1.0010	-1.0000	1.4729	1.2628	786.3	1224	.690	1.4392	1.2700	788.5	1164	.709
1650	2.0070-6	-1171.8	10.9204	27.174	586	1.0017	-1.0000	1.4850	1.2606	797.7	1275	.682	1.4461	1.2684	800.2	1195	.709
1700	1.9479-6	-1097.2	10.9650	27.172	598	1.0028	-1.0001	1.5012	1.2577	808.9	1337	.671	1.4527	1.2668	811.8	1226	.709
1750	1.8920-6	-1021.6	11.0088	27.169	610	1.0046	-1.0001	1.5238	1.2540	819.5	1416	.657	1.4590	1.2654	823.2	1256	.708
1800	1.8391-6	-944.6	11.0522	27.165	622	1.0074	-1.0002	1.5563	1.2490	829.5	1517	.638	1.4650	1.2641	834.5	1287	.708
1850	1.7890-6	-865.7	11.0954	27.158	634	1.0118	-1.0004	1.6045	1.2422	838.8	1650	.616	1.4707	1.2629	845.7	1318	.707
1900	1.7412-6	-783.8	11.1391	27.147	645	1.0188	-1.0006	1.6775	1.2329	847.0	1831	.591	1.4761	1.2618	856.9	1349	.706
1950	1.6955-6	-697.3	11.1840	27.130	657	1.0300	-1.0009	1.7903	1.2205	854.0	2080	.565	1.4813	1.2609	868.0	1380	.705
2000	1.6515-6	-603.7	11.2314	27.104	668	1.0480	-1.0015	1.9650	1.2047	859.7	2431	.540	1.4862	1.2601	879.3	1411	.704
2050	1.6088-6	-499.3	11.2830	27.063	679	1.0762	-1.0025	2.2313	1.1862	864.3	2929	.517	1.4909	1.2596	890.7	1443	.702
2100	1.5669-6	-378.6	11.3411	27.000	690	1.1185	-1.0040	2.6188	1.1671	868.7	3632	.497	1.4953	1.2593	902.4	1476	.699
2150	1.5252-6	-235.1	11.4086	26.907	701	1.1774	-1.0060	3.1409	1.1499	874.0	4600	.478	1.4994	1.2596	914.8	1510	.696
2200	1.4832-6	-62.5	11.4880	26.776	711	1.2522	-1.0088	3.7838	1.1362	881.0	5869	.458	1.5033	1.2603	927.9	1546	.691
2250	1.4407-6	144.7	11.5811	26.599	721	1.3403	-1.0122	4.5162	1.1263	890.0	7449	.437	1.5068	1.2617	942.0	1584	.686
2300	1.3974-6	390.2	11.6889	26.372	730	1.4388	-1.0162	5.3109	1.1194	900.9	9333	.415	1.5102	1.2638	957.3	1626	.678
2350	1.3532-6	676.6	11.8121	26.095	739	1.5461	-1.0208	6.1548	1.1148	913.6	11503	.395	1.5136	1.2666	973.9	1671	.669
2400	1.3083-6	1006.4	11.9509	25.766	747	1.6614	-1.0259	7.0441	1.1118	927.9	13925	.378	1.5169	1.2702	991.8	1722	.658
2450	1.2627-6	1381.7	12.1057	25.385	755	1.7834	-1.0316	7.9734	1.1100	943.8	16536	.364	1.5203	1.2746	1011.3	1778	.646
2500	1.2165-6	1804.2	12.2763	24.955	763	1.9093	-1.0377	8.9272	1.1091	961.1	19228	.354	1.5240	1.2798	1032.5	1842	.631
2550	1.1699-6	2274.3	12.4625	24.480	770	2.0340	-1.0440	9.8717	1.1090	980.1	21840	.348	1.5279	1.2858	1055.3	1912	.616
2600	1.1233-6	2790.3	12.6629	23.966	778	2.1493	-1.0503	10.7508	1.1096	1000.5	24158	.346	1.5321	1.2927	1079.8	1990	.599
2650	1.0772-6	3347.0	12.8749	23.424	785	2.2448	-1.0559	11.4852	1.1109	1022.2	25936	.348	1.5367	1.3004	1106.0	2073	.582
2700	1.0323-6	3934.8	13.0947	22.871	792	2.3085	-1.0602	11.9821	1.1129	1045.2	26940	.352	1.5414	1.3086	1133.4	2162	.565
2750	9.8922-7	4539.7	13.3167	22.322	800	2.3298	-1.0627	12.1533	1.1157	1069.0	27007	.360	1.5464	1.3173	1161.6	2252	.549
2800	9.4871-7	5143.8	13.5343	21.797	807	2.3029	-1.0629	11.9435	1.1192	1093.3	26099	.369	1.5513	1.3260	1190.1	2342	.535
2850	9.1135-7	5727.7	13.7411	21.313	815	2.2291	-1.0607	11.3544	1.1236	1117.7	24334	.380	1.5562	1.3346	1218.1	2430	.522
2900	8.7750-7	6274.0	13.9311	20.882	824	2.1174	-1.0564	10.4528	1.1291	1141.8	21961	.392	1.5607	1.3425	1245.1	2513	.512
2950	8.4727-7	6769.7	14.1006	20.510	832	1.9820	-1.0506	9.3527	1.1359	1165.5	19288	.403	1.5649	1.3496	1270.4	2589	.503
3000	8.2050-7	7208.1	14.2480	20.198	841	1.8383	-1.0442	8.1815	1.1440	1188.6	16603	.414	1.5686	1.3558	1294.0	2660	.496

TABLE 27.2D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
200	1.7323-4	-3255.5	7.3259	28.430	111	1.0000	-1.0000	1.0661	1.3780	283.9	149	.790	1.0661	1.3780	283.9	149	.790
210	1.6498-4	-3244.8	7.3779	28.430	116	1.0000	-1.0000	1.0679	1.3771	290.8	158	.785	1.0679	1.3771	290.8	158	.785
220	1.5748-4	-3234.1	7.4276	28.430	122	1.0000	-1.0000	1.0699	1.3762	297.6	167	.781	1.0699	1.3762	297.6	167	.781
230	1.5064-4	-3223.4	7.4752	28.430	127	1.0000	-1.0000	1.0719	1.3752	304.1	175	.777	1.0719	1.3752	304.1	175	.777
240	1.4436-4	-3212.7	7.5209	28.430	132	1.0000	-1.0000	1.0741	1.3742	310.6	183	.774	1.0741	1.3742	310.6	183	.774
250	1.3859-4	-3202.0	7.5648	28.430	137	1.0000	-1.0000	1.0763	1.3731	316.8	192	.772	1.0763	1.3731	316.8	192	.772
260	1.3326-4	-3191.2	7.6071	28.430	143	1.0000	-1.0000	1.0786	1.3720	323.0	200	.769	1.0785	1.3720	323.0	200	.770
270	1.2832-4	-3180.4	7.6478	28.430	148	1.0000	-1.0000	1.0811	1.3709	329.0	208	.768	1.0809	1.3709	329.0	208	.768
280	1.2374-4	-3169.6	7.6872	28.430	153	1.0000	-1.0000	1.0836	1.3697	334.9	216	.766	1.0833	1.3698	334.9	216	.767
290	1.1947-4	-3158.7	7.7252	28.430	158	1.0000	-1.0000	1.0863	1.3684	340.7	224	.765	1.0858	1.3686	340.7	223	.766
298	1.1620-4	-3149.8	7.7554	28.430	162	1.0001	-1.0000	1.0886	1.3674	345.3	230	.764	1.0879	1.3676	345.3	230	.765
300	1.1549-4	-3147.8	7.7621	28.430	162	1.0001	-1.0000	1.0892	1.3671	346.3	232	.764	1.0884	1.3674	346.4	231	.765
310	1.1176-4	-3136.9	7.7979	28.430	167	1.0001	-1.0000	1.0923	1.3658	351.9	239	.763	1.0911	1.3662	351.9	239	.765
320	1.0827-4	-3126.0	7.8326	28.430	172	1.0002	-1.0000	1.0957	1.3643	357.3	247	.762	1.0938	1.3650	357.4	246	.765
330	1.0499-4	-3115.0	7.8664	28.429	177	1.0003	-1.0000	1.0994	1.3627	362.7	256	.760	1.0965	1.3637	362.8	253	.765
340	1.0190-4	-3104.0	7.8993	28.429	181	1.0005	-1.0000	1.1036	1.3610	367.9	264	.758	1.0994	1.3624	368.1	261	.765
350	9.8985-5	-3092.9	7.9313	28.428	186	1.0007	-1.0000	1.1084	1.3591	373.0	273	.755	1.1023	1.3612	373.3	268	.765
360	9.6233-5	-3081.8	7.9626	28.428	191	1.0010	-1.0000	1.1139	1.3570	378.0	283	.751	1.1052	1.3599	378.4	275	.765
370	9.3629-5	-3070.7	7.9932	28.427	195	1.0015	-1.0001	1.1203	1.3546	382.9	294	.745	1.1082	1.3585	383.4	283	.764
380	9.1161-5	-3059.4	8.0232	28.425	200	1.0021	-1.0001	1.1278	1.3520	387.7	305	.737	1.1113	1.3572	388.4	291	.763
390	8.8818-5	-3048.1	8.0526	28.424	204	1.0029	-1.0001	1.1366	1.3490	392.3	318	.728	1.1145	1.3559	393.3	299	.762
400	8.6590-5	-3036.7	8.0815	28.421	208	1.0039	-1.0002	1.1470	1.3457	396.8	333	.718	1.1177	1.3545	398.1	306	.761
410	8.4469-5	-3025.1	8.1100	28.418	213	1.0052	-1.0002	1.1593	1.3419	401.2	349	.706	1.1209	1.3532	402.9	314	.760
420	8.2445-5	-3013.5	8.1381	28.414	217	1.0069	-1.0003	1.1737	1.3377	405.5	367	.693	1.1243	1.3518	407.6	321	.759
430	8.0513-5	-3001.7	8.1659	28.409	221	1.0089	-1.0004	1.1906	1.3331	409.6	388	.678	1.1277	1.3505	412.3	329	.759
440	7.8665-5	-2989.7	8.1935	28.402	225	1.0114	-1.0005	1.2103	1.3279	413.6	412	.662	1.1312	1.3492	416.9	336	.758
450	7.6895-5	-2977.4	8.2209	28.394	229	1.0145	-1.0006	1.2332	1.3223	417.4	439	.645	1.1347	1.3478	421.4	344	.757
460	7.5196-5	-2965.0	8.2483	28.384	234	1.0182	-1.0008	1.2596	1.3163	421.1	469	.627	1.1384	1.3465	426.0	352	.756
470	7.3564-5	-2952.2	8.2757	28.371	238	1.0225	-1.0010	1.2898	1.3099	424.8	503	.609	1.1421	1.3452	430.4	359	.755
480	7.1993-5	-2939.2	8.3032	28.356	242	1.0277	-1.0013	1.3241	1.3031	428.2	541	.592	1.1459	1.3438	434.9	367	.754
490	7.0480-5	-2925.7	8.3309	28.338	246	1.0336	-1.0016	1.3628	1.2960	431.7	582	.575	1.1499	1.3426	439.3	375	.753
500	6.9019-5	-2911.9	8.3589	28.317	250	1.0404	-1.0019	1.4061	1.2888	435.0	628	.559	1.1539	1.3413	443.7	383	.751
510	6.7606-5	-2897.6	8.3872	28.293	254	1.0480	-1.0023	1.4539	1.2815	438.3	677	.545	1.1581	1.3401	448.2	392	.749
520	6.6239-5	-2882.8	8.4159	28.264	258	1.0566	-1.0028	1.5064	1.2743	441.5	728	.533	1.1623	1.3388	452.5	401	.747
530	6.4914-5	-2867.5	8.4452	28.231	261	1.0660	-1.0033	1.5634	1.2671	444.7	782	.522	1.1667	1.3377	456.9	410	.745
540	6.3627-5	-2851.5	8.4750	28.194	265	1.0763	-1.0038	1.6246	1.2601	448.0	838	.514	1.1712	1.3365	461.3	419	.742
550	6.2376-5	-2835.0	8.5054	28.151	269	1.0873	-1.0044	1.6895	1.2535	451.2	893	.509	1.1758	1.3355	465.8	429	.739
560	6.1160-5	-2817.7	8.5364	28.104	273	1.0988	-1.0051	1.7574	1.2471	454.6	948	.506	1.1805	1.3344	470.2	438	.735
570	5.9976-5	-2799.8	8.5681	28.052	277	1.1108	-1.0058	1.8273	1.2412	457.9	1000	.506	1.1853	1.3334	474.6	448	.732
580	5.8822-5	-2781.2	8.6005	27.995	281	1.1228	-1.0065	1.8980	1.2358	461.4	1048	.508	1.1902	1.3325	479.1	459	.728
590	5.7698-5	-2761.8	8.6336	27.934	284	1.1347	-1.0072	1.9677	1.2309	464.9	1090	.513	1.1952	1.3316	483.6	470	.724

TABLE 27.2D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
600	5.6603-5	-2741.8	8.6672	27.868	288	1.1458	-1.0078	2.0343	1.2265	468.6	1125	.521	1.2002	1.3308	488.1	480 .720
610	5.5536-5	-2721.2	8.7013	27.798	292	1.1556	-1.0084	2.0949	1.2228	472.3	1150	.531	1.2053	1.3301	492.6	492 .715
620	5.4499-5	-2700.0	8.7358	27.726	295	1.1635	-1.0089	2.1458	1.2199	476.2	1164	.545	1.2103	1.3294	497.2	503 .711
630	5.3491-5	-2678.3	8.7705	27.653	299	1.1685	-1.0093	2.1822	1.2178	480.3	1164	.560	1.2153	1.3287	501.7	514 .707
640	5.2515-5	-2656.4	8.8050	27.579	303	1.1697	-1.0094	2.1987	1.2169	484.6	1149	.579	1.2203	1.3281	506.2	525 .703
650	5.1572-5	-2634.4	8.8391	27.507	306	1.1659	-1.0092	2.1890	1.2173	489.0	1118	.599	1.2251	1.3276	510.7	536 .699
660	5.0666-5	-2612.7	8.8722	27.439	310	1.1563	-1.0087	2.1481	1.2194	493.8	1070	.621	1.2297	1.3270	515.2	547 .696
670	4.9798-5	-2591.6	8.9040	27.378	313	1.1407	-1.0079	2.0742	1.2235	498.9	1010	.643	1.2341	1.3264	519.5	557 .693
680	4.8970-5	-2571.3	8.9340	27.325	316	1.1200	-1.0068	1.9716	1.2298	504.4	942	.662	1.2382	1.3258	523.8	567 .691
690	4.8184-5	-2552.2	8.9619	27.282	320	1.0964	-1.0054	1.8524	1.2381	510.2	874	.677	1.2421	1.3251	527.9	577 .689
700	4.7438-5	-2534.3	8.9877	27.249	323	1.0729	-1.0041	1.7329	1.2477	516.2	815	.687	1.2457	1.3244	531.9	585 .688
710	4.6729-5	-2517.5	9.0115	27.225	326	1.0522	-1.0030	1.6282	1.2574	522.1	768	.692	1.2491	1.3236	535.7	593 .687
720	4.6052-5	-2501.6	9.0337	27.208	330	1.0358	-1.0021	1.5461	1.2658	527.7	736	.693	1.2523	1.3228	539.5	601 .687
730	4.5403-5	-2486.5	9.0546	27.197	333	1.0239	-1.0014	1.4872	1.2724	532.9	715	.692	1.2554	1.3219	543.1	609 .687
740	4.4777-5	-2471.8	9.0745	27.190	336	1.0156	-1.0009	1.4478	1.2771	537.6	704	.691	1.2584	1.3210	546.7	616 .687
750	4.4173-5	-2457.5	9.0938	27.185	339	1.0101	-1.0006	1.4227	1.2800	541.9	700	.690	1.2614	1.3201	550.3	623 .687
760	4.3587-5	-2443.3	9.1125	27.182	343	1.0066	-1.0004	1.4075	1.2817	545.9	699	.690	1.2643	1.3192	553.8	630 .688
770	4.3018-5	-2429.3	9.1309	27.180	346	1.0043	-1.0003	1.3987	1.2826	549.6	702	.689	1.2671	1.3182	557.2	637 .688
780	4.2464-5	-2415.4	9.1489	27.179	349	1.0028	-1.0002	1.3939	1.2829	553.3	706	.689	1.2700	1.3173	560.6	644 .689
790	4.1925-5	-2401.4	9.1666	27.178	352	1.0018	-1.0001	1.3917	1.2829	556.8	712	.689	1.2728	1.3164	564.0	651 .689
800	4.1401-5	-2387.5	9.1841	27.178	355	1.0012	-1.0001	1.3911	1.2827	560.3	718	.689	1.2756	1.3155	567.4	658 .689
810	4.0889-5	-2373.6	9.2014	27.177	359	1.0008	-1.0000	1.3913	1.2824	563.7	724	.689	1.2784	1.3146	570.8	664 .690
820	4.0390-5	-2359.7	9.2185	27.177	362	1.0005	-1.0000	1.3921	1.2820	567.1	731	.689	1.2812	1.3137	574.1	671 .691
830	3.9903-5	-2345.8	9.2353	27.177	365	1.0004	-1.0000	1.3932	1.2816	570.5	737	.689	1.2839	1.3128	577.4	678 .691
840	3.9428-5	-2331.8	9.2520	27.177	368	1.0003	-1.0000	1.3945	1.2812	573.8	744	.690	1.2867	1.3119	580.6	684 .692
850	3.8964-5	-2317.9	9.2686	27.177	371	1.0002	-1.0000	1.3958	1.2808	577.1	751	.690	1.2894	1.3111	583.9	691 .692
860	3.8511-5	-2303.9	9.2849	27.177	374	1.0001	-1.0000	1.3970	1.2805	580.4	757	.690	1.2921	1.3102	587.1	698 .693
870	3.8068-5	-2289.9	9.3010	27.177	377	1.0001	-1.0000	1.3983	1.2801	583.7	764	.690	1.2948	1.3094	590.4	704 .693
880	3.7636-5	-2275.9	9.3170	27.177	380	1.0001	-1.0000	1.3995	1.2798	587.0	770	.691	1.2975	1.3086	593.5	711 .694
890	3.7213-5	-2261.9	9.3328	27.177	383	1.0000	-1.0000	1.4007	1.2795	590.2	777	.691	1.3001	1.3077	596.7	717 .694
900	3.6799-5	-2247.9	9.3485	27.177	386	1.0000	-1.0000	1.4018	1.2792	593.5	783	.691	1.3028	1.3069	599.9	724 .695
910	3.6395-5	-2233.9	9.3640	27.177	389	1.0000	-1.0000	1.4029	1.2789	596.7	790	.691	1.3054	1.3061	603.0	730 .695
920	3.5999-5	-2219.9	9.3793	27.177	392	1.0000	-1.0000	1.4039	1.2787	599.9	796	.692	1.3080	1.3053	606.1	737 .696
930	3.5612-5	-2205.8	9.3945	27.177	395	1.0000	-1.0000	1.4048	1.2784	603.1	802	.692	1.3105	1.3045	609.2	744 .696
940	3.5233-5	-2191.8	9.4096	27.177	398	1.0000	-1.0000	1.4057	1.2782	606.3	808	.692	1.3131	1.3038	612.3	750 .697
950	3.4862-5	-2177.7	9.4244	27.177	401	1.0000	-1.0000	1.4066	1.2780	609.5	814	.693	1.3156	1.3030	615.4	757 .697
960	3.4499-5	-2163.6	9.4392	27.177	404	1.0000	-1.0000	1.4074	1.2778	612.6	820	.693	1.3181	1.3023	618.4	763 .698
970	3.4143-5	-2149.6	9.4538	27.177	407	1.0000	-1.0000	1.4082	1.2776	615.7	826	.693	1.3206	1.3015	621.5	769 .698
980	3.3795-5	-2135.5	9.4682	27.177	410	1.0000	-1.0000	1.4090	1.2774	618.9	832	.693	1.3230	1.3008	624.5	776 .699
990	3.3454-5	-2121.4	9.4825	27.177	413	1.0000	-1.0000	1.4097	1.2772	622.0	838	.694	1.3254	1.3001	627.5	782 .699

TABLE 27.2D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3119-5	-2107.3	9.4967	27.177	416	1.0000	-1.0000	1.4105	1.2770	625.0	844	.694	1.3278	1.2994	630.5	789	.699
1050	3.1542-5	-2036.7	9.5656	27.177	430	1.0000	-1.0000	1.4138	1.2762	640.3	874	.695	1.3393	1.2961	645.2	821	.701
1100	3.0108-5	-1965.9	9.6314	27.177	444	1.0000	-1.0000	1.4172	1.2753	655.1	902	.697	1.3504	1.2929	659.6	853	.703
1150	2.8799-5	-1895.0	9.6945	27.177	457	1.0000	-1.0000	1.4208	1.2744	669.6	931	.698	1.3610	1.2900	673.7	884	.704
1200	2.7599-5	-1823.8	9.7551	27.177	471	1.0000	-1.0000	1.4247	1.2735	683.8	960	.699	1.3712	1.2872	687.4	916	.705
1250	2.6495-5	-1752.5	9.8133	27.177	484	1.0000	-1.0000	1.4288	1.2725	697.6	988	.700	1.3811	1.2846	700.9	947	.706
1300	2.5476-5	-1680.9	9.8694	27.177	498	1.0000	-1.0000	1.4333	1.2714	711.1	1017	.701	1.3905	1.2821	714.1	978	.707
1350	2.4533-5	-1609.1	9.9236	27.177	511	1.0000	-1.0000	1.4379	1.2703	724.3	1046	.702	1.3996	1.2798	727.9	1010	.708
1400	2.3656-5	-1537.1	9.9760	27.176	523	1.0000	-1.0000	1.4428	1.2691	737.3	1075	.703	1.4082	1.2776	739.7	1041	.708
1450	2.2841-5	-1464.9	10.0267	27.176	536	1.0001	-1.0000	1.4479	1.2680	750.0	1105	.703	1.4165	1.2755	752.2	1072	.709
1500	2.2079-5	-1392.3	10.0759	27.176	549	1.0001	-1.0000	1.4532	1.2667	762.4	1135	.703	1.4244	1.2735	764.5	1103	.709
1550	2.1367-5	-1319.5	10.1236	27.176	561	1.0002	-1.0000	1.4590	1.2655	774.7	1167	.702	1.4320	1.2717	776.6	1133	.709
1600	2.0699-5	-1246.4	10.1700	27.176	574	1.0003	-1.0000	1.4652	1.2641	786.6	1200	.700	1.4392	1.2700	788.5	1164	.709
1650	2.0072-5	-1173.0	10.2152	27.176	586	1.0005	-1.0000	1.4722	1.2627	798.4	1236	.698	1.4461	1.2683	800.2	1195	.709
1700	1.9481-5	-1099.2	10.2593	27.175	598	1.0009	-1.0000	1.4804	1.2610	809.9	1275	.694	1.4527	1.2668	811.7	1225	.709
1750	1.8924-5	-1024.9	10.3023	27.174	610	1.0014	-1.0000	1.4904	1.2592	821.1	1320	.689	1.4589	1.2654	823.1	1256	.709
1800	1.8397-5	-950.1	10.3445	27.173	622	1.0022	-1.0001	1.5031	1.2569	832.0	1371	.682	1.4649	1.2640	834.4	1286	.708
1850	1.7898-5	-874.6	10.3859	27.171	634	1.0035	-1.0001	1.5198	1.2541	842.6	1432	.673	1.4706	1.2628	845.5	1316	.708
1900	1.7425-5	-798.0	10.4267	27.168	645	1.0054	-1.0002	1.5424	1.2506	852.8	1506	.661	1.4760	1.2616	856.5	1347	.707
1950	1.6976-5	-720.2	10.4672	27.163	657	1.0082	-1.0003	1.5738	1.2460	862.4	1598	.647	1.4811	1.2605	867.4	1377	.707
2000	1.6547-5	-640.4	10.5075	27.156	668	1.0125	-1.0004	1.6181	1.2400	871.4	1715	.631	1.4860	1.2595	878.2	1407	.706
2050	1.6137-5	-558.0	10.5482	27.146	680	1.0189	-1.0006	1.6818	1.2322	879.6	1866	.613	1.4907	1.2586	889.0	1437	.705
2100	1.5744-5	-471.8	10.5898	27.130	691	1.0285	-1.0009	1.7738	1.2222	886.9	2064	.593	1.4951	1.2578	899.7	1467	.704
2150	1.5365-5	-380.0	10.6330	27.108	702	1.0428	-1.0014	1.9062	1.2100	893.3	2329	.574	1.4993	1.2572	910.5	1498	.703
2200	1.4998-5	-280.2	10.6788	27.075	713	1.0638	-1.0022	2.0935	1.1959	898.9	2685	.556	1.5033	1.2567	921.4	1529	.701
2250	1.4639-5	-169.5	10.7286	27.028	723	1.0932	-1.0033	2.3489	1.1810	904.1	3160	.538	1.5070	1.2565	932.6	1560	.699
2300	1.4286-5	-44.1	10.7837	26.961	734	1.1325	-1.0047	2.6787	1.1667	909.7	3780	.520	1.5104	1.2565	944.1	1592	.696
2350	1.3935-5	99.5	10.8455	26.871	744	1.1816	-1.0067	3.0775	1.1543	916.2	4565	.502	1.5136	1.2569	956.0	1625	.693
2400	1.3584-5	264.5	10.9149	26.753	754	1.2390	-1.0090	3.5297	1.1444	923.9	5520	.482	1.5166	1.2577	968.6	1660	.689
2450	1.3233-5	453.1	10.9927	26.604	763	1.3030	-1.0117	4.0173	1.1369	933.0	6645	.462	1.5194	1.2590	981.8	1696	.684
2500	1.2881-5	666.6	11.0789	26.423	773	1.3719	-1.0147	4.5269	1.1313	943.4	7931	.441	1.5220	1.2606	995.8	1734	.678
2550	1.2526-5	906.0	11.1737	26.211	782	1.4450	-1.0181	5.0519	1.1274	955.0	9371	.421	1.5245	1.2628	1010.7	1776	.671
2600	1.2171-5	1172.0	11.2770	25.966	790	1.5218	-1.0218	5.5905	1.1246	967.6	10953	.403	1.5269	1.2653	1026.4	1820	.663
2650	1.1814-5	1465.3	11.3887	25.690	798	1.6020	-1.0259	6.1419	1.1228	981.3	12656	.387	1.5294	1.2684	1043.0	1868	.654
2700	1.1457-5	1786.4	11.5088	25.383	807	1.6850	-1.0302	6.7038	1.1217	996.0	14449	.374	1.5319	1.2720	1060.6	1920	.644
2750	1.1099-5	2135.8	11.6370	25.046	815	1.7695	-1.0348	7.2700	1.1213	1011.7	16283	.364	1.5345	1.2760	1079.3	1976	.633
2800	1.0743-5	2513.3	11.7730	24.683	822	1.8535	-1.0396	7.8288	1.1214	1028.4	18092	.356	1.5373	1.2806	1099.0	2036	.621
2850	1.0389-5	2918.2	11.9163	24.295	830	1.9341	-1.0444	8.3620	1.1220	1046.1	19793	.351	1.5402	1.2857	1119.8	2102	.608
2900	1.0039-5	3348.7	12.0660	23.888	838	2.0076	-1.0490	8.8451	1.1230	1064.7	21290	.348	1.5433	1.2912	1141.6	2171	.595
2950	9.6946-6	3801.4	12.2208	23.467	845	2.0693	-1.0533	9.2483	1.1246	1084.1	22483	.348	1.5466	1.2972	1164.4	2245	.582
3000	9.3594-6	4271.6	12.3789	23.040	853	2.1146	-1.0568	9.5395	1.1266	1104.4	23279	.349	1.5500	1.3035	1187.9	2323	.569

TABLE 27.3D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S	
200	1.7323-3	-3255.5	6.6525	28.430	111	1.0000	-1.0000	1.0661	1.3780	283.9	149 .790	1.0661	1.3780	283.9	149 .790
210	1.6498-3	-3244.8	6.7045	28.430	116	1.0000	-1.0000	1.0679	1.3771	290.8	158 .785	1.0679	1.3771	290.8	158 .785
220	1.5748-3	-3234.1	6.7542	28.430	122	1.0000	-1.0000	1.0699	1.3762	297.6	167 .781	1.0699	1.3762	297.6	167 .781
230	1.5064-3	-3223.4	6.8018	28.430	127	1.0000	-1.0000	1.0719	1.3752	304.1	175 .777	1.0719	1.3752	304.1	175 .777
240	1.4436-3	-3212.7	6.8475	28.430	132	1.0000	-1.0000	1.0741	1.3742	310.6	183 .774	1.0741	1.3742	310.6	183 .774
250	1.3859-3	-3202.0	6.8914	28.430	137	1.0000	-1.0000	1.0763	1.3731	316.8	192 .772	1.0763	1.3731	316.8	192 .772
260	1.3326-3	-3191.2	6.9337	28.430	143	1.0000	-1.0000	1.0786	1.3720	323.0	200 .770	1.0785	1.3720	323.0	200 .770
270	1.2832-3	-3180.4	6.9744	28.430	148	1.0000	-1.0000	1.0810	1.3709	329.0	208 .768	1.0809	1.3709	329.0	208 .768
280	1.2374-3	-3169.6	7.0138	28.430	153	1.0000	-1.0000	1.0834	1.3697	334.9	216 .766	1.0833	1.3698	334.9	216 .767
290	1.1947-3	-3158.7	7.0518	28.430	158	1.0000	-1.0000	1.0860	1.3685	340.7	224 .765	1.0858	1.3686	340.7	223 .766
298	1.1621-3	-3149.9	7.0820	28.430	162	1.0000	-1.0000	1.0882	1.3675	345.3	230 .765	1.0879	1.3676	345.3	230 .765
300	1.1549-3	-3147.8	7.0887	28.430	162	1.0000	-1.0000	1.0887	1.3673	346.4	231 .764	1.0884	1.3674	346.4	231 .765
310	1.1176-3	-3136.9	7.1244	28.430	167	1.0000	-1.0000	1.0915	1.3660	351.9	239 .764	1.0911	1.3662	351.9	239 .765
320	1.0827-3	-3126.0	7.1591	28.430	172	1.0001	-1.0000	1.0944	1.3647	357.4	246 .764	1.0938	1.3650	357.4	246 .765
330	1.0499-3	-3115.0	7.1929	28.430	177	1.0001	-1.0000	1.0975	1.3634	362.7	254 .764	1.0965	1.3637	362.8	253 .765
340	1.0190-3	-3104.1	7.2257	28.430	181	1.0001	-1.0000	1.1007	1.3620	368.0	262 .763	1.0994	1.3624	368.1	261 .765
350	9.8989-4	-3093.0	7.2576	28.429	186	1.0002	-1.0000	1.1042	1.3605	373.2	269 .762	1.1022	1.3612	373.3	268 .765
360	9.6238-4	-3082.0	7.2888	28.429	191	1.0003	-1.0000	1.1080	1.3589	378.3	278 .760	1.1052	1.3599	378.4	275 .765
370	9.3636-4	-3070.9	7.3192	28.429	195	1.0005	-1.0000	1.1121	1.3573	383.2	286 .758	1.1082	1.3585	383.4	283 .764
380	9.1171-4	-3059.7	7.3489	28.429	200	1.0007	-1.0000	1.1165	1.3555	388.1	295 .755	1.1112	1.3572	388.4	291 .763
390	8.8831-4	-3048.5	7.3780	28.428	204	1.0009	-1.0000	1.1214	1.3536	392.9	305 .751	1.1143	1.3559	393.3	298 .762
400	8.6608-4	-3037.3	7.4064	28.427	208	1.0012	-1.0000	1.1269	1.3516	397.7	315 .747	1.1175	1.3545	398.1	306 .761
410	8.4493-4	-3026.0	7.4343	28.426	213	1.0016	-1.0001	1.1330	1.3494	402.3	325 .742	1.1207	1.3532	402.8	313 .761
420	8.2477-4	-3014.6	7.4617	28.425	217	1.0022	-1.0001	1.1398	1.3471	406.8	336 .737	1.1239	1.3518	407.5	321 .760
430	8.0555-4	-3003.2	7.4886	28.423	221	1.0028	-1.0001	1.1474	1.3446	411.2	347 .731	1.1273	1.3504	412.1	328 .760
440	7.8718-4	-2991.7	7.5151	28.421	225	1.0036	-1.0002	1.1560	1.3418	415.6	360 .723	1.1306	1.3491	416.7	335 .759
450	7.6962-4	-2980.1	7.5412	28.419	229	1.0046	-1.0002	1.1658	1.3389	419.8	374 .715	1.1340	1.3477	421.2	343 .759
460	7.5280-4	-2968.4	7.5669	28.415	233	1.0059	-1.0003	1.1767	1.3357	424.0	389 .706	1.1375	1.3463	425.7	350 .759
470	7.3668-4	-2956.5	7.5924	28.411	238	1.0073	-1.0003	1.1890	1.3323	428.1	405 .697	1.1410	1.3450	430.1	357 .758
480	7.2121-4	-2944.6	7.6175	28.406	242	1.0090	-1.0004	1.2029	1.3286	432.0	424 .686	1.1445	1.3436	434.5	365 .758
490	7.0634-4	-2932.5	7.6425	28.400	246	1.0111	-1.0005	1.2184	1.3247	435.9	444 .674	1.1481	1.3423	438.8	372 .758
500	6.9204-4	-2920.2	7.6673	28.393	249	1.0134	-1.0006	1.2358	1.3205	439.7	466 .662	1.1518	1.3409	443.1	379 .757
510	6.7828-4	-2907.8	7.6919	28.385	253	1.0162	-1.0008	1.2551	1.3161	443.4	490 .649	1.1555	1.3396	447.3	387 .756
520	6.6500-4	-2895.1	7.7165	28.375	257	1.0193	-1.0009	1.2766	1.3115	447.0	516 .636	1.1593	1.3382	451.6	395 .755
530	6.5219-4	-2882.2	7.7411	28.364	261	1.0230	-1.0011	1.3005	1.3067	450.6	545 .623	1.1631	1.3369	455.7	403 .754
540	6.3982-4	-2869.1	7.7656	28.351	265	1.0270	-1.0014	1.3268	1.3017	454.0	576 .611	1.1670	1.3356	459.9	411 .753
550	6.2785-4	-2855.7	7.7902	28.336	269	1.0316	-1.0016	1.3557	1.2966	457.4	609 .598	1.1710	1.3344	464.1	419 .752
560	6.1626-4	-2842.0	7.8149	28.318	273	1.0368	-1.0019	1.3873	1.2913	460.8	645 .587	1.1750	1.3331	468.2	427 .750
570	6.0502-4	-2827.9	7.8398	28.298	276	1.0425	-1.0022	1.4217	1.2859	464.1	682 .576	1.1790	1.3319	472.3	436 .748
580	5.9412-4	-2813.5	7.8648	28.276	280	1.0487	-1.0026	1.4590	1.2805	467.3	722 .566	1.1831	1.3307	476.4	444 .746
590	5.8353-4	-2798.7	7.8901	28.251	284	1.0555	-1.0030	1.4993	1.2751	470.5	763 .558	1.1873	1.3296	480.5	453 .744

TABLE 27.3D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
600	5.7323-4	-2783.5	7.9157	28.223	288	1.0629	-1.0034	1.5425	1.2696	473.7	806 .551	1.1916	1.3284	484.6	462 .742
610	5.6321-4	-2767.9	7.9415	28.191	291	1.0709	-1.0039	1.5886	1.2642	476.9	849 .545	1.1959	1.3274	488.7	471 .740
620	5.5345-4	-2751.7	7.9678	28.157	295	1.0794	-1.0044	1.6376	1.2589	480.1	893 .541	1.2002	1.3263	492.8	480 .737
630	5.4394-4	-2735.1	7.9944	28.119	299	1.0883	-1.0049	1.6893	1.2537	483.3	937 .538	1.2046	1.3253	496.9	490 .735
640	5.3466-4	-2717.9	8.0214	28.078	302	1.0976	-1.0055	1.7433	1.2487	486.5	981 .537	1.2090	1.3244	501.0	499 .732
650	5.2560-4	-2700.2	8.0488	28.034	306	1.1073	-1.0061	1.7992	1.2438	489.7	1023 .538	1.2135	1.3235	505.1	509 .729
660	5.1675-4	-2682.0	8.0767	27.986	309	1.1170	-1.0067	1.8564	1.2392	492.9	1063 .540	1.2179	1.3226	509.3	519 .726
670	5.0810-4	-2663.1	8.1051	27.935	313	1.1267	-1.0073	1.9139	1.2348	496.2	1100 .544	1.2224	1.3218	513.4	529 .723
680	4.9966-4	-2643.7	8.1339	27.880	316	1.1362	-1.0078	1.9706	1.2308	499.6	1133 .550	1.2269	1.3211	517.6	539 .720
690	4.9141-4	-2623.7	8.1630	27.823	320	1.1449	-1.0084	2.0247	1.2271	503.0	1160 .558	1.2314	1.3204	521.8	549 .717
700	4.8335-4	-2603.2	8.1925	27.763	323	1.1527	-1.0089	2.0740	1.2240	506.5	1181 .567	1.2358	1.3198	526.0	560 .713
710	4.7549-4	-2582.2	8.2223	27.702	326	1.1588	-1.0093	2.1155	1.2214	510.2	1193 .579	1.2402	1.3193	530.2	570 .710
720	4.6783-4	-2560.9	8.2521	27.640	330	1.1627	-1.0095	2.1460	1.2195	513.9	1196 .592	1.2446	1.3187	534.4	580 .707
730	4.6038-4	-2539.4	8.2818	27.578	333	1.1637	-1.0096	2.1614	1.2185	517.9	1188 .606	1.2488	1.3183	538.6	590 .705
740	4.5316-4	-2517.8	8.3112	27.517	336	1.1611	-1.0095	2.1577	1.2185	522.0	1167 .622	1.2530	1.3178	542.8	600 .702
750	4.4617-4	-2496.3	8.3400	27.458	340	1.1543	-1.0091	2.1319	1.2197	526.3	1134 .638	1.2570	1.3173	547.0	610 .699
760	4.3943-4	-2475.2	8.3680	27.404	343	1.1430	-1.0085	2.0826	1.2223	530.9	1091 .654	1.2608	1.3169	551.0	620 .697
770	4.3295-4	-2454.7	8.3947	27.355	346	1.1278	-1.0076	2.0115	1.2263	535.7	1040 .669	1.2645	1.3164	555.1	629 .696
780	4.2675-4	-2435.0	8.4201	27.314	349	1.1095	-1.0066	1.9242	1.2318	540.8	986 .681	1.2681	1.3159	559.0	638 .694
790	4.2081-4	-2416.3	8.4441	27.279	352	1.0900	-1.0054	1.8293	1.2385	546.1	934 .690	1.2714	1.3153	562.8	646 .693
800	4.1513-4	-2398.4	8.4665	27.251	355	1.0710	-1.0043	1.7365	1.2457	551.4	888 .695	1.2746	1.3147	566.5	654 .692
810	4.0969-4	-2381.5	8.4875	27.230	359	1.0540	-1.0033	1.6537	1.2529	556.7	850 .698	1.2777	1.3140	570.1	662 .692
820	4.0446-4	-2365.3	8.5074	27.215	362	1.0399	-1.0024	1.5853	1.2594	561.7	822 .698	1.2807	1.3133	573.6	669 .692
830	3.9942-4	-2349.7	8.5263	27.203	365	1.0288	-1.0018	1.5322	1.2648	566.4	802 .697	1.2836	1.3125	577.0	677 .692
840	3.9455-4	-2334.6	8.5444	27.195	368	1.0205	-1.0013	1.4929	1.2690	570.9	790 .696	1.2865	1.3117	580.4	684 .692
850	3.8983-4	-2319.8	8.5619	27.190	371	1.0145	-1.0009	1.4648	1.2722	575.0	783 .694	1.2893	1.3109	583.7	690 .693
860	3.8524-4	-2305.3	8.5789	27.186	374	1.0102	-1.0006	1.4453	1.2744	579.0	779 .693	1.2920	1.3101	587.0	697 .693
870	3.8077-4	-2290.9	8.5955	27.183	377	1.0072	-1.0005	1.4320	1.2759	582.7	779 .693	1.2947	1.3093	590.3	704 .694
880	3.7642-4	-2276.6	8.6118	27.181	380	1.0051	-1.0003	1.4230	1.2768	586.3	781 .692	1.2974	1.3085	593.5	711 .694
890	3.7217-4	-2262.4	8.6278	27.180	383	1.0036	-1.0002	1.4172	1.2774	589.7	784 .692	1.3001	1.3077	596.7	717 .695
900	3.6803-4	-2248.3	8.6437	27.179	386	1.0026	-1.0002	1.4134	1.2777	593.1	789 .692	1.3027	1.3069	599.8	724 .695
910	3.6397-4	-2234.2	8.6593	27.178	389	1.0018	-1.0001	1.4111	1.2779	596.4	793 .692	1.3054	1.3061	603.0	730 .695
920	3.6001-4	-2220.1	8.6747	27.178	392	1.0013	-1.0001	1.4097	1.2779	599.7	799 .692	1.3080	1.3053	606.1	737 .696
930	3.5613-4	-2206.0	8.6899	27.178	395	1.0010	-1.0001	1.4090	1.2779	603.0	804 .692	1.3105	1.3045	609.2	743 .696
940	3.5234-4	-2191.9	8.7050	27.177	398	1.0007	-1.0001	1.4088	1.2778	606.2	810 .693	1.3131	1.3038	612.3	750 .697
950	3.4863-4	-2177.8	8.7199	27.177	401	1.0005	-1.0000	1.4088	1.2777	609.4	815 .693	1.3156	1.3030	615.4	757 .697
960	3.4500-4	-2163.7	8.7346	27.177	404	1.0004	-1.0000	1.4091	1.2776	612.5	821 .693	1.3181	1.3023	618.4	763 .698
970	3.4144-4	-2149.6	8.7493	27.177	407	1.0003	-1.0000	1.4095	1.2774	615.7	827 .693	1.3206	1.3015	621.5	769 .698
980	3.3796-4	-2135.5	8.7637	27.177	410	1.0002	-1.0000	1.4099	1.2773	618.8	833 .694	1.3230	1.3008	624.5	776 .699
990	3.3454-4	-2121.4	8.7780	27.177	413	1.0002	-1.0000	1.4104	1.2771	621.9	839 .694	1.3254	1.3001	627.5	782 .699

TABLE 27.3D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3119-4	-2107.3	8.7922	27.177	416	1.0001	-1.0000	1.4110	1.2769	625.0	845	.694	1.3278	1.2994	630.5	789	.699
1050	3.1542-4	-2036.7	8.8611	27.177	430	1.0001	-1.0000	1.4140	1.2761	640.3	874	.695	1.3393	1.2961	645.2	821	.701
1100	3.0108-4	-1965.9	8.9270	27.177	444	1.0000	-1.0000	1.4173	1.2753	655.1	903	.697	1.3504	1.2929	659.6	853	.703
1150	2.8799-4	-1895.0	8.9900	27.177	457	1.0000	-1.0000	1.4208	1.2744	669.6	931	.698	1.3610	1.2900	673.7	884	.704
1200	2.7599-4	-1823.8	9.0506	27.177	471	1.0000	-1.0000	1.4247	1.2735	683.8	959	.699	1.3712	1.2872	687.4	916	.705
1250	2.6495-4	-1752.5	9.1088	27.177	484	1.0000	-1.0000	1.4288	1.2725	697.6	988	.700	1.3811	1.2846	700.9	947	.706
1300	2.5476-4	-1680.9	9.1650	27.177	498	1.0000	-1.0000	1.4332	1.2714	711.1	1017	.701	1.3905	1.2821	714.1	978	.707
1350	2.4533-4	-1609.2	9.2191	27.177	511	1.0000	-1.0000	1.4378	1.2703	724.3	1045	.702	1.3996	1.2798	727.0	1010	.708
1400	2.3657-4	-1537.2	9.2715	27.177	523	1.0000	-1.0000	1.4425	1.2692	737.3	1074	.703	1.4082	1.2776	739.7	1041	.708
1450	2.2841-4	-1464.9	9.3222	27.177	536	1.0000	-1.0000	1.4474	1.2680	750.0	1103	.704	1.4165	1.2755	752.2	1072	.709
1500	2.2079-4	-1392.4	9.3714	27.176	549	1.0000	-1.0000	1.4524	1.2669	762.5	1132	.704	1.4244	1.2735	764.5	1103	.709
1550	2.1367-4	-1319.7	9.4191	27.176	561	1.0001	-1.0000	1.4575	1.2657	774.7	1162	.704	1.4320	1.2717	776.6	1133	.709
1600	2.0699-4	-1246.7	9.4654	27.176	574	1.0001	-1.0000	1.4628	1.2645	786.8	1192	.704	1.4392	1.2700	788.5	1164	.709
1650	2.0072-4	-1173.4	9.5105	27.176	586	1.0002	-1.0000	1.4682	1.2633	798.6	1223	.703	1.4461	1.2683	800.2	1195	.709
1700	1.9482-4	-1099.8	9.5544	27.176	598	1.0003	-1.0000	1.4740	1.2621	810.2	1256	.702	1.4527	1.2668	811.7	1225	.709
1750	1.8925-4	-1026.0	9.5973	27.176	610	1.0004	-1.0000	1.4803	1.2608	821.6	1289	.700	1.4589	1.2654	823.1	1256	.709
1800	1.8399-4	-951.8	9.6391	27.175	622	1.0007	-1.0000	1.4872	1.2594	832.8	1325	.698	1.4649	1.2640	834.3	1286	.708
1850	1.7901-4	-877.2	9.6799	27.175	634	1.0011	-1.0000	1.4953	1.2579	843.8	1364	.695	1.4705	1.2627	845.4	1316	.708
1900	1.7429-4	-802.2	9.7199	27.174	645	1.0016	-1.0001	1.5050	1.2562	854.6	1407	.690	1.4759	1.2615	856.4	1346	.708
1950	1.6982-4	-726.7	9.7592	27.172	657	1.0025	-1.0001	1.5169	1.2541	865.0	1455	.685	1.4811	1.2604	867.2	1376	.707
2000	1.6556-4	-650.5	9.7977	27.170	668	1.0036	-1.0001	1.5321	1.2517	875.2	1510	.678	1.4859	1.2593	877.9	1406	.706
2050	1.6150-4	-573.4	9.8358	27.167	680	1.0054	-1.0002	1.5518	1.2487	885.1	1575	.670	1.4906	1.2584	888.5	1435	.706
2100	1.5763-4	-495.2	9.8735	27.163	691	1.0078	-1.0003	1.5780	1.2449	894.6	1651	.660	1.4950	1.2575	899.0	1465	.705
2150	1.5393-4	-415.5	9.9110	27.157	702	1.0113	-1.0004	1.6131	1.2403	903.6	1745	.649	1.4992	1.2566	909.5	1494	.704
2200	1.5039-4	-333.7	9.9486	27.148	713	1.0162	-1.0006	1.6606	1.2344	912.0	1859	.637	1.5032	1.2559	919.9	1524	.703
2250	1.4698-4	-249.1	9.9866	27.137	724	1.0233	-1.0008	1.7250	1.2273	919.8	2003	.624	1.5070	1.2552	930.2	1553	.702
2300	1.4370-4	-160.8	10.0254	27.120	735	1.0331	-1.0012	1.8118	1.2186	927.0	2184	.610	1.5105	1.2546	940.6	1583	.701
2350	1.4052-4	-67.5	10.0656	27.097	745	1.0466	-1.0017	1.9275	1.2087	933.6	2414	.595	1.5139	1.2542	951.0	1613	.700
2400	1.3743-4	32.5	10.1077	27.065	756	1.0647	-1.0024	2.0781	1.1979	939.8	2704	.581	1.5171	1.2539	961.5	1643	.698
2450	1.3442-4	141.0	10.1524	27.023	766	1.0883	-1.0033	2.2678	1.1868	945.8	3069	.566	1.5201	1.2538	972.2	1674	.696
2500	1.3146-4	260.0	10.2005	26.967	777	1.1176	-1.0045	2.4965	1.1762	952.1	3517	.551	1.5229	1.2539	983.1	1705	.694
2550	1.2854-4	391.2	10.2525	26.895	786	1.1524	-1.0060	2.7594	1.1666	959.0	4055	.535	1.5254	1.2542	994.3	1737	.691
2600	1.2564-4	536.3	10.3088	26.806	796	1.1919	-1.0077	3.0482	1.1586	966.6	4684	.518	1.5278	1.2547	1005.9	1770	.687
2650	1.2277-4	696.3	10.3697	26.697	806	1.2349	-1.0096	3.3531	1.1521	975.1	5400	.500	1.5300	1.2556	1017.9	1804	.683
2700	1.1992-4	871.8	10.4353	26.569	815	1.2806	-1.0118	3.6663	1.1470	984.5	6200	.482	1.5321	1.2567	1030.4	1838	.679
2750	1.1709-4	1063.0	10.5055	26.421	824	1.3281	-1.0141	3.9828	1.1432	994.6	7079	.464	1.5340	1.2581	1043.4	1874	.674
2800	1.1427-4	1270.1	10.5801	26.254	833	1.3772	-1.0166	4.3002	1.1403	1005.6	8032	.446	1.5358	1.2598	1056.9	1912	.669
2850	1.1147-4	1493.0	10.6590	26.068	842	1.4277	-1.0193	4.6178	1.1383	1017.2	9055	.429	1.5376	1.2617	1070.9	1951	.663
2900	1.0868-4	1731.9	10.7421	25.863	850	1.4795	-1.0222	4.9358	1.1368	1029.5	10142	.414	1.5394	1.2640	1085.5	1992	.657
2950	1.0592-4	1986.6	10.8292	25.640	858	1.5323	-1.0252	5.2541	1.1360	1042.4	11281	.400	1.5412	1.2665	1100.7	2036	.650
3000	1.0318-4	2257.3	10.9201	25.401	867	1.5861	-1.0284	5.5719	1.1355	1056.0	12459	.388	1.5431	1.2692	1116.4	2082	.642

TABLE 27.4D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	1.7323-2	-3255.5	5.9791	28.430	111	1.0000	-1.0000	1.0661	1.3780	283.9	149 .790	1.0661	1.3780	283.9	149 .790
210	1.6498-2	-3244.8	6.0311	28.430	116	1.0000	-1.0000	1.0679	1.3771	290.8	158 .785	1.0679	1.3771	290.8	158 .785
220	1.5748-2	-3234.1	6.0808	28.430	122	1.0000	-1.0000	1.0699	1.3762	297.6	167 .781	1.0699	1.3762	297.6	167 .781
230	1.5064-2	-3223.4	6.1284	28.430	127	1.0000	-1.0000	1.0719	1.3752	304.1	175 .777	1.0719	1.3752	304.1	175 .777
240	1.4436-2	-3212.7	6.1741	28.430	132	1.0000	-1.0000	1.0741	1.3742	310.6	183 .774	1.0741	1.3742	310.6	183 .774
250	1.3859-2	-3202.0	6.2180	28.430	137	1.0000	-1.0000	1.0763	1.3731	316.8	192 .772	1.0763	1.3731	316.8	192 .772
260	1.3326-2	-3191.2	6.2603	28.430	143	1.0000	-1.0000	1.0786	1.3720	323.0	200 .770	1.0785	1.3720	323.0	200 .770
270	1.2832-2	-3180.4	6.3010	28.430	148	1.0000	-1.0000	1.0810	1.3709	329.0	208 .768	1.0809	1.3709	329.0	208 .768
280	1.2374-2	-3169.6	6.3404	28.430	153	1.0000	-1.0000	1.0834	1.3697	334.9	216 .767	1.0833	1.3698	334.9	216 .767
290	1.1947-2	-3158.7	6.3784	28.430	158	1.0000	-1.0000	1.0859	1.3686	340.7	223 .765	1.0858	1.3686	340.7	223 .766
298	1.1621-2	-3149.9	6.4086	28.430	162	1.0000	-1.0000	1.0881	1.3676	345.3	230 .765	1.0879	1.3676	345.3	230 .765
300	1.1549-2	-3147.8	6.4153	28.430	162	1.0000	-1.0000	1.0885	1.3674	346.4	231 .765	1.0884	1.3674	346.4	231 .765
310	1.1176-2	-3136.9	6.4510	28.430	167	1.0000	-1.0000	1.0912	1.3661	351.9	239 .765	1.0911	1.3662	351.9	239 .765
320	1.0827-2	-3126.0	6.4857	28.430	172	1.0000	-1.0000	1.0940	1.3649	357.4	246 .765	1.0938	1.3650	357.4	246 .765
330	1.0499-2	-3115.1	6.5194	28.430	177	1.0000	-1.0000	1.0969	1.3636	362.8	253 .765	1.0965	1.3637	362.8	253 .765
340	1.0190-2	-3104.1	6.5522	28.430	181	1.0000	-1.0000	1.0999	1.3622	368.0	261 .765	1.0993	1.3624	368.1	261 .765
350	9.8990-3	-3093.1	6.5841	28.430	186	1.0001	-1.0000	1.1029	1.3609	373.2	268 .764	1.1022	1.3612	373.3	268 .765
360	9.6240-3	-3082.0	6.6153	28.430	191	1.0001	-1.0000	1.1061	1.3595	378.3	276 .763	1.1052	1.3598	378.4	275 .765
370	9.3639-3	-3070.9	6.6456	28.430	195	1.0001	-1.0000	1.1095	1.3581	383.3	284 .762	1.1082	1.3585	383.4	283 .764
380	9.1174-3	-3059.8	6.6752	28.430	200	1.0002	-1.0000	1.1130	1.3566	388.3	292 .760	1.1112	1.3572	388.4	291 .763
390	8.8836-3	-3048.7	6.7042	28.429	204	1.0003	-1.0000	1.1167	1.3551	393.1	300 .759	1.1143	1.3559	393.3	298 .762
400	8.6614-3	-3037.5	6.7325	28.429	208	1.0004	-1.0000	1.1205	1.3535	397.9	309 .757	1.1174	1.3545	398.1	306 .761
410	8.4501-3	-3026.3	6.7602	28.429	213	1.0005	-1.0000	1.1246	1.3519	402.6	317 .755	1.1206	1.3532	402.8	313 .761
420	8.2488-3	-3015.0	6.7874	28.428	217	1.0007	-1.0000	1.1290	1.3502	407.2	325 .753	1.1238	1.3518	407.5	321 .760
430	8.0568-3	-3003.7	6.8140	28.428	221	1.0009	-1.0000	1.1337	1.3484	411.8	334 .750	1.1271	1.3504	412.1	328 .760
440	7.8735-3	-2992.3	6.8401	28.427	225	1.0011	-1.0001	1.1387	1.3466	416.3	343 .748	1.1304	1.3490	416.7	335 .760
450	7.6983-3	-2980.9	6.8658	28.427	229	1.0014	-1.0001	1.1440	1.3447	420.7	352 .745	1.1338	1.3477	421.2	342 .760
460	7.5307-3	-2969.4	6.8910	28.426	233	1.0018	-1.0001	1.1498	1.3427	425.0	362 .741	1.1372	1.3463	425.6	350 .760
470	7.3701-3	-2957.9	6.9158	28.424	238	1.0023	-1.0001	1.1561	1.3406	429.3	372 .738	1.1406	1.3449	430.0	357 .759
480	7.2162-3	-2946.3	6.9402	28.423	242	1.0028	-1.0001	1.1629	1.3384	433.5	383 .733	1.1441	1.3435	434.3	364 .759
490	7.0685-3	-2934.7	6.9642	28.421	245	1.0035	-1.0002	1.1703	1.3361	437.6	394 .728	1.1476	1.3421	438.6	371 .759
500	6.9266-3	-2922.9	6.9880	28.419	249	1.0043	-1.0002	1.1783	1.3337	441.7	406 .723	1.1511	1.3408	442.9	378 .759
510	6.7901-3	-2911.1	7.0114	28.416	253	1.0052	-1.0003	1.1870	1.3312	445.7	420 .717	1.1547	1.3394	447.1	386 .759
520	6.6588-3	-2899.2	7.0345	28.413	257	1.0062	-1.0003	1.1965	1.3286	449.6	433 .710	1.1583	1.3380	451.2	393 .758
530	6.5323-3	-2887.2	7.0574	28.409	261	1.0074	-1.0004	1.2068	1.3258	453.5	448 .703	1.1619	1.3367	455.3	401 .758
540	6.4104-3	-2875.0	7.0801	28.405	265	1.0088	-1.0005	1.2181	1.3229	457.3	464 .695	1.1656	1.3353	459.4	408 .757
550	6.2927-3	-2862.8	7.1025	28.400	269	1.0104	-1.0005	1.2303	1.3199	461.0	481 .687	1.1693	1.3340	463.5	416 .756
560	6.1791-3	-2850.4	7.1248	28.394	273	1.0122	-1.0006	1.2436	1.3168	464.7	500 .679	1.1730	1.3327	467.5	423 .755
570	6.0693-3	-2837.9	7.1470	28.387	276	1.0142	-1.0008	1.2581	1.3135	468.3	519 .670	1.1768	1.3314	471.5	431 .754
580	5.9630-3	-2825.3	7.1690	28.380	280	1.0165	-1.0009	1.2738	1.3102	471.8	540 .661	1.1806	1.3301	475.4	439 .754
590	5.8602-3	-2812.4	7.1909	28.371	284	1.0190	-1.0010	1.2909	1.3067	475.3	562 .652	1.1844	1.3288	479.3	447 .753

TABLE 27.4D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S	
600	5.7606-3	-2799.4	7.2127	28.362	287	1.0218	-1.0012	1.3094	1.3030	478.7	585 .643	1.1882	1.3275	483.2	455 .751
610	5.6639-3	-2786.2	7.2345	28.351	291	1.0249	-1.0014	1.3294	1.2993	482.1	610 .635	1.1921	1.3263	487.1	463 .750
620	5.5702-3	-2772.8	7.2563	28.338	295	1.0284	-1.0016	1.3511	1.2955	485.4	636 .626	1.1960	1.3251	491.0	471 .749
630	5.4791-3	-2759.2	7.2781	28.325	298	1.0322	-1.0018	1.3745	1.2915	488.7	664 .618	1.1999	1.3239	494.8	479 .748
640	5.3906-3	-2745.3	7.3000	28.309	302	1.0363	-1.0021	1.3997	1.2875	491.9	693 .610	1.2039	1.3227	498.6	487 .746
650	5.3045-3	-2731.2	7.3219	28.293	306	1.0409	-1.0023	1.4268	1.2834	495.1	723 .603	1.2078	1.3215	502.4	496 .745
660	5.2207-3	-2716.8	7.3439	28.274	309	1.0458	-1.0026	1.4559	1.2792	498.3	754 .596	1.2118	1.3204	506.2	504 .743
670	5.1390-3	-2702.1	7.3660	28.253	313	1.0511	-1.0030	1.4871	1.2749	501.4	787 .591	1.2158	1.3193	510.0	512 .742
680	5.0594-3	-2687.0	7.3883	28.231	316	1.0568	-1.0033	1.5204	1.2707	504.5	821 .586	1.2198	1.3183	513.8	521 .740
690	4.9817-3	-2671.7	7.4107	28.206	320	1.0629	-1.0037	1.5559	1.2664	507.5	855 .581	1.2238	1.3173	517.6	530 .738
700	4.9059-3	-2655.9	7.4334	28.179	323	1.0694	-1.0041	1.5935	1.2621	510.6	891 .578	1.2279	1.3163	521.4	539 .736
710	4.8318-3	-2639.8	7.4563	28.150	326	1.0763	-1.0045	1.6332	1.2578	513.6	927 .575	1.2319	1.3154	525.2	548 .734
720	4.7593-3	-2623.3	7.4794	28.119	330	1.0836	-1.0050	1.6750	1.2536	516.6	963 .574	1.2359	1.3145	529.0	557 .732
730	4.6885-3	-2606.3	7.5028	28.085	333	1.0912	-1.0055	1.7187	1.2494	519.6	999 .573	1.2400	1.3136	532.8	566 .730
740	4.6192-3	-2588.9	7.5265	28.048	336	1.0991	-1.0060	1.7639	1.2454	522.7	1035 .573	1.2440	1.3128	536.6	575 .728
750	4.5513-3	-2571.0	7.5505	28.010	340	1.1072	-1.0065	1.8102	1.2415	525.7	1070 .575	1.2480	1.3121	540.5	584 .726
760	4.4848-3	-2552.7	7.5748	27.968	343	1.1153	-1.0070	1.8572	1.2378	528.8	1104 .577	1.2520	1.3114	544.3	593 .724
770	4.4196-3	-2533.9	7.5994	27.925	346	1.1234	-1.0075	1.9041	1.2343	532.0	1136 .581	1.2559	1.3107	548.2	603 .722
780	4.3558-3	-2514.6	7.6242	27.879	350	1.1313	-1.0080	1.9498	1.2311	535.1	1165 .585	1.2599	1.3101	552.1	612 .720
790	4.2933-3	-2494.9	7.6493	27.831	353	1.1387	-1.0085	1.9934	1.2282	538.4	1190 .591	1.2637	1.3096	555.9	621 .717
800	4.2320-3	-2474.7	7.6747	27.781	356	1.1453	-1.0090	2.0332	1.2257	541.7	1211 .597	1.2676	1.3091	559.8	631 .715
810	4.1721-3	-2454.2	7.7001	27.730	359	1.1509	-1.0093	2.0676	1.2236	545.1	1227 .605	1.2713	1.3086	563.8	640 .713
820	4.1135-3	-2433.4	7.7257	27.678	362	1.1551	-1.0096	2.0947	1.2220	548.7	1236 .614	1.2751	1.3082	567.7	649 .711
830	4.0562-3	-2412.4	7.7512	27.626	365	1.1574	-1.0098	2.1123	1.2211	552.3	1237 .624	1.2787	1.3078	571.6	659 .709
840	4.0004-3	-2391.2	7.7766	27.574	368	1.1574	-1.0099	2.1186	1.2207	556.1	1231 .634	1.2823	1.3075	575.5	668 .707
850	3.9460-3	-2370.0	7.8016	27.523	371	1.1549	-1.0097	2.1115	1.2211	560.0	1216 .645	1.2857	1.3071	579.3	677 .706
860	3.8932-3	-2349.0	7.8262	27.474	374	1.1495	-1.0094	2.0900	1.2223	564.0	1192 .656	1.2891	1.3068	583.2	685 .704
870	3.8420-3	-2328.3	7.8501	27.428	377	1.1412	-1.0090	2.0537	1.2244	568.3	1162 .667	1.2924	1.3064	587.0	694 .703
880	3.7924-3	-2308.0	7.8733	27.385	380	1.1302	-1.0083	2.0037	1.2273	572.6	1125 .678	1.2956	1.3061	590.7	703 .702
890	3.7446-3	-2288.2	7.8956	27.347	383	1.1169	-1.0075	1.9426	1.2311	577.2	1085 .687	1.2987	1.3057	594.4	711 .701
900	3.6984-3	-2269.2	7.9170	27.313	386	1.1021	-1.0066	1.8742	1.2356	581.8	1044 .694	1.3017	1.3052	598.0	719 .700
910	3.6540-3	-2250.8	7.9373	27.285	389	1.0868	-1.0057	1.8032	1.2406	586.5	1005 .699	1.3046	1.3048	601.5	726 .699
920	3.6111-3	-2233.1	7.9566	27.261	392	1.0719	-1.0047	1.7341	1.2459	591.3	969 .702	1.3074	1.3043	605.0	734 .699
930	3.5698-3	-2216.1	7.9750	27.242	395	1.0582	-1.0038	1.6708	1.2511	595.9	939 .703	1.3101	1.3037	608.3	741 .699
940	3.5298-3	-2199.6	7.9926	27.227	398	1.0462	-1.0031	1.6156	1.2560	600.4	915 .703	1.3128	1.3031	611.6	748 .699
950	3.4912-3	-2183.7	8.0094	27.215	401	1.0361	-1.0024	1.5695	1.2603	604.8	896 .702	1.3154	1.3025	614.8	755 .699
960	3.4536-3	-2168.2	8.0257	27.206	404	1.0279	-1.0019	1.5323	1.2640	609.0	883 .701	1.3179	1.3019	618.0	762 .699
970	3.4172-3	-2153.1	8.0414	27.199	407	1.0214	-1.0015	1.5032	1.2669	612.9	874 .700	1.3205	1.3012	621.2	769 .699
980	3.3816-3	-2138.1	8.0567	27.194	410	1.0163	-1.0011	1.4808	1.2693	616.7	868 .699	1.3229	1.3006	624.3	775 .699
990	3.3470-3	-2123.4	8.0716	27.190	413	1.0124	-1.0009	1.4639	1.2710	620.3	865 .698	1.3254	1.2999	627.3	782 .699

TABLE 27.4D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
1000	3.3132-3	-2108.9	8.0863	27.187	416	1.0095	-1.0007	1.4513	1.2724	623.8	865 .697	1.3278	1.2993	630.4	788 .700
1050	3.1546-3	-2037.1	8.1563	27.180	430	1.0026	-1.0002	1.4241	1.2750	640.0	879 .696	1.3393	1.2960	645.2	821 .701
1100	3.0110-3	-1966.1	8.2224	27.178	444	1.0008	-1.0001	1.4202	1.2750	655.0	904 .697	1.3504	1.2929	659.6	853 .703
1150	2.8800-3	-1895.0	8.2855	27.177	457	1.0003	-1.0000	1.4218	1.2743	669.6	932 .698	1.3610	1.2900	673.7	884 .704
1200	2.7600-3	-1823.9	8.3461	27.177	471	1.0002	-1.0000	1.4251	1.2734	683.7	960 .699	1.3712	1.2872	687.4	916 .705
1250	2.6496-3	-1752.5	8.4044	27.177	484	1.0001	-1.0000	1.4290	1.2724	697.6	988 .701	1.3811	1.2846	700.9	947 .706
1300	2.5476-3	-1681.0	8.4605	27.177	498	1.0001	-1.0000	1.4333	1.2714	711.1	1017 .702	1.3905	1.2821	714.1	978 .707
1350	2.4533-3	-1609.2	8.5147	27.177	511	1.0000	-1.0000	1.4378	1.2703	724.3	1045 .702	1.3996	1.2797	727.0	1010 .708
1400	2.3657-3	-1537.2	8.5670	27.177	523	1.0000	-1.0000	1.4425	1.2692	737.3	1074 .703	1.4082	1.2776	739.7	1041 .708
1450	2.2841-3	-1464.9	8.6178	27.177	536	1.0000	-1.0000	1.4473	1.2681	750.0	1103 .704	1.4165	1.2755	752.2	1072 .709
1500	2.2079-3	-1392.4	8.6669	27.177	549	1.0000	-1.0000	1.4522	1.2669	762.5	1132 .704	1.4244	1.2735	764.5	1103 .709
1550	2.1367-3	-1319.7	8.7146	27.177	561	1.0000	-1.0000	1.4571	1.2658	774.8	1161 .705	1.4320	1.2717	776.6	1133 .709
1600	2.0699-3	-1246.7	8.7609	27.177	574	1.0000	-1.0000	1.4620	1.2647	786.8	1190 .705	1.4392	1.2700	788.4	1164 .709
1650	2.0072-3	-1173.5	8.8060	27.176	586	1.0001	-1.0000	1.4670	1.2635	798.6	1220 .705	1.4461	1.2683	800.2	1195 .709
1700	1.9482-3	-1100.0	8.8499	27.176	598	1.0001	-1.0000	1.4720	1.2624	810.3	1249 .704	1.4527	1.2668	811.7	1225 .709
1750	1.8925-3	-1026.3	8.8926	27.176	610	1.0001	-1.0000	1.4771	1.2613	821.8	1280 .704	1.4589	1.2654	823.1	1256 .709
1800	1.8399-3	-952.3	8.9343	27.176	622	1.0002	-1.0000	1.4823	1.2602	833.1	1311 .703	1.4649	1.2640	834.3	1286 .708
1850	1.7902-3	-878.1	8.9750	27.176	634	1.0003	-1.0000	1.4878	1.2591	844.2	1343 .702	1.4705	1.2627	845.4	1316 .708
1900	1.7431-3	-803.5	9.0147	27.176	645	1.0005	-1.0000	1.4937	1.2579	855.1	1376 .700	1.4759	1.2615	856.3	1346 .708
1950	1.6983-3	-728.7	9.0536	27.175	657	1.0008	-1.0000	1.5001	1.2567	865.9	1411 .698	1.4810	1.2604	867.2	1376 .707
2000	1.6558-3	-653.5	9.0917	27.175	668	1.0011	-1.0000	1.5075	1.2553	876.4	1448 .696	1.4859	1.2593	877.8	1405 .707
2050	1.6154-3	-577.9	9.1290	27.174	680	1.0016	-1.0001	1.5160	1.2538	886.8	1488 .693	1.4906	1.2583	888.4	1435 .706
2100	1.5769-3	-501.9	9.1657	27.172	691	1.0023	-1.0001	1.5261	1.2521	897.0	1531 .689	1.4950	1.2574	898.9	1464 .706
2150	1.5401-3	-425.3	9.2017	27.171	702	1.0033	-1.0001	1.5385	1.2502	906.9	1578 .684	1.4992	1.2565	909.2	1493 .705
2200	1.5049-3	-348.0	9.2373	27.168	713	1.0047	-1.0002	1.5540	1.2479	916.6	1632 .679	1.5031	1.2556	919.5	1522 .704
2250	1.4713-3	-269.8	9.2724	27.165	724	1.0065	-1.0002	1.5734	1.2451	926.0	1693 .673	1.5069	1.2549	929.6	1551 .703
2300	1.4391-3	-190.5	9.3072	27.160	735	1.0090	-1.0003	1.5982	1.2418	935.0	1764 .666	1.5105	1.2542	939.7	1581 .702
2350	1.4082-3	-109.9	9.3419	27.154	746	1.0124	-1.0004	1.6299	1.2378	943.8	1847 .658	1.5140	1.2535	949.7	1610 .701
2400	1.3784-3	-27.4	9.3766	27.146	756	1.0169	-1.0006	1.6704	1.2331	952.1	1946 .649	1.5172	1.2529	959.7	1639 .700
2450	1.3497-3	57.4	9.4116	27.135	767	1.0229	-1.0008	1.7222	1.2275	959.9	2063 .640	1.5203	1.2524	969.6	1668 .699
2500	1.3220-3	145.0	9.4470	27.120	778	1.0308	-1.0011	1.7878	1.2211	967.4	2205 .630	1.5232	1.2520	979.6	1697 .698
2550	1.2952-3	236.4	9.4832	27.101	788	1.0410	-1.0016	1.8699	1.2140	974.5	2376 .620	1.5260	1.2516	989.5	1727 .696
2600	1.2691-3	332.3	9.5205	27.076	798	1.0539	-1.0021	1.9707	1.2063	981.4	2580 .610	1.5286	1.2514	999.6	1757 .694
2650	1.2437-3	433.8	9.5591	27.044	808	1.0699	-1.0028	2.0916	1.1983	988.1	2824 .599	1.5310	1.2513	1009.7	1787 .692
2700	1.2189-3	541.8	9.5995	27.004	818	1.0891	-1.0036	2.2325	1.1905	994.8	3112 .587	1.5333	1.2513	1019.9	1817 .691
2750	1.1945-3	657.4	9.6419	26.955	828	1.1114	-1.0046	2.3914	1.1831	1001.8	3444 .575	1.5354	1.2514	1030.3	1847 .688
2800	1.1706-3	781.2	9.6865	26.895	838	1.1365	-1.0057	2.5647	1.1764	1009.1	3823 .562	1.5374	1.2517	1040.9	1877 .686
2850	1.1470-3	914.0	9.7335	26.823	847	1.1638	-1.0070	2.7479	1.1706	1016.9	4247 .548	1.5393	1.2521	1051.7	1908 .684
2900	1.1237-3	1056.1	9.7829	26.740	857	1.1928	-1.0085	2.9365	1.1657	1025.3	4713 .534	1.5410	1.2528	1062.8	1939 .681
2950	1.1007-3	1207.7	9.8348	26.646	866	1.2230	-1.0100	3.1266	1.1618	1034.1	5218 .519	1.5426	1.2536	1074.2	1971 .678
3000	1.0781-3	1368.7	9.8889	26.539	875	1.2540	-1.0117	3.3155	1.1586	1043.5	5761 .504	1.5442	1.2545	1085.9	2003 .675

TABLE 27.5D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S	
200	8.6616-2	-3255.5	5.5084	28.430	111	1.0000	-1.0000	1.0661	1.3780	283.9	149 .790	1.0661	1.3780	283.9	149 .790
210	8.2491-2	-3244.8	5.5604	28.430	116	1.0000	-1.0000	1.0679	1.3771	290.8	158 .785	1.0679	1.3771	290.8	158 .785
220	7.8742-2	-3234.1	5.6102	28.430	122	1.0000	-1.0000	1.0699	1.3762	297.6	167 .781	1.0699	1.3762	297.6	167 .781
230	7.5318-2	-3223.4	5.6578	28.430	127	1.0000	-1.0000	1.0720	1.3752	304.1	175 .777	1.0719	1.3752	304.1	175 .777
240	7.2180-2	-3212.7	5.7034	28.430	132	1.0000	-1.0000	1.0741	1.3742	310.6	183 .774	1.0741	1.3742	310.6	183 .774
250	6.9293-2	-3202.0	5.7473	28.430	137	1.0000	-1.0000	1.0763	1.3731	316.8	192 .772	1.0763	1.3731	316.8	192 .772
260	6.6628-2	-3191.2	5.7896	28.430	143	1.0000	-1.0000	1.0786	1.3720	323.0	200 .770	1.0785	1.3720	323.0	200 .770
270	6.4160-2	-3180.4	5.8303	28.430	148	1.0000	-1.0000	1.0810	1.3709	329.0	208 .768	1.0809	1.3709	329.0	208 .768
280	6.1869-2	-3169.6	5.8697	28.430	153	1.0000	-1.0000	1.0834	1.3697	334.9	216 .767	1.0833	1.3698	334.9	216 .767
290	5.9736-2	-3158.7	5.9077	28.430	158	1.0000	-1.0000	1.0859	1.3686	340.7	223 .766	1.0858	1.3686	340.7	223 .766
298	5.8103-2	-3149.9	5.9379	28.430	162	1.0000	-1.0000	1.0880	1.3676	345.3	230 .765	1.0879	1.3676	345.3	230 .765
300	5.7744-2	-3147.8	5.9446	28.430	162	1.0000	-1.0000	1.0885	1.3674	346.4	231 .765	1.0884	1.3674	346.4	231 .765
310	5.5882-2	-3136.9	5.9803	28.430	167	1.0000	-1.0000	1.0912	1.3661	351.9	239 .765	1.0911	1.3662	351.9	239 .765
320	5.4135-2	-3126.0	6.0150	28.430	172	1.0000	-1.0000	1.0940	1.3649	357.4	246 .765	1.0938	1.3650	357.4	246 .765
330	5.2495-2	-3115.1	6.0487	28.430	177	1.0000	-1.0000	1.0968	1.3636	362.8	253 .765	1.0965	1.3637	362.8	253 .765
340	5.0951-2	-3104.1	6.0815	28.430	181	1.0000	-1.0000	1.0997	1.3623	368.0	261 .765	1.0993	1.3624	368.1	261 .765
350	4.9495-2	-3093.1	6.1134	28.430	186	1.0000	-1.0000	1.1027	1.3610	373.2	268 .765	1.1022	1.3612	373.3	268 .765
360	4.8120-2	-3082.0	6.1445	28.430	191	1.0000	-1.0000	1.1057	1.3596	378.3	276 .764	1.1052	1.3598	378.4	275 .765
370	4.6820-2	-3071.0	6.1749	28.430	195	1.0000	-1.0000	1.1089	1.3582	383.4	283 .763	1.1082	1.3585	383.4	283 .764
380	4.5588-2	-3059.8	6.2045	28.430	200	1.0001	-1.0000	1.1121	1.3568	388.3	291 .762	1.1112	1.3572	388.4	291 .763
390	4.4419-2	-3048.7	6.2334	28.430	204	1.0001	-1.0000	1.1155	1.3554	393.2	299 .761	1.1143	1.3559	393.2	298 .762
400	4.3308-2	-3037.5	6.2617	28.430	208	1.0001	-1.0000	1.1190	1.3540	398.0	307 .759	1.1174	1.3545	398.1	306 .761
410	4.2252-2	-3026.3	6.2894	28.430	213	1.0002	-1.0000	1.1226	1.3525	402.7	315 .758	1.1206	1.3531	402.8	313 .761
420	4.1245-2	-3015.1	6.3165	28.429	217	1.0003	-1.0000	1.1263	1.3509	407.4	323 .757	1.1238	1.3518	407.5	321 .760
430	4.0286-2	-3003.8	6.3430	28.429	221	1.0003	-1.0000	1.1302	1.3494	411.9	331 .756	1.1271	1.3504	412.1	328 .760
440	3.9370-2	-2992.5	6.3691	28.429	225	1.0005	-1.0000	1.1343	1.3478	416.5	339 .754	1.1304	1.3490	416.7	335 .760
450	3.8495-2	-2981.1	6.3946	28.429	229	1.0006	-1.0000	1.1385	1.3462	420.9	347 .753	1.1337	1.3477	421.1	342 .760
460	3.7657-2	-2969.7	6.4197	28.428	233	1.0008	-1.0000	1.1430	1.3445	425.3	355 .751	1.1371	1.3463	425.6	349 .760
470	3.6855-2	-2958.3	6.4443	28.428	238	1.0010	-1.0001	1.1477	1.3428	429.6	364 .750	1.1405	1.3449	430.0	357 .760
480	3.6087-2	-2946.8	6.4685	28.427	241	1.0012	-1.0001	1.1526	1.3410	433.9	372 .748	1.1440	1.3435	434.3	364 .760
490	3.5349-2	-2935.2	6.4923	28.426	245	1.0015	-1.0001	1.1579	1.3392	438.1	381 .745	1.1474	1.3421	438.6	371 .760
500	3.4641-2	-2923.6	6.5158	28.425	249	1.0019	-1.0001	1.1634	1.3374	442.3	391 .743	1.1509	1.3407	442.8	378 .760
510	3.3960-2	-2911.9	6.5389	28.424	253	1.0023	-1.0001	1.1693	1.3354	446.3	401 .739	1.1545	1.3394	447.0	385 .759
520	3.3306-2	-2900.2	6.5616	28.423	257	1.0027	-1.0001	1.1755	1.3335	450.4	411 .736	1.1580	1.3380	451.1	393 .759
530	3.2675-2	-2888.4	6.5841	28.421	261	1.0033	-1.0002	1.1821	1.3314	454.3	422 .732	1.1616	1.3366	455.2	400 .758
540	3.2068-2	-2876.6	6.6063	28.419	265	1.0039	-1.0002	1.1892	1.3293	458.3	433 .727	1.1652	1.3353	459.3	407 .758
550	3.1483-2	-2864.6	6.6281	28.417	269	1.0046	-1.0002	1.1967	1.3271	462.1	445 .723	1.1688	1.3339	463.3	415 .757
560	3.0918-2	-2852.6	6.6498	28.414	273	1.0054	-1.0003	1.2048	1.3249	465.9	457 .718	1.1725	1.3326	467.3	422 .757
570	3.0372-2	-2840.5	6.6712	28.412	276	1.0064	-1.0003	1.2134	1.3226	469.7	470 .713	1.1762	1.3312	471.2	430 .756
580	2.9845-2	-2828.4	6.6924	28.408	280	1.0074	-1.0004	1.2226	1.3202	473.4	484 .707	1.1799	1.3299	475.1	437 .755
590	2.9335-2	-2816.1	6.7133	28.404	284	1.0086	-1.0005	1.2325	1.3177	477.1	499 .701	1.1836	1.3286	479.0	445 .755

TABLE 27.5D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	2.8842-2	-2803.7	6.7342	28.400	287	1.0099	-1.0006	1.2430	1.3152	480.6	514	.695	1.1873	1.3273	482.9	453	.754
610	2.8364-2	-2791.2	6.7548	28.395	291	1.0114	-1.0006	1.2544	1.3126	484.2	530	.689	1.1911	1.3260	486.7	460	.753
620	2.7901-2	-2778.6	6.7753	28.389	295	1.0130	-1.0007	1.2665	1.3099	487.7	547	.682	1.1948	1.3247	490.4	468	.752
630	2.7452-2	-2765.9	6.7957	28.383	298	1.0148	-1.0009	1.2796	1.3071	491.1	565	.676	1.1986	1.3234	494.2	476	.751
640	2.7016-2	-2753.0	6.8159	28.376	302	1.0168	-1.0010	1.2935	1.3042	494.5	584	.669	1.2024	1.3222	497.9	484	.750
650	2.6593-2	-2740.0	6.8361	28.368	305	1.0190	-1.0011	1.3085	1.3012	497.9	603	.663	1.2062	1.3210	501.7	492	.749
660	2.6182-2	-2726.8	6.8562	28.359	309	1.0215	-1.0013	1.3246	1.2982	501.2	624	.656	1.2100	1.3198	505.3	500	.748
670	2.5783-2	-2713.5	6.8762	28.350	313	1.0241	-1.0014	1.3419	1.2950	504.4	645	.650	1.2138	1.3186	509.0	508	.747
680	2.5394-2	-2700.0	6.8962	28.339	316	1.0270	-1.0016	1.3603	1.2918	507.7	668	.644	1.2176	1.3174	512.7	516	.746
690	2.5015-2	-2686.3	6.9162	28.327	319	1.0302	-1.0018	1.3801	1.2885	510.8	691	.638	1.2215	1.3163	516.3	524	.745
700	2.4647-2	-2672.4	6.9363	28.314	323	1.0336	-1.0020	1.4012	1.2851	514.0	716	.632	1.2253	1.3152	519.9	532	.744
710	2.4287-2	-2658.3	6.9563	28.300	326	1.0373	-1.0023	1.4238	1.2817	517.1	741	.627	1.2291	1.3141	523.6	540	.743
720	2.3937-2	-2643.9	6.9764	28.284	330	1.0414	-1.0025	1.4479	1.2782	520.1	768	.622	1.2329	1.3131	527.2	548	.741
730	2.3595-2	-2629.3	6.9965	28.267	333	1.0457	-1.0028	1.4735	1.2747	523.2	795	.617	1.2368	1.3120	530.8	557	.740
740	2.3261-2	-2614.4	7.0167	28.249	336	1.0503	-1.0031	1.5007	1.2711	526.2	824	.613	1.2406	1.3110	534.4	565	.739
750	2.2934-2	-2599.3	7.0371	28.229	340	1.0553	-1.0034	1.5295	1.2675	529.1	853	.610	1.2444	1.3101	538.0	573	.737
760	2.2615-2	-2583.9	7.0575	28.207	343	1.0606	-1.0037	1.5599	1.2639	532.1	883	.606	1.2482	1.3092	541.6	582	.736
770	2.2303-2	-2568.1	7.0781	28.184	346	1.0662	-1.0041	1.5919	1.2603	535.1	913	.604	1.2520	1.3083	545.1	590	.735
780	2.1997-2	-2552.0	7.0989	28.159	350	1.0721	-1.0045	1.6255	1.2567	538.0	944	.602	1.2558	1.3074	548.7	599	.733
790	2.1698-2	-2535.6	7.1198	28.132	353	1.0783	-1.0049	1.6605	1.2532	540.9	976	.601	1.2595	1.3066	552.3	608	.732
800	2.1405-2	-2518.8	7.1409	28.103	356	1.0847	-1.0053	1.6967	1.2498	543.9	1007	.600	1.2632	1.3058	555.9	616	.730
810	2.1118-2	-2501.6	7.1622	28.072	359	1.0914	-1.0058	1.7340	1.2464	546.8	1039	.600	1.2669	1.3051	559.6	625	.728
820	2.0836-2	-2484.1	7.1837	28.039	363	1.0983	-1.0062	1.7721	1.2432	549.8	1070	.600	1.2706	1.3044	563.2	634	.727
830	2.0559-2	-2466.2	7.2055	28.005	366	1.1052	-1.0067	1.8106	1.2401	552.8	1101	.602	1.2742	1.3038	566.8	642	.725
840	2.0288-2	-2447.9	7.2274	27.968	369	1.1122	-1.0071	1.8491	1.2372	555.8	1130	.603	1.2778	1.3032	570.5	651	.724
850	2.0022-2	-2429.2	7.2495	27.930	372	1.1191	-1.0076	1.8870	1.2345	558.9	1158	.606	1.2814	1.3026	574.1	660	.722
860	1.9761-2	-2410.2	7.2718	27.890	375	1.1258	-1.0081	1.9235	1.2321	562.0	1184	.609	1.2849	1.3021	577.8	668	.721
870	1.9505-2	-2390.8	7.2942	27.849	378	1.1321	-1.0085	1.9581	1.2299	565.2	1207	.613	1.2883	1.3016	581.5	677	.719
880	1.9253-2	-2371.0	7.3168	27.806	381	1.1378	-1.0089	1.9897	1.2280	568.4	1228	.618	1.2917	1.3012	585.1	686	.718
890	1.9007-2	-2351.0	7.3394	27.762	384	1.1428	-1.0093	2.0174	1.2264	571.8	1244	.623	1.2951	1.3008	588.8	694	.716
900	1.8765-2	-2330.7	7.3621	27.717	387	1.1468	-1.0096	2.0401	1.2252	575.1	1256	.629	1.2984	1.3005	592.5	703	.715
910	1.8529-2	-2310.2	7.3847	27.671	390	1.1496	-1.0098	2.0566	1.2244	578.6	1262	.635	1.3016	1.3001	596.2	712	.713
920	1.8297-2	-2289.6	7.4073	27.626	393	1.1510	-1.0099	2.0660	1.2241	582.2	1263	.642	1.3047	1.2998	599.9	720	.712
930	1.8071-2	-2268.9	7.4296	27.581	396	1.1507	-1.0100	2.0672	1.2242	585.8	1259	.650	1.3078	1.2996	603.6	729	.710
940	1.7850-2	-2248.3	7.4517	27.537	399	1.1485	-1.0099	2.0594	1.2248	589.6	1248	.658	1.3108	1.2993	607.3	737	.709
950	1.7635-2	-2227.7	7.4734	27.494	402	1.1444	-1.0097	2.0422	1.2259	593.5	1231	.666	1.3137	1.2990	610.9	745	.708
960	1.7425-2	-2207.4	7.4946	27.453	404	1.1383	-1.0093	2.0154	1.2276	597.4	1209	.674	1.3166	1.2988	614.5	753	.707
970	1.7222-2	-2187.5	7.5154	27.415	407	1.1302	-1.0088	1.9797	1.2298	601.5	1183	.682	1.3194	1.2985	618.0	761	.706
980	1.7024-2	-2167.9	7.5354	27.380	410	1.1205	-1.0082	1.9363	1.2326	605.6	1153	.689	1.3221	1.2982	621.6	769	.705
990	1.6832-2	-2148.8	7.5549	27.348	413	1.1094	-1.0075	1.8869	1.2358	609.9	1122	.695	1.3247	1.2979	625.0	777	.705

TABLE 27.5D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	1.6647-2	-2130.2	7.5736	27.319	416	1.0975	-1.0068	1.8338	1.2394	614.2	1091	.699	1.3273	1.2975	628.4	784	.704
1050	1.5801-2	-2044.9	7.6568	27.228	430	1.0426	-1.0031	1.5926	1.2584	635.2	970	.706	1.3392	1.2954	644.5	819	.703
1100	1.5064-2	-1968.7	7.7277	27.195	444	1.0146	-1.0011	1.4757	1.2693	653.4	934	.701	1.3504	1.2927	659.4	852	.703
1150	1.4403-2	-1896.0	7.7924	27.184	457	1.0050	-1.0004	1.4395	1.2726	669.0	941	.700	1.3610	1.2899	673.6	884	.704
1200	1.3801-2	-1824.3	7.8534	27.180	471	1.0019	-1.0002	1.4312	1.2729	683.6	963	.700	1.3713	1.2871	687.4	916	.705
1250	1.3249-2	-1752.7	7.9118	27.179	484	1.0009	-1.0001	1.4315	1.2723	697.5	989	.701	1.3811	1.2845	700.9	947	.706
1300	1.2739-2	-1681.1	7.9680	27.178	498	1.0005	-1.0001	1.4344	1.2713	711.1	1017	.702	1.3905	1.2821	714.1	978	.707
1350	1.2267-2	-1609.3	8.0222	27.177	511	1.0003	-1.0000	1.4384	1.2703	724.3	1045	.703	1.3996	1.2797	727.0	1010	.708
1400	1.1829-2	-1537.2	8.0746	27.177	523	1.0002	-1.0000	1.4429	1.2692	737.3	1074	.703	1.4082	1.2775	739.7	1041	.708
1450	1.1421-2	-1465.0	8.1253	27.177	536	1.0001	-1.0000	1.4475	1.2681	750.0	1103	.704	1.4165	1.2755	752.2	1072	.709
1500	1.1040-2	-1392.5	8.1745	27.177	549	1.0001	-1.0000	1.4523	1.2669	762.5	1131	.704	1.4244	1.2735	764.5	1103	.709
1550	1.0684-2	-1319.7	8.2222	27.177	561	1.0001	-1.0000	1.4571	1.2658	774.8	1160	.705	1.4320	1.2717	776.6	1133	.709
1600	1.0350-2	-1246.8	8.2685	27.177	574	1.0001	-1.0000	1.4619	1.2647	786.8	1189	.705	1.4392	1.2700	788.4	1164	.709
1650	1.0036-2	-1173.6	8.3136	27.177	586	1.0001	-1.0000	1.4667	1.2636	798.7	1219	.705	1.4461	1.2683	800.2	1195	.709
1700	9.7410-3	-1100.1	8.3574	27.177	598	1.0001	-1.0000	1.4715	1.2625	810.3	1248	.705	1.4527	1.2668	811.7	1225	.709
1750	9.4626-3	-1026.4	8.4002	27.177	610	1.0001	-1.0000	1.4763	1.2615	821.8	1278	.705	1.4589	1.2654	823.1	1255	.709
1800	9.1998-3	-952.5	8.4418	27.177	622	1.0001	-1.0000	1.4811	1.2604	833.1	1307	.704	1.4649	1.2640	834.3	1286	.708
1850	8.9511-3	-878.3	8.4825	27.176	634	1.0002	-1.0000	1.4859	1.2594	844.3	1338	.704	1.4705	1.2627	845.4	1316	.708
1900	8.7155-3	-803.9	8.5222	27.176	645	1.0002	-1.0000	1.4909	1.2583	855.3	1368	.703	1.4759	1.2615	856.3	1346	.708
1950	8.4919-3	-729.2	8.5609	27.176	657	1.0004	-1.0000	1.4960	1.2573	866.1	1400	.702	1.4810	1.2604	867.1	1376	.707
2000	8.2796-3	-654.3	8.5989	27.176	668	1.0005	-1.0000	1.5014	1.2562	876.7	1432	.700	1.4859	1.2593	877.8	1405	.707
2050	8.0775-3	-579.1	8.6360	27.175	680	1.0007	-1.0000	1.5072	1.2551	887.3	1466	.699	1.4906	1.2583	888.4	1435	.706
2100	7.8850-3	-503.5	8.6724	27.175	691	1.0010	-1.0000	1.5137	1.2539	897.6	1500	.697	1.4950	1.2573	898.8	1464	.706
2150	7.7014-3	-427.7	8.7081	27.174	702	1.0015	-1.0001	1.5210	1.2527	907.8	1537	.695	1.4992	1.2564	909.1	1493	.705
2200	7.5261-3	-351.4	8.7432	27.173	713	1.0020	-1.0001	1.5296	1.2512	917.8	1577	.692	1.5031	1.2556	919.4	1522	.704
2250	7.3584-3	-274.7	8.7777	27.171	724	1.0028	-1.0001	1.5396	1.2496	927.6	1619	.688	1.5069	1.2548	929.5	1551	.704
2300	7.1979-3	-197.4	8.8116	27.169	735	1.0039	-1.0001	1.5518	1.2478	937.2	1666	.685	1.5105	1.2541	939.5	1580	.703
2350	7.0441-3	-119.5	8.8452	27.167	746	1.0052	-1.0002	1.5665	1.2457	946.5	1718	.680	1.5140	1.2534	949.4	1609	.702
2400	6.8965-3	-40.7	8.8783	27.163	757	1.0071	-1.0003	1.5847	1.2432	955.7	1775	.675	1.5172	1.2527	959.3	1638	.701
2450	6.7546-3	39.1	8.9112	27.159	767	1.0094	-1.0003	1.6070	1.2403	964.5	1841	.670	1.5203	1.2521	969.1	1667	.700
2500	6.6180-3	120.1	8.9440	27.153	778	1.0125	-1.0005	1.6347	1.2370	973.1	1915	.664	1.5233	1.2516	978.8	1696	.699
2550	6.4864-3	202.7	8.9767	27.145	788	1.0165	-1.0006	1.6688	1.2331	981.4	2002	.657	1.5261	1.2511	988.5	1725	.697
2600	6.3593-3	287.1	9.0095	27.135	799	1.0216	-1.0008	1.7108	1.2287	989.4	2102	.650	1.5287	1.2507	998.2	1754	.696
2650	6.2364-3	373.9	9.0425	27.122	809	1.0280	-1.0011	1.7620	1.2237	997.0	2217	.643	1.5313	1.2503	1007.8	1783	.694
2700	6.1173-3	463.5	9.0760	27.106	819	1.0360	-1.0014	1.8237	1.2182	1004.4	2352	.635	1.5337	1.2500	1017.5	1812	.693
2750	6.0016-3	556.5	9.1101	27.086	829	1.0458	-1.0018	1.8971	1.2123	1011.6	2509	.627	1.5359	1.2498	1027.1	1841	.692
2800	5.8889-3	653.4	9.1451	27.061	839	1.0576	-1.0024	1.9828	1.2062	1018.7	2689	.619	1.5381	1.2496	1036.8	1870	.690
2850	5.7790-3	754.9	9.1810	27.030	849	1.0714	-1.0030	2.0807	1.2001	1025.7	2896	.610	1.5401	1.2496	1046.6	1899	.689
2900	5.6716-3	861.7	9.2181	26.993	859	1.0873	-1.0037	2.1898	1.1941	1032.8	3131	.601	1.5420	1.2496	1056.5	1928	.687
2950	5.5663-3	974.1	9.2566	26.948	868	1.1051	-1.0046	2.3085	1.1886	1040.1	3394	.591	1.5438	1.2498	1066.5	1956	.685
3000	5.4630-3	1092.6	9.2964	26.896	878	1.1246	-1.0055	2.4344	1.1835	1047.6	3685	.580	1.5455	1.2500	1076.7	1986	.683

TABLE 27.1E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.155-5	-3620.9	6.5601	27.177	1.076	1.041	1.845-5	30.281	129	1.0000	-1.000	0.979	1.390	276	171	.735	0.979	1.390	171	.735
220	1.954-5	-3596.4	6.6769	27.177	1.544	1.062	1.676-5	30.251	140	1.0000	-1.000	0.983	1.388	290	188	.731	0.983	1.388	188	.731
240	1.748-5	-3538.8	6.9250	27.177	5.465	1.085	1.521-5	29.954	147	1.0000	-1.000	0.999	1.385	304	200	.736	0.999	1.385	200	.736
260	1.335-5	-3206.8	8.2366	27.2324	1.348	1.088	1.309-5	27.921	139	1.0000	-1.000	1.096	1.373	326	196	.782	1.096	1.373	195	.782
280	1.237-5	-3181.1	8.3323	27.269	1.114	1.092	1.215-5	27.919	149	1.0000	-1.000	1.101	1.371	338	212	.778	1.100	1.371	211	.779
298	1.162-5	-3160.8	8.4027	27.312	1.125	1.096	1.142-5	27.938	159	1.0001	-1.000	1.105	1.369	349	226	.773	1.103	1.369	225	.776
300	1.155-5	-3158.7	8.4096	27.317	1.126	1.097	1.135-5	27.940	159	1.0002	-1.000	1.105	1.369	350	228	.773	1.103	1.369	227	.776
320	1.083-5	-3136.1	8.4827	27.375	1.138	1.101	1.065-5	27.967	169	1.0005	-1.000	1.111	1.366	360	245	.767	1.107	1.367	242	.775
340	1.019-5	-3113.2	8.5521	27.443	1.153	1.106	1.003-5	27.997	179	1.0012	-1.000	1.121	1.361	371	265	.757	1.111	1.365	256	.775
360	9.622-6	-3089.9	8.6186	27.517	1.174	1.112	9.488-6	28.028	188	1.0028	-1.000	1.138	1.355	380	291	.736	1.115	1.363	272	.773
380	9.114-6	-3066.1	8.6828	27.594	1.205	1.117	8.999-6	28.059	198	1.0057	-1.000	1.165	1.346	389	327	.705	1.119	1.360	288	.769
400	8.654-6	-3041.6	8.7457	27.672	1.251	1.123	8.557-6	28.087	207	1.0109	-1.000	1.207	1.334	397	377	.663	1.125	1.357	304	.765
420	8.236-6	-3016.0	8.8083	27.745	1.318	1.129	8.156-6	28.107	216	1.0193	-1.001	1.270	1.318	405	445	.615	1.130	1.355	320	.762
440	7.852-6	-2988.7	8.8717	27.808	1.412	1.136	7.787-6	28.115	224	1.0322	-1.001	1.361	1.299	411	537	.568	1.136	1.352	336	.758
460	7.496-6	-2959.3	8.9371	27.857	1.539	1.144	7.446-6	28.106	233	1.0504	-1.002	1.482	1.279	417	652	.529	1.144	1.349	354	.753
480	7.164-6	-2926.9	9.0058	27.884	1.698	1.152	7.128-6	28.074	241	1.0742	-1.003	1.634	1.259	423	784	.503	1.152	1.346	372	.746
500	6.852-6	-2891.1	9.0789	27.887	1.887	1.161	6.828-6	28.015	250	1.1030	-1.005	1.812	1.241	429	923	.490	1.161	1.344	392	.738
520	6.556-6	-2851.3	9.1569	27.862	2.096	1.171	6.545-6	27.926	258	1.1348	-1.007	2.003	1.227	436	1051	.491	1.171	1.341	415	.727
540	6.275-6	-2807.3	9.2399	27.807	2.188	1.182	6.275-6	27.807	266	1.1656	-1.008	2.188	1.216	443	1151	.505	1.182	1.339	439	.716
560	6.013-6	-2762.5	9.3214	27.631	2.275	1.193	6.013-6	27.631	274	1.1794	-1.009	2.275	1.212	452	1149	.542	1.193	1.337	463	.705
580	5.770-6	-2717.3	9.4008	27.461	2.222	1.204	5.770-6	27.461	281	1.1680	-1.009	2.222	1.215	462	1054	.593	1.204	1.336	487	.695
600	5.550-6	-2674.9	9.4727	27.323	1.988	1.214	5.550-6	27.323	289	1.1246	-1.007	1.988	1.230	474	887	.647	1.214	1.335	509	.688
620	5.354-6	-2638.3	9.5327	27.237	1.675	1.222	5.354-6	27.237	296	1.0670	-1.004	1.675	1.256	488	728	.680	1.222	1.333	529	.684
640	5.179-6	-2607.2	9.5821	27.198	1.465	1.229	5.179-6	27.198	303	1.0272	-1.001	1.465	1.280	500	645	.688	1.229	1.331	545	.683
660	5.019-6	-2578.9	9.6257	27.184	1.380	1.235	5.019-6	27.184	310	1.0097	-1.001	1.380	1.291	510	622	.687	1.235	1.329	560	.683
680	4.871-6	-2551.6	9.6664	27.179	1.357	1.241	4.871-6	27.179	316	1.0034	-1.000	1.357	1.293	519	626	.687	1.241	1.327	575	.683
700	4.731-6	-2524.4	9.7057	27.178	1.356	1.247	4.731-6	27.178	323	1.0012	-1.000	1.356	1.292	526	638	.686	1.247	1.325	589	.684
720	4.600-6	-2497.3	9.7440	27.177	1.361	1.253	4.600-6	27.177	330	1.0005	-1.000	1.361	1.290	533	653	.687	1.253	1.323	603	.685
740	4.476-6	-2470.0	9.7814	27.177	1.368	1.259	4.476-6	27.177	336	1.0002	-1.000	1.368	1.288	540	669	.687	1.259	1.321	617	.686
760	4.358-6	-2442.6	9.8180	27.177	1.374	1.264	4.358-6	27.177	343	1.0001	-1.000	1.374	1.286	547	685	.688	1.264	1.319	630	.687
780	4.246-6	-2415.0	9.8537	27.177	1.380	1.270	4.246-6	27.177	349	1.0000	-1.000	1.380	1.285	554	700	.688	1.270	1.317	644	.688
800	4.140-6	-2387.4	9.8887	27.177	1.385	1.276	4.140-6	27.177	355	1.0000	-1.000	1.385	1.283	560	715	.688	1.276	1.316	658	.689

TABLE 27.2E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.155-4	-3621.1	6.0178	27.177	1.044	1.041	1.845-4	30.283	129	1.0000	-1.000	0.979	1.390	276	172	.735	0.979	1.390	172	.735
220	1.959-4	-3599.8	6.1196	27.177	1.110	1.062	1.677-4	30.280	140	1.0000	-1.000	0.982	1.388	290	188	.731	0.982	1.388	188	.731
240	1.791-4	-3574.8	6.2281	27.177	1.501	1.085	1.536-4	30.250	150	1.0000	-1.000	0.986	1.386	302	204	.728	0.986	1.387	204	.728
260	1.626-4	-3528.3	6.4128	27.177	3.744	1.106	1.408-4	30.047	159	1.0000	-1.000	0.998	1.384	316	217	.730	0.998	1.384	217	.730
280	1.388-4	-3352.9	7.0578	27.196	11.927	1.254	1.266-4	29.087	160	1.0000	-1.000	1.044	1.377	332	222	.752	1.044	1.377	222	.752
298	1.162-4	-3160.8	7.7292	27.312	1.123	1.096	1.142-4	27.938	159	1.0000	-1.000	1.103	1.369	349	226	.775	1.103	1.369	225	.776
300	1.155-4	-3158.7	7.7361	27.317	1.124	1.097	1.135-4	27.941	159	1.0001	-1.000	1.104	1.369	350	227	.775	1.103	1.369	227	.776
320	1.083-4	-3136.2	7.8090	27.376	1.135	1.101	1.065-4	27.967	169	1.0001	-1.000	1.108	1.367	361	243	.773	1.107	1.367	242	.775
340	1.019-4	-3113.4	7.8782	27.443	1.145	1.106	1.004-4	27.998	179	1.0004	-1.000	1.114	1.364	371	259	.769	1.111	1.365	256	.775
360	9.623-5	-3090.3	7.9439	27.518	1.157	1.112	9.489-5	28.031	188	1.0009	-1.000	1.122	1.360	381	278	.761	1.115	1.363	271	.773
380	9.116-5	-3067.1	8.0069	27.597	1.171	1.117	9.001-5	28.065	198	1.0018	-1.000	1.134	1.355	391	300	.747	1.119	1.360	287	.770
400	8.659-5	-3043.5	8.0674	27.679	1.190	1.123	8.561-5	28.100	207	1.0035	-1.000	1.151	1.349	400	327	.727	1.124	1.357	303	.767
420	8.245-5	-3019.4	8.1260	27.760	1.215	1.128	8.163-5	28.132	215	1.0063	-1.000	1.175	1.341	408	361	.702	1.129	1.354	318	.764
440	7.867-5	-2994.8	8.1834	27.838	1.251	1.135	7.799-5	28.160	224	1.0107	-1.000	1.210	1.331	416	404	.671	1.135	1.352	334	.762
460	7.520-5	-2969.3	8.2399	27.909	1.298	1.141	7.466-5	28.181	232	1.0172	-1.001	1.257	1.320	423	460	.635	1.141	1.349	349	.760
480	7.200-5	-2942.7	8.2965	27.971	1.361	1.148	7.158-5	28.193	241	1.0265	-1.001	1.319	1.306	430	531	.599	1.148	1.346	365	.757
500	6.903-5	-2914.7	8.3536	28.021	1.442	1.155	6.871-5	28.192	249	1.0390	-1.002	1.400	1.291	436	616	.565	1.155	1.343	381	.754
520	6.625-5	-2884.9	8.4121	28.055	1.543	1.163	6.603-5	28.176	257	1.0551	-1.003	1.499	1.276	443	717	.538	1.163	1.340	399	.749
540	6.363-5	-2852.9	8.4725	28.070	1.664	1.172	6.351-5	28.142	265	1.0750	-1.004	1.617	1.262	449	827	.518	1.172	1.337	418	.743
560	6.116-5	-2818.2	8.5356	28.065	1.805	1.181	6.113-5	28.088	273	1.0982	-1.005	1.754	1.248	455	943	.508	1.181	1.335	438	.736
580	5.882-5	-2781.2	8.6005	27.995	1.898	1.190	5.882-5	27.995	281	1.1228	-1.006	1.898	1.236	461	1048	.508	1.190	1.333	459	.728
600	5.660-5	-2741.8	8.6672	27.868	2.034	1.200	5.660-5	27.868	288	1.1458	-1.008	2.034	1.227	469	1125	.521	1.200	1.331	480	.720
620	5.450-5	-2700.0	8.7358	27.726	2.146	1.210	5.450-5	27.726	295	1.1635	-1.009	2.146	1.220	476	1164	.545	1.210	1.329	503	.711
640	5.251-5	-2656.4	8.8050	27.579	2.199	1.220	5.251-5	27.579	303	1.1697	-1.009	2.199	1.217	485	1149	.579	1.220	1.328	525	.703
660	5.067-5	-2612.7	8.8722	27.439	2.148	1.230	5.067-5	27.439	310	1.1563	-1.009	2.148	1.219	494	1070	.621	1.230	1.327	547	.696
680	4.897-5	-2571.3	8.9340	27.325	1.972	1.238	4.897-5	27.325	316	1.1200	-1.007	1.972	1.230	504	942	.662	1.238	1.326	567	.691
700	4.744-5	-2534.3	8.9877	27.249	1.733	1.246	4.744-5	27.249	323	1.0729	-1.004	1.733	1.248	516	815	.687	1.246	1.324	585	.688
720	4.605-5	-2501.6	9.0337	27.208	1.546	1.252	4.605-5	27.208	330	1.0358	-1.002	1.546	1.266	528	736	.693	1.252	1.323	601	.687
740	4.478-5	-2471.8	9.0745	27.190	1.448	1.258	4.478-5	27.190	336	1.0156	-1.001	1.448	1.277	538	704	.691	1.258	1.321	616	.687
760	4.359-5	-2443.3	9.1125	27.182	1.407	1.264	4.359-5	27.182	343	1.0066	-1.000	1.407	1.282	546	699	.690	1.264	1.319	630	.688
780	4.246-5	-2415.4	9.1489	27.179	1.394	1.270	4.246-5	27.179	349	1.0028	-1.000	1.394	1.283	553	706	.689	1.270	1.317	644	.689
800	4.140-5	-2387.5	9.1841	27.178	1.391	1.276	4.140-5	27.178	355	1.0012	-1.000	1.391	1.283	560	718	.689	1.276	1.315	658	.689

· TABLE 27.3E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.155-3	-3621.2	5.4764	27.177	1.041	1.041	1.845-3	30.283	129	1.0000	-1.000	0.979	1.390	276	172	.735	0.979	1.390	172	.735
220	1.959-3	-3600.1	5.5768	27.177	1.067	1.062	1.677-3	30.283	140	1.0000	-1.000	0.982	1.388	290	188	.730	0.982	1.388	188	.730
240	1.795-3	-3578.3	5.6716	27.177	1.126	1.085	1.538-3	30.280	151	1.0000	-1.000	0.985	1.387	302	204	.727	0.985	1.387	204	.727
260	1.654-3	-3554.0	5.7689	27.177	1.362	1.107	1.418-3	30.259	161	1.0000	-1.000	0.989	1.385	315	220	.725	0.989	1.385	220	.725
280	1.524-3	-3478.6	6.0457	27.177	2.239	1.373	1.313-3	30.163	170	1.0000	-1.000	0.996	1.382	327	234	.725	0.996	1.382	234	.725
298	1.400-3	-3425.8	6.2279	27.179	3.830	1.347	1.222-3	29.901	177	1.0000	-1.000	1.011	1.379	338	244	.731	1.011	1.379	244	.731
300	1.386-3	-3418.5	6.2524	27.180	4.095	1.343	1.213-3	29.857	177	1.0000	-1.000	1.013	1.379	339	245	.732	1.013	1.379	245	.732
320	1.205-3	-3291.5	6.6603	27.226	9.680	1.251	1.105-3	29.015	179	1.0000	-1.000	1.056	1.373	355	251	.752	1.055	1.373	251	.752
340	1.019-3	-3113.4	7.2046	27.443	1.143	1.106	1.004-3	27.998	179	1.0001	-1.000	1.112	1.365	371	257	.773	1.111	1.365	256	.775
360	9.624-4	-3090.5	7.2702	27.518	1.152	1.111	9.489-4	28.032	188	1.0003	-1.000	1.117	1.362	381	273	.769	1.115	1.363	271	.773
380	9.117-4	-3067.3	7.3327	27.598	1.161	1.117	9.001-4	28.067	198	1.0006	-1.000	1.124	1.358	391	291	.763	1.119	1.360	287	.770
400	8.661-4	-3044.0	7.3924	27.681	1.170	1.122	8.562-4	28.104	207	1.0011	-1.000	1.132	1.355	400	310	.754	1.124	1.357	303	.767
420	8.248-4	-3020.5	7.4498	27.765	1.182	1.128	8.165-4	28.140	215	1.0020	-1.000	1.144	1.350	409	332	.743	1.129	1.354	318	.765
440	7.872-4	-2996.7	7.5051	27.848	1.197	1.134	7.803-4	28.174	224	1.0034	-1.000	1.159	1.345	418	356	.729	1.135	1.352	333	.764
460	7.528-4	-2972.6	7.5587	27.927	1.215	1.140	7.472-4	28.206	232	1.0056	-1.000	1.178	1.338	426	385	.712	1.140	1.349	348	.762
480	7.212-4	-2948.1	7.6109	28.002	1.240	1.147	7.168-4	28.234	241	1.0087	-1.000	1.203	1.331	434	419	.690	1.147	1.346	362	.761
500	6.921-4	-2923.0	7.6621	28.071	1.271	1.154	6.887-4	28.256	249	1.0131	-1.001	1.235	1.323	441	461	.666	1.153	1.343	378	.760
520	6.650-4	-2897.2	7.7127	28.133	1.310	1.161	6.626-4	28.272	257	1.0189	-1.001	1.275	1.313	448	512	.640	1.160	1.340	393	.757
540	6.398-4	-2870.5	7.7630	28.184	1.358	1.168	6.382-4	28.280	265	1.0267	-1.001	1.325	1.303	455	572	.613	1.167	1.337	410	.754
560	6.163-4	-2842.8	7.8135	28.225	1.418	1.175	6.154-4	28.279	272	1.0365	-1.002	1.386	1.292	461	642	.588	1.175	1.334	427	.751
580	5.941-4	-2813.7	7.8645	28.254	1.491	1.183	5.939-4	28.267	280	1.0486	-1.003	1.458	1.281	467	721	.567	1.183	1.331	444	.747
600	5.732-4	-2783.5	7.9157	28.223	1.542	1.192	5.732-4	28.223	288	1.0629	-1.003	1.542	1.270	474	806	.551	1.192	1.328	462	.742
620	5.535-4	-2751.7	7.9678	28.157	1.638	1.200	5.535-4	28.157	295	1.0794	-1.004	1.638	1.259	480	893	.541	1.200	1.326	480	.737
640	5.347-4	-2717.9	8.0214	28.078	1.743	1.209	5.347-4	28.078	302	1.0976	-1.005	1.743	1.249	486	981	.537	1.209	1.324	499	.732
660	5.167-4	-2682.0	8.0767	27.986	1.856	1.218	5.167-4	27.986	309	1.1170	-1.007	1.856	1.239	493	1063	.540	1.218	1.323	519	.726
680	4.997-4	-2643.7	8.1339	27.880	1.971	1.227	4.997-4	27.880	316	1.1362	-1.008	1.971	1.231	500	1133	.550	1.227	1.321	539	.720
700	4.833-4	-2603.2	8.1925	27.763	2.074	1.236	4.833-4	27.763	323	1.1527	-1.009	2.074	1.224	507	1181	.567	1.236	1.320	560	.713
720	4.678-4	-2560.9	8.2521	27.640	2.146	1.245	4.678-4	27.640	330	1.1627	-1.010	2.146	1.219	514	1196	.592	1.245	1.319	580	.707
740	4.532-4	-2517.8	8.3112	27.517	2.158	1.253	4.532-4	27.517	336	1.1611	-1.009	2.158	1.218	522	1167	.622	1.253	1.318	600	.702
760	4.394-4	-2475.2	8.3680	27.404	2.083	1.261	4.394-4	27.404	343	1.1430	-1.008	2.083	1.222	531	1091	.654	1.261	1.317	620	.697
780	4.267-4	-2435.0	8.4201	27.314	1.924	1.268	4.267-4	27.314	349	1.1095	-1.007	1.924	1.232	541	986	.681	1.268	1.316	638	.694
800	4.151-4	-2398.4	8.4665	27.251	1.737	1.275	4.151-4	27.251	355	1.0710	-1.004	1.737	1.246	551	888	.695	1.275	1.315	654	.692

TABLE 27.4E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.149-2	-3621.2	4.9351	27.177	1.041	1.041	1.845-2	30.283	129	1.0000	-1.000	0.979	1.390	276	172	.735	0.979	1.390	172	.735
220	1.954-2	-3600.1	5.0353	27.177	1.063	1.062	1.677-2	30.283	140	1.0000	-1.000	0.982	1.388	290	188	.730	0.982	1.388	188	.730
240	1.791-2	-3578.6	5.1289	27.177	1.089	1.085	1.538-2	30.283	151	1.0000	-1.000	0.985	1.387	302	204	.727	0.985	1.387	204	.727
260	1.654-2	-3556.5	5.2175	27.177	1.133	1.108	1.419-2	30.281	161	1.0000	-1.000	0.988	1.385	314	220	.724	0.988	1.385	220	.724
280	1.535-2	-3489.9	5.4622	27.177	1.468	1.383	1.318-2	30.271	171	1.0000	-1.000	0.992	1.383	326	235	.723	0.992	1.383	235	.723
298	1.438-2	-3462.1	5.5583	27.177	1.614	1.382	1.236-2	30.245	180	1.0000	-1.000	0.996	1.381	336	248	.723	0.996	1.381	248	.723
300	1.429-2	-3459.1	5.5684	27.177	1.637	1.382	1.228-2	30.240	181	1.0000	-1.000	0.997	1.381	337	249	.723	0.997	1.381	249	.723
320	1.331-2	-3422.9	5.6850	27.177	2.031	1.377	1.148-2	30.156	189	1.0000	-1.000	1.004	1.378	349	262	.725	1.004	1.378	262	.725
340	1.232-2	-3375.0	5.8301	27.180	2.864	1.363	1.074-2	29.957	197	1.0000	-1.000	1.017	1.375	360	274	.731	1.017	1.375	274	.731
360	1.122-2	-3302.5	6.0368	27.205	4.604	1.324	1.000-2	29.541	202	1.0000	-1.000	1.040	1.371	373	284	.740	1.040	1.371	284	.741
380	9.843-3	-3175.8	6.3784	27.355	8.715	1.228	9.222-3	28.755	204	1.0001	-1.000	1.084	1.364	387	292	.755	1.083	1.364	292	.757
400	8.661-3	-3044.2	6.7186	27.682	1.164	1.122	8.563-3	28.105	207	1.0003	-1.000	1.127	1.356	401	305	.763	1.124	1.357	303	.767
420	8.249-3	-3020.9	6.7755	27.767	1.172	1.128	8.166-3	28.142	215	1.0006	-1.000	1.134	1.353	410	322	.758	1.129	1.354	318	.766
440	7.873-3	-2997.4	6.8302	27.851	1.179	1.134	7.805-3	28.179	224	1.0011	-1.000	1.142	1.349	419	340	.753	1.134	1.352	332	.764
460	7.531-3	-2973.7	6.8828	27.933	1.189	1.140	7.475-3	28.214	232	1.0017	-1.000	1.152	1.345	427	359	.746	1.140	1.349	347	.763
480	7.216-3	-2949.8	6.9336	28.013	1.199	1.146	7.172-3	28.247	241	1.0027	-1.000	1.164	1.341	435	380	.737	1.146	1.346	362	.762
500	6.927-3	-2925.7	6.9829	28.088	1.213	1.153	6.892-3	28.278	249	1.0042	-1.000	1.179	1.336	443	404	.726	1.153	1.342	376	.762
520	6.659-3	-2901.3	7.0307	28.159	1.229	1.160	6.634-3	28.305	257	1.0061	-1.000	1.197	1.330	451	431	.712	1.159	1.339	392	.760
540	6.410-3	-2876.5	7.0775	28.225	1.248	1.166	6.393-3	28.329	265	1.0087	-1.000	1.218	1.324	458	463	.697	1.166	1.336	407	.758
560	6.179-3	-2851.3	7.1233	28.285	1.272	1.174	6.169-3	28.348	272	1.0121	-1.001	1.243	1.318	465	498	.680	1.173	1.333	423	.756
580	5.963-3	-2825.6	7.1684	28.338	1.301	1.181	5.959-3	28.362	280	1.0164	-1.001	1.274	1.310	472	539	.661	1.181	1.330	439	.754
600	5.761-3	-2799.4	7.2127	28.362	1.309	1.188	5.761-3	28.362	287	1.0218	-1.001	1.309	1.303	479	585	.643	1.188	1.328	455	.751
620	5.570-3	-2772.8	7.2563	28.338	1.351	1.196	5.570-3	28.338	295	1.0284	-1.002	1.351	1.295	485	636	.626	1.196	1.325	471	.749
640	5.391-3	-2745.3	7.3000	28.309	1.400	1.204	5.391-3	28.309	302	1.0363	-1.002	1.400	1.287	492	693	.610	1.204	1.323	487	.746
660	5.221-3	-2716.8	7.3439	28.274	1.456	1.212	5.221-3	28.274	309	1.0458	-1.003	1.456	1.279	498	754	.596	1.212	1.320	504	.743
680	5.059-3	-2687.0	7.3883	28.231	1.520	1.220	5.059-3	28.231	316	1.0568	-1.003	1.520	1.271	504	821	.586	1.220	1.318	521	.740
700	4.906-3	-2655.9	7.4334	28.179	1.593	1.228	4.906-3	28.179	323	1.0694	-1.004	1.593	1.262	511	891	.578	1.228	1.316	539	.736
720	4.759-3	-2623.3	7.4794	28.119	1.675	1.236	4.759-3	28.119	330	1.0836	-1.005	1.675	1.254	517	963	.574	1.236	1.314	557	.732
740	4.619-3	-2588.9	7.5265	28.049	1.764	1.244	4.619-3	28.048	336	1.0991	-1.006	1.764	1.245	523	1035	.573	1.244	1.313	575	.728
760	4.485-3	-2552.7	7.5748	27.968	1.857	1.252	4.485-3	27.968	343	1.1153	-1.007	1.857	1.238	529	1104	.577	1.252	1.311	593	.724
780	4.356-3	-2514.6	7.6242	27.879	1.950	1.260	4.356-3	27.879	350	1.1313	-1.008	1.950	1.231	535	1165	.585	1.260	1.310	612	.720
800	4.232-3	-2474.7	7.6747	27.781	2.033	1.268	4.232-3	27.781	356	1.1453	-1.009	2.033	1.226	542	1211	.597	1.268	1.309	631	.715

TABLE 27.5E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.000; F/A = 0.082073; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	1.061-1	-3621.2	4.5568	27.177	1.041	1.041	9.226-2	30.283	129	1.0000	-1.000	0.979	1.390	276	172	.735	0.979	1.390	172	.735
220	9.660-2	-3600.1	4.6570	27.177	1.062	1.062	8.387-2	30.283	140	1.0000	-1.000	0.982	1.388	290	188	.730	0.982	1.388	188	.730
240	8.865-2	-3578.7	4.7504	27.177	1.085	1.085	7.689-2	30.283	151	1.0000	-1.000	0.985	1.387	302	204	.727	0.985	1.387	204	.727
260	8.191-2	-3556.7	4.8383	27.177	1.113	1.108	7.097-2	30.283	161	1.0000	-1.000	0.988	1.385	314	220	.724	0.988	1.385	220	.724
280	7.618-2	-3490.9	5.0802	27.177	1.401	1.384	6.590-2	30.281	171	1.0000	-1.000	0.991	1.383	326	235	.722	0.991	1.383	235	.722
298	7.155-2	-3465.2	5.1690	27.177	1.431	1.385	6.187-2	30.275	180	1.0000	-1.000	0.995	1.381	336	248	.722	0.995	1.381	248	.722
300	7.111-2	-3462.6	5.1778	27.177	1.436	1.385	6.149-2	30.274	181	1.0000	-1.000	0.995	1.381	337	250	.722	0.995	1.381	250	.722
320	6.661-2	-3433.1	5.2727	27.177	1.515	1.387	5.762-2	30.258	190	1.0000	-1.000	1.000	1.379	348	264	.723	1.000	1.379	264	.723
340	6.253-2	-3401.4	5.3688	27.177	1.672	1.389	5.416-2	30.218	199	1.0000	-1.000	1.006	1.377	359	277	.725	1.006	1.377	277	.725
360	5.869-2	-3365.4	5.4716	27.178	1.952	1.388	5.101-2	30.135	208	1.0000	-1.000	1.014	1.374	369	289	.727	1.014	1.374	289	.727
380	5.491-2	-3322.1	5.5887	27.182	2.427	1.379	4.807-2	29.978	215	1.0000	-1.000	1.025	1.371	380	301	.731	1.025	1.371	301	.731
400	5.098-2	-3266.2	5.7318	27.204	3.231	1.358	4.525-2	29.706	221	1.0000	-1.000	1.042	1.367	391	313	.736	1.042	1.367	313	.737
420	4.663-2	-3188.6	5.9208	27.286	4.680	1.312	4.246-2	29.269	226	1.0001	-1.000	1.069	1.362	403	324	.744	1.068	1.362	324	.745
440	4.145-2	-3069.4	6.1977	27.576	7.623	1.216	3.962-2	28.607	228	1.0003	-1.000	1.112	1.354	416	337	.753	1.109	1.355	334	.757
460	3.765-2	-2973.9	6.4115	27.935	1.182	1.140	3.738-2	28.216	232	1.0007	-1.000	1.146	1.347	427	352	.755	1.140	1.349	347	.763
480	3.608-2	-2950.2	6.4620	28.016	1.189	1.146	3.586-2	28.251	241	1.0012	-1.000	1.155	1.343	436	370	.751	1.146	1.346	361	.763
500	3.464-2	-2926.4	6.5107	28.093	1.198	1.153	3.447-2	28.283	249	1.0018	-1.000	1.165	1.339	444	389	.745	1.152	1.342	376	.762
520	3.330-2	-2902.3	6.5579	28.167	1.207	1.159	3.318-2	28.314	257	1.0027	-1.000	1.176	1.335	451	409	.738	1.159	1.339	391	.761
540	3.207-2	-2878.0	6.6036	28.236	1.219	1.166	3.198-2	28.342	265	1.0039	-1.000	1.189	1.330	459	432	.729	1.166	1.336	406	.759
560	3.092-2	-2853.5	6.6482	28.301	1.233	1.173	3.087-2	28.367	272	1.0054	-1.000	1.205	1.326	466	456	.719	1.173	1.333	422	.758
580	2.984-2	-2828.7	6.6917	28.362	1.249	1.180	2.982-2	28.388	280	1.0074	-1.000	1.223	1.320	474	484	.707	1.180	1.330	437	.756
600	2.884-2	-2803.7	6.7342	28.400	1.243	1.187	2.884-2	28.400	287	1.0099	-1.001	1.243	1.315	481	514	.695	1.187	1.327	453	.754
620	2.790-2	-2778.6	6.7753	28.389	1.267	1.195	2.790-2	28.389	295	1.0130	-1.001	1.267	1.310	488	547	.682	1.195	1.325	468	.752
640	2.702-2	-2753.0	6.8159	28.376	1.294	1.202	2.702-2	28.376	302	1.0168	-1.001	1.294	1.304	495	584	.669	1.202	1.322	484	.750
660	2.618-2	-2726.8	6.8562	28.359	1.325	1.210	2.618-2	28.359	309	1.0215	-1.001	1.325	1.298	501	624	.656	1.210	1.320	500	.748
680	2.539-2	-2700.0	6.8962	28.339	1.360	1.218	2.539-2	28.339	316	1.0270	-1.002	1.360	1.292	508	668	.644	1.218	1.317	516	.746
700	2.465-2	-2672.4	6.9363	28.314	1.401	1.225	2.465-2	28.314	323	1.0336	-1.002	1.401	1.285	514	716	.632	1.225	1.315	532	.744
720	2.394-2	-2643.9	6.9764	28.284	1.448	1.233	2.394-2	28.284	330	1.0414	-1.003	1.448	1.278	520	768	.622	1.233	1.313	548	.741
740	2.326-2	-2614.4	7.0167	28.249	1.501	1.241	2.326-2	28.249	336	1.0503	-1.003	1.501	1.271	526	824	.613	1.241	1.311	565	.739
760	2.262-2	-2583.9	7.0575	28.207	1.560	1.248	2.262-2	28.207	343	1.0606	-1.004	1.560	1.264	532	883	.606	1.248	1.309	582	.736
780	2.200-2	-2552.0	7.0989	28.159	1.625	1.256	2.200-2	28.159	350	1.0721	-1.004	1.625	1.257	538	944	.602	1.256	1.307	599	.733
800	2.141-2	-2518.8	7.1409	28.103	1.697	1.263	2.141-2	28.103	356	1.0847	-1.005	1.697	1.250	544	1007	.600	1.263	1.306	616	.730

TABLE 28A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.016261; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.4350;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03251; H2O= .07905; N2= .73231; O2= .14734; AR= .00878

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
200	1.7326-3	8.6632-2	-1224.4	7.9942	7.3209	6.6477	5.9744	5.5038	1.0419	1.3901	285.1	124	169	.7628	200
210	1.6501-3	8.2507-2	-1214.0	8.0451	7.3718	6.6985	6.0252	5.5546	1.0416	1.3903	292.2	129	177	.7595	210
220	1.5751-3	7.8756-2	-1203.6	8.0935	7.4202	6.7470	6.0737	5.6031	1.0415	1.3904	299.1	135	186	.7565	220
230	1.5066-3	7.5332-2	-1193.1	8.1398	7.4665	6.7932	6.1200	5.6494	1.0415	1.3904	305.8	140	194	.7536	230
240	1.4439-3	7.2193-2	-1182.7	8.1841	7.5108	6.8376	6.1643	5.6937	1.0416	1.3903	312.4	146	202	.7511	240
250	1.3861-3	6.9306-2	-1172.3	8.2266	7.5534	6.8801	6.2068	5.7362	1.0418	1.3902	318.8	151	210	.7488	250
260	1.3328-3	6.6640-2	-1161.9	8.2675	7.5942	6.9210	6.2477	5.7771	1.0422	1.3900	325.1	156	218	.7468	260
270	1.2834-3	6.4172-2	-1151.5	8.3069	7.6336	6.9603	6.2870	5.8164	1.0427	1.3897	331.2	161	226	.7452	270
280	1.2376-3	6.1880-2	-1141.0	8.3448	7.6715	6.9982	6.3250	5.8544	1.0433	1.3894	337.3	166	233	.7439	280
290	1.1949-3	5.9746-2	-1130.6	8.3814	7.7081	7.0349	6.3616	5.8910	1.0440	1.3890	343.2	171	241	.7428	290
298	1.1623-3	5.8113-2	-1122.1	8.4104	7.7371	7.0638	6.3905	5.9199	1.0446	1.3887	347.9	175	247	.7422	298
300	1.1551-3	5.7755-2	-1120.2	8.4168	7.7435	7.0703	6.3970	5.9264	1.0448	1.3886	349.0	176	248	.7420	300
310	1.1178-3	5.5892-2	-1109.7	8.4511	7.7778	7.1045	6.4313	5.9607	1.0457	1.3881	354.7	181	255	.7418	310
320	1.0829-3	5.4145-2	-1099.2	8.4843	7.8110	7.1378	6.4645	5.9939	1.0467	1.3876	360.3	186	262	.7417	320
330	1.0501-3	5.2504-2	-1088.8	8.5165	7.8433	7.1700	6.4967	6.0261	1.0479	1.3871	365.8	190	269	.7418	330
340	1.0192-3	5.0960-2	-1078.3	8.5478	7.8746	7.2013	6.5280	6.0574	1.0491	1.3864	371.3	195	276	.7418	340
350	9.9008-4	4.9504-2	-1067.8	8.5783	7.9050	7.2317	6.5584	6.0878	1.0504	1.3858	376.6	199	282	.7418	350
360	9.6258-4	4.8129-2	-1057.3	8.6079	7.9346	7.2613	6.5880	6.1174	1.0517	1.3851	381.8	204	289	.7414	360
370	9.3656-4	4.6828-2	-1046.8	8.6367	7.9634	7.2902	6.6169	6.1463	1.0532	1.3843	387.0	208	296	.7409	370
380	9.1192-4	4.5596-2	-1036.2	8.6648	7.9915	7.3183	6.6450	6.1744	1.0548	1.3836	392.1	213	303	.7404	380
390	8.8853-4	4.4427-2	-1025.7	8.6922	8.0190	7.3457	6.6724	6.2018	1.0564	1.3827	397.1	217	310	.7398	390
400	8.6632-4	4.3316-2	-1015.1	8.7190	8.0457	7.3724	6.6992	6.2286	1.0581	1.3819	402.0	221	317	.7392	400
410	8.4519-4	4.2260-2	-1004.5	8.7451	8.0719	7.3986	6.7253	6.2547	1.0598	1.3810	406.9	226	324	.7389	410
420	8.2507-4	4.1253-2	-993.9	8.7707	8.0974	7.4242	6.7509	6.2803	1.0617	1.3801	411.7	230	330	.7386	420
430	8.0588-4	4.0294-2	-983.3	8.7957	8.1224	7.4492	6.7759	6.3053	1.0636	1.3792	416.4	234	337	.7384	430
440	7.8756-4	3.9378-2	-972.6	8.8202	8.1469	7.4736	6.8004	6.3298	1.0655	1.3782	421.1	238	344	.7382	440
450	7.7006-4	3.8503-2	-962.0	8.8442	8.1709	7.4976	6.8243	6.3537	1.0676	1.3772	425.7	242	350	.7380	450
460	7.5332-4	3.7666-2	-951.3	8.8676	8.1944	7.5211	6.8478	6.3772	1.0697	1.3762	430.2	246	357	.7379	460
470	7.3729-4	3.6865-2	-940.6	8.8907	8.2174	7.5441	6.8708	6.4002	1.0718	1.3752	434.7	250	363	.7379	470
480	7.2193-4	3.6097-2	-929.8	8.9133	8.2400	7.5667	6.8934	6.4228	1.0740	1.3741	439.2	254	370	.7379	480
490	7.0720-4	3.5360-2	-919.1	8.9354	8.2621	7.5889	6.9156	6.4450	1.0762	1.3731	443.5	258	376	.7379	490
500	6.9306-4	3.4653-2	-908.3	8.9572	8.2839	7.6106	6.9374	6.4668	1.0785	1.3720	447.9	262	383	.7379	500
510	6.7947-4	3.3973-2	-897.5	8.9786	8.3053	7.6320	6.9587	6.4881	1.0808	1.3709	452.1	266	389	.7377	510
520	6.6640-4	3.3320-2	-886.7	8.9996	8.3263	7.6530	6.9798	6.5092	1.0832	1.3698	456.4	269	396	.7376	520
530	6.5383-4	3.2691-2	-875.8	9.0202	8.3470	7.6737	7.0004	6.5298	1.0856	1.3686	460.5	273	402	.7375	530
540	6.4172-4	3.2086-2	-865.0	9.0406	8.3673	7.6940	7.0207	6.5501	1.0880	1.3675	464.7	277	409	.7373	540
550	6.3005-4	3.1503-2	-854.1	9.0605	8.3873	7.7140	7.0407	6.5701	1.0905	1.3664	468.8	281	415	.7371	550
560	6.1880-4	3.0940-2	-843.2	9.0802	8.4069	7.7337	7.0604	6.5898	1.0930	1.3652	472.8	284	422	.7369	560
570	6.0794-4	3.0397-2	-832.2	9.0996	8.4263	7.7530	7.0797	6.6091	1.0955	1.3641	476.8	288	428	.7367	570
580	5.9746-4	2.9873-2	-821.3	9.1187	8.4454	7.7721	7.0988	6.6282	1.0981	1.3629	480.8	292	435	.7365	580
590	5.8734-4	2.9367-2	-810.3	9.1374	8.4642	7.7909	7.1176	6.6470	1.1007	1.3617	484.7	295	441	.7363	590

TABLE 28A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.016261; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.4350;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03251; H2O= .07905; N2= .73231; O2= .14734; AR= .00878

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.7755-4	2.8877-2	-799.2	9.1560	8.4827	7.8094	7.1361	6.6655	1.1033	1.3606	488.6	299	448	.7361	600
610	5.6808-4	2.8404-2	-788.2	9.1742	8.5009	7.8277	7.1544	6.6838	1.1059	1.3594	492.4	302	454	.7358	610
620	5.5892-4	2.7946-2	-777.1	9.1922	8.5190	7.8457	7.1724	6.7018	1.1086	1.3583	496.2	306	461	.7355	620
630	5.5004-4	2.7502-2	-766.0	9.2100	8.5367	7.8634	7.1902	6.7196	1.1112	1.3571	500.0	309	468	.7352	630
640	5.4145-4	2.7073-2	-754.9	9.2275	8.5542	7.8810	7.2077	6.7371	1.1139	1.3559	503.7	313	474	.7349	640
650	5.3312-4	2.6656-2	-743.7	9.2448	8.5715	7.8982	7.2250	6.7544	1.1166	1.3548	507.4	316	481	.7346	650
660	5.2504-4	2.6252-2	-732.6	9.2619	8.5886	7.9153	7.2420	6.7714	1.1193	1.3536	511.1	320	487	.7343	660
670	5.1721-4	2.5860-2	-721.4	9.2787	8.6054	7.9322	7.2589	6.7883	1.1220	1.3525	514.7	323	494	.7340	670
680	5.0960-4	2.5480-2	-710.1	9.2954	8.6221	7.9488	7.2755	6.8049	1.1247	1.3513	518.3	327	501	.7337	680
690	5.0221-4	2.5111-2	-698.9	9.3118	8.6385	7.9653	7.2920	6.8214	1.1275	1.3502	521.9	330	507	.7334	690
700	4.9504-4	2.4752-2	-687.6	9.3280	8.6548	7.9815	7.3082	6.8376	1.1302	1.3490	525.5	333	514	.7330	700
710	4.8807-4	2.4403-2	-676.3	9.3441	8.6708	7.9975	7.3243	6.8537	1.1329	1.3479	529.0	337	521	.7327	710
720	4.8129-4	2.4064-2	-664.9	9.3600	8.6867	8.0134	7.3401	6.8695	1.1356	1.3468	532.5	340	527	.7324	720
730	4.7470-4	2.3735-2	-653.6	9.3756	8.7024	8.0291	7.3558	6.8852	1.1383	1.3457	535.9	343	534	.7321	730
740	4.6828-4	2.3414-2	-642.2	9.3912	8.7179	8.0446	7.3713	6.9007	1.1411	1.3445	539.4	347	541	.7318	740
750	4.6204-4	2.3102-2	-630.7	9.4065	8.7332	8.0599	7.3867	6.9161	1.1438	1.3434	542.8	350	547	.7315	750
760	4.5596-4	2.2798-2	-619.3	9.4217	8.7484	8.0751	7.4018	6.9312	1.1465	1.3424	546.2	353	554	.7312	760
770	4.5004-4	2.2502-2	-607.8	9.4367	8.7634	8.0901	7.4168	6.9462	1.1492	1.3413	549.5	356	560	.7310	770
780	4.4427-4	2.2213-2	-596.3	9.4515	8.7782	8.1050	7.4317	6.9611	1.1518	1.3402	552.9	360	567	.7307	780
790	4.3864-4	2.1932-2	-584.8	9.4662	8.7929	8.1196	7.4464	6.9758	1.1545	1.3392	556.2	363	574	.7304	790
800	4.3316-4	2.1658-2	-573.2	9.4807	8.8075	8.1342	7.4609	6.9903	1.1572	1.3381	559.5	366	580	.7301	800
810	4.2781-4	2.1391-2	-561.6	9.4951	8.8218	8.1486	7.4753	7.0047	1.1598	1.3371	562.7	369	587	.7299	810
820	4.2260-4	2.1130-2	-550.0	9.5094	8.8361	8.1628	7.4895	7.0189	1.1625	1.3361	566.0	372	593	.7297	820
830	4.1750-4	2.0875-2	-538.4	9.5235	8.8502	8.1769	7.5036	7.0330	1.1651	1.3351	569.2	375	600	.7295	830
840	4.1253-4	2.0627-2	-526.7	9.5374	8.8642	8.1909	7.5176	7.0470	1.1677	1.3341	572.4	379	606	.7292	840
850	4.0768-4	2.0384-2	-515.0	9.5513	8.8780	8.2047	7.5315	7.0609	1.1703	1.3331	575.6	382	613	.7290	850
860	4.0294-4	2.0147-2	-503.3	9.5650	8.8917	8.2184	7.5452	7.0746	1.1728	1.3321	578.8	385	619	.7288	860
870	3.9831-4	1.9915-2	-491.6	9.5786	8.9053	8.2320	7.5587	7.0881	1.1754	1.3312	581.9	388	626	.7286	870
880	3.9378-4	1.9689-2	-479.8	9.5920	8.9187	8.2455	7.5722	7.1016	1.1779	1.3302	585.0	391	632	.7284	880
890	3.8936-4	1.9468-2	-468.0	9.6053	8.9321	8.2588	7.5855	7.1149	1.1804	1.3293	588.2	394	638	.7283	890
900	3.8503-4	1.9252-2	-456.2	9.6185	8.9453	8.2720	7.5987	7.1281	1.1828	1.3284	591.3	397	645	.7281	900
910	3.8080-4	1.9040-2	-444.3	9.6316	8.9583	8.2851	7.6118	7.1412	1.1853	1.3275	594.3	400	651	.7279	910
920	3.7666-4	1.8833-2	-432.5	9.6446	8.9713	8.2980	7.6248	7.1542	1.1877	1.3266	597.4	403	658	.7277	920
930	3.7261-4	1.8631-2	-420.6	9.6574	8.9842	8.3109	7.6376	7.1670	1.1901	1.3257	600.4	406	664	.7276	930
940	3.6865-4	1.8432-2	-408.7	9.6702	8.9969	8.3236	7.6503	7.1797	1.1924	1.3249	603.4	409	670	.7274	940
950	3.6477-4	1.8238-2	-396.7	9.6828	9.0095	8.3363	7.6630	7.1924	1.1948	1.3240	606.5	412	677	.7272	950
960	3.6097-4	1.8048-2	-384.8	9.6953	9.0221	8.3488	7.6755	7.2049	1.1971	1.3232	609.4	415	683	.7271	960
970	3.5725-4	1.7862-2	-372.8	9.7077	9.0345	8.3612	7.6879	7.2173	1.1994	1.3224	612.4	418	689	.7269	970
980	3.5360-4	1.7680-2	-360.8	9.7201	9.0468	8.3735	7.7002	7.2296	1.2016	1.3216	615.4	421	695	.7268	980
990	3.5003-4	1.7501-2	-348.8	9.7323	9.0590	8.3857	7.7124	7.2418	1.2038	1.3208	618.3	424	702	.7266	990

TABLE 28A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.016261; EQUIV. RATIO= 0.250; CHEM. EQUIV. RATIO= 0.3284; MW = 28.4350;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .03251; H2O= .07905; N2= .73231; O2= .14734; AR= .00878

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	MICRO POISE	MICRO W/CM K		K
1000	3.4653-4	1.7326-2	-336.7	9.7444	9.0711	8.3978	7.7246	7.2540	1.2060	1.3200	621.3	426	708	.7265	1000
1050	3.3003-4	1.6501-2	-276.2	9.8035	9.1302	8.4569	7.7836	7.3130	1.2163	1.3165	635.8	441	738	.7261	1050
1100	3.1503-4	1.5751-2	-215.1	9.8603	9.1870	8.5137	7.8405	7.3699	1.2261	1.3132	649.9	454	768	.7258	1100
1150	3.0133-4	1.5066-2	-153.6	9.9150	9.2417	8.5684	7.8952	7.4246	1.2354	1.3101	663.7	468	797	.7256	1150
1200	2.8877-4	1.4439-2	-91.6	9.9678	9.2945	8.6212	7.9479	7.4773	1.2443	1.3072	677.2	481	826	.7254	1200
1250	2.7722-4	1.3861-2	-29.1	10.0187	9.3455	8.6722	7.9989	7.5283	1.2529	1.3044	690.5	494	854	.7253	1250
1300	2.6656-4	1.3328-2	33.7	10.0680	9.3948	8.7215	8.0482	7.5776	1.2610	1.3019	703.5	507	882	.7252	1300
1350	2.5669-4	1.2834-2	97.0	10.1158	9.4425	8.7692	8.0959	7.6253	1.2687	1.2995	716.2	520	910	.7250	1350
1400	2.4752-4	1.2376-2	160.6	10.1620	9.4888	8.8155	8.1422	7.6716	1.2761	1.2973	728.7	533	938	.7249	1400
1450	2.3898-4	1.1949-2	224.6	10.2069	9.5337	8.8604	8.1871	7.7165	1.2831	1.2952	741.0	545	965	.7247	1450
1500	2.3102-4	1.1551-2	288.9	10.2506	9.5773	8.9040	8.2307	7.7601	1.2898	1.2932	753.1	557	992	.7245	1500
1550	2.2357-4	1.1178-2	353.5	10.2929	9.6197	8.9464	8.2731	7.8025	1.2961	1.2913	765.0	569	1019	.7240	1550
1600	2.1658-4	1.0829-2	418.5	10.3342	9.6609	8.9876	8.3144	7.8438	1.3022	1.2896	776.7	581	1046	.7235	1600
1650	2.1002-4	1.0501-2	483.7	10.3744	9.7011	9.0278	8.3545	7.8839	1.3079	1.2879	788.3	593	1072	.7230	1650
1700	2.0384-4	1.0192-2	549.3	10.4135	9.7402	9.0669	8.3936	7.9230	1.3134	1.2864	799.6	604	1099	.7225	1700
1750	1.9802-4	9.9008-3	615.1	10.4516	9.7783	9.1051	8.4318	7.9612	1.3186	1.2849	810.9	616	1125	.7220	1750
1800	1.9252-4	9.6258-3	681.1	10.4888	9.8156	9.1423	8.4690	7.9984	1.3235	1.2836	821.9	627	1150	.7215	1800
1850	1.8731-4	9.3656-3	747.4	10.5252	9.8519	9.1786	8.5053	8.0347	1.3282	1.2823	832.9	638	1176	.7210	1850
1900	1.8238-4	9.1192-3	813.9	10.5606	9.8874	9.2141	8.5408	8.0702	1.3327	1.2811	843.6	649	1201	.7204	1900
1950	1.7771-4	8.8853-3	880.7	10.5953	9.9220	9.2488	8.5755	8.1049	1.3369	1.2799	854.3	660	1226	.7199	1950
2000	1.7326-4	8.6632-3	947.6	10.6292	9.9559	9.2827	8.6094	8.1388	1.3410	1.2789	864.8	671	1251	.7194	2000
2050	1.6904-4	8.4519-3	1014.8	10.6624	9.9891	9.3158	8.6426	8.1720	1.3448	1.2778	875.2	682	1276	.7191	2050
2100	1.6501-4	8.2507-3	1082.1	10.6948	10.0216	9.3483	8.6750	8.2044	1.3485	1.2769	885.5	693	1300	.7189	2100
2150	1.6118-4	8.0588-3	1149.6	10.7266	10.0533	9.3801	8.7068	8.2362	1.3519	1.2760	895.6	703	1323	.7186	2150
2200	1.5751-4	7.8756-3	1217.3	10.7577	10.0844	9.4112	8.7379	8.2673	1.3553	1.2751	905.7	714	1347	.7183	2200
2250	1.5401-4	7.7006-3	1285.1	10.7882	10.1149	9.4417	8.7684	8.2978	1.3584	1.2743	915.6	724	1370	.7181	2250
2300	1.5066-4	7.5332-3	1353.1	10.8181	10.1448	9.4716	8.7983	8.3277	1.3614	1.2735	925.5	735	1393	.7178	2300
2350	1.4746-4	7.3729-3	1421.3	10.8474	10.1741	9.5009	8.8276	8.3570	1.3643	1.2728	935.2	745	1416	.7176	2350
2400	1.4439-4	7.2193-3	1489.6	10.8762	10.2029	9.5296	8.8563	8.3857	1.3670	1.2721	944.8	755	1439	.7173	2400
2450	1.4144-4	7.0720-3	1558.0	10.9044	10.2311	9.5578	8.8845	8.4139	1.3696	1.2714	954.4	765	1461	.7171	2450
2500	1.3861-4	6.9306-3	1626.5	10.9321	10.2588	9.5855	8.9122	8.4416	1.3721	1.2708	963.8	775	1484	.7169	2500
2550	1.3589-4	6.7947-3	1695.2	10.9593	10.2860	9.6127	8.9394	8.4688	1.3745	1.2702	973.2	785	1506	.7164	2550
2600	1.3328-4	6.6640-3	1764.0	10.9860	10.3127	9.6394	8.9662	8.4956	1.3768	1.2696	982.5	795	1529	.7160	2600
2650	1.3077-4	6.5383-3	1832.9	11.0122	10.3390	9.6657	8.9924	8.5218	1.3790	1.2691	991.7	805	1551	.7156	2650
2700	1.2834-4	6.4172-3	1901.9	11.0380	10.3647	9.6915	9.0182	8.5476	1.3811	1.2686	1000.8	815	1573	.7151	2700
2750	1.2601-4	6.3005-3	1971.0	11.0634	10.3901	9.7168	9.0436	8.5730	1.3831	1.2681	1009.8	824	1595	.7147	2750
2800	1.2376-4	6.1880-3	2040.2	11.0883	10.4150	9.7418	9.0685	8.5979	1.3851	1.2676	1018.7	834	1617	.7143	2800
2850	1.2159-4	6.0794-3	2109.5	11.1129	10.4396	9.7663	9.0930	8.6224	1.3870	1.2671	1027.6	843	1639	.7139	2850
2900	1.1949-4	5.9746-3	2178.9	11.1370	10.4637	9.7904	9.1172	8.6466	1.3889	1.2667	1036.4	853	1660	.7134	2900
2950	1.1747-4	5.8734-3	2248.4	11.1608	10.4875	9.8142	9.1409	8.6703	1.3907	1.2662	1045.1	862	1682	.7130	2950
3000	1.1551-4	5.7755-3	2318.0	11.1841	10.5109	9.8376	9.1643	8.6937	1.3924	1.2658	1053.7	872	1703	.7126	3000

TABLE 28.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016261; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8503-6	-456.2	9.6186	28.435	397	1.0000	-1.0000	1.1832	1.3282	591.2	645	.728	1.1828	1.3284	591.3	645	.728
950	3.6477-6	-396.7	9.6829	28.435	412	1.0000	-1.0000	1.1954	1.3238	606.4	677	.727	1.1948	1.3240	606.5	677	.727
1000	3.4653-6	-336.6	9.7445	28.435	426	1.0000	-1.0000	1.2070	1.3197	621.2	708	.727	1.2060	1.3200	621.3	708	.726
1050	3.3003-6	-276.0	9.8036	28.435	441	1.0000	-1.0000	1.2179	1.3160	635.6	739	.726	1.2163	1.3165	635.8	738	.726
1100	3.1503-6	-214.8	9.8605	28.435	454	1.0000	-1.0000	1.2284	1.3124	649.7	769	.726	1.2261	1.3132	649.9	768	.726
1150	3.0133-6	-153.2	9.9154	28.435	468	1.0000	-1.0000	1.2388	1.3090	663.4	799	.726	1.2354	1.3101	663.7	797	.726
1200	2.8877-6	-91.0	9.9683	28.435	481	1.0000	-1.0000	1.2492	1.3056	676.8	829	.725	1.2443	1.3072	677.2	826	.725
1250	2.7722-6	-28.2	10.0195	28.435	494	1.0001	-1.0000	1.2596	1.3024	689.9	859	.725	1.2529	1.3044	690.5	854	.725
1300	2.6656-6	35.0	10.0691	28.435	507	1.0001	-1.0000	1.2701	1.2991	702.7	889	.725	1.2610	1.3019	703.5	882	.725
1350	2.5668-6	98.8	10.1173	28.435	520	1.0002	-1.0000	1.2811	1.2959	715.2	919	.725	1.2687	1.2995	716.2	910	.725
1400	2.4751-6	163.1	10.1641	28.434	533	1.0003	-1.0000	1.2927	1.2926	727.4	951	.724	1.2761	1.2973	728.7	938	.725
1450	2.3898-6	228.1	10.2096	28.434	545	1.0006	-1.0000	1.3053	1.2891	739.3	983	.723	1.2831	1.2952	741.0	965	.725
1500	2.3100-6	293.7	10.2541	28.433	557	1.0009	-1.0000	1.3194	1.2854	750.9	1018	.722	1.2898	1.2932	753.1	992	.724
1550	2.2354-6	360.0	10.2976	28.432	569	1.0015	-1.0000	1.3356	1.2813	762.1	1055	.720	1.2961	1.2914	765.1	1019	.724
1600	2.1655-6	427.3	10.3403	28.430	581	1.0023	-1.0001	1.3549	1.2768	772.9	1097	.718	1.3022	1.2896	776.8	1046	.724
1650	2.0996-6	495.6	10.3824	28.428	593	1.0035	-1.0001	1.3784	1.2716	783.4	1145	.714	1.3079	1.2880	788.4	1072	.723
1700	2.0376-6	565.2	10.4240	28.424	604	1.0054	-1.0001	1.4079	1.2656	793.3	1202	.708	1.3134	1.2865	799.8	1099	.722
1750	1.9790-6	636.5	10.4653	28.419	616	1.0080	-1.0002	1.4454	1.2586	802.7	1272	.700	1.3186	1.2851	811.2	1125	.722
1800	1.9235-6	709.9	10.5066	28.411	627	1.0119	-1.0003	1.4939	1.2504	811.6	1361	.688	1.3235	1.2839	822.4	1151	.721
1850	1.8708-6	786.1	10.5484	28.400	638	1.0174	-1.0005	1.5569	1.2410	819.8	1476	.673	1.3282	1.2827	833.5	1177	.721
1900	1.8205-6	866.0	10.5910	28.384	649	1.0252	-1.0007	1.6390	1.2302	827.4	1629	.653	1.3327	1.2817	844.6	1202	.720
1950	1.7725-6	950.5	10.6349	28.361	660	1.0359	-1.0011	1.7459	1.2182	834.5	1834	.628	1.3369	1.2809	855.7	1228	.719
2000	1.7263-6	1041.1	10.6807	28.331	671	1.0506	-1.0016	1.8839	1.2054	841.1	2109	.599	1.3409	1.2802	866.8	1253	.718
2050	1.6817-6	1139.5	10.7293	28.289	682	1.0703	-1.0022	2.0605	1.1921	847.5	2476	.567	1.3447	1.2797	878.1	1278	.717
2100	1.6384-6	1247.9	10.7816	28.232	692	1.0962	-1.0032	2.2836	1.1790	853.9	2961	.534	1.3484	1.2794	889.5	1304	.716
2150	1.5961-6	1368.8	10.8384	28.158	702	1.1297	-1.0044	2.5610	1.1665	860.6	3592	.501	1.3518	1.2795	901.3	1329	.714
2200	1.5544-6	1505.0	10.9011	28.061	712	1.1721	-1.0060	2.9000	1.1552	867.8	4397	.470	1.3551	1.2798	913.4	1356	.712
2250	1.5131-6	1659.9	10.9706	27.937	722	1.2243	-1.0081	3.3060	1.1453	875.7	5395	.443	1.3583	1.2806	926.0	1383	.709
2300	1.4720-6	1836.8	11.0484	27.781	732	1.2874	-1.0107	3.7820	1.1370	884.7	6597	.420	1.3614	1.2818	939.3	1412	.706
2350	1.4307-6	2039.2	11.1355	27.588	741	1.3615	-1.0138	4.3280	1.1303	894.7	7990	.402	1.3644	1.2835	953.4	1443	.701
2400	1.3890-6	2270.7	11.2329	27.355	751	1.4463	-1.0175	4.9390	1.1251	905.9	9536	.389	1.3674	1.2858	968.5	1476	.696
2450	1.3469-6	2534.1	11.3415	27.079	760	1.5403	-1.0218	5.6045	1.1213	918.4	11165	.381	1.3705	1.2887	984.6	1513	.689
2500	1.3044-6	2831.7	11.4617	26.758	769	1.6406	-1.0265	6.3048	1.1187	932.2	12775	.379	1.3737	1.2923	1001.9	1552	.680
2550	1.2614-6	3164.6	11.5935	26.394	778	1.7425	-1.0316	7.0088	1.1172	947.3	14240	.383	1.3770	1.2966	1020.6	1597	.671
2600	1.2183-6	3531.9	11.7362	25.992	787	1.8394	-1.0366	7.6724	1.1167	963.7	15427	.391	1.3804	1.3016	1040.5	1645	.660
2650	1.1754-6	3930.2	11.8879	25.558	795	1.9230	-1.0412	8.2402	1.1170	981.3	16214	.404	1.3840	1.3073	1061.6	1696	.649
2700	1.1332-6	4353.3	12.0461	25.106	804	1.9846	-1.0450	8.6532	1.1182	999.9	16522	.421	1.3877	1.3135	1083.7	1749	.638
2750	1.0923-6	4792.1	12.2071	24.648	813	2.0173	-1.0475	8.8616	1.1203	1019.4	16333	.441	1.3914	1.3200	1106.6	1803	.628
2800	1.0532-6	5235.6	12.3669	24.199	823	2.0172	-1.0486	8.8380	1.1231	1039.5	15691	.463	1.3951	1.3268	1129.8	1857	.618
2850	1.0165-6	5672.1	12.5214	23.773	832	1.9853	-1.0480	8.5851	1.1268	1059.8	14691	.486	1.3987	1.3334	1152.9	1909	.609
2900	9.8250-7	6090.8	12.6671	23.380	842	1.9260	-1.0460	8.1334	1.1314	1080.2	13453	.509	1.4021	1.3398	1175.5	1959	.602
2950	9.5130-7	6483.0	12.8012	23.028	851	1.8464	-1.0429	7.5318	1.1370	1100.5	12096	.530	1.4052	1.3458	1197.3	2005	.596
3000	9.2293-7	6842.4	12.9220	22.720	861	1.7542	-1.0390	6.8371	1.1438	1120.6	10719	.549	1.4080	1.3512	1217.9	2049	.592

TABLE 28.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016261; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8503-5	-456.2	8.9453	28.435	397	1.0000	-1.0000	1.1832	1.3282	591.2	645	.728	1.1828	1.3284	591.3	645	.728
950	3.6477-5	-396.7	9.0096	28.435	412	1.0000	-1.0000	1.1954	1.3238	606.4	677	.727	1.1948	1.3240	606.5	677	.727
1000	3.4653-5	-336.6	9.0712	28.435	426	1.0000	-1.0000	1.2070	1.3197	621.2	708	.727	1.2060	1.3200	621.3	708	.726
1050	3.3003-5	-276.0	9.1304	28.435	441	1.0000	-1.0000	1.2178	1.3160	635.6	739	.726	1.2163	1.3165	635.8	738	.726
1100	3.1503-5	-214.9	9.1873	28.435	454	1.0000	-1.0000	1.2284	1.3124	649.7	769	.726	1.2261	1.3132	649.9	768	.726
1150	3.0133-5	-153.2	9.2421	28.435	468	1.0000	-1.0000	1.2387	1.3090	663.5	799	.726	1.2354	1.3101	663.7	797	.726
1200	2.8877-5	-91.0	9.2950	28.435	481	1.0000	-1.0000	1.2489	1.3057	676.9	829	.725	1.2443	1.3072	677.2	826	.725
1250	2.7722-5	-28.3	9.3462	28.435	494	1.0000	-1.0000	1.2590	1.3025	690.0	858	.725	1.2529	1.3044	690.5	854	.725
1300	2.6656-5	34.9	9.3958	28.435	507	1.0001	-1.0000	1.2692	1.2994	702.8	888	.725	1.2610	1.3019	703.5	882	.725
1350	2.5669-5	98.6	9.4439	28.435	520	1.0001	-1.0000	1.2795	1.2963	715.3	918	.725	1.2687	1.2995	716.2	910	.725
1400	2.4752-5	162.9	9.4906	28.435	533	1.0002	-1.0000	1.2901	1.2932	727.6	948	.725	1.2761	1.2973	728.7	938	.725
1450	2.3898-5	227.7	9.5361	28.434	545	1.0003	-1.0000	1.3012	1.2901	739.6	979	.724	1.2831	1.2952	741.0	965	.725
1500	2.3101-5	293.0	9.5804	28.434	557	1.0005	-1.0000	1.3129	1.2869	751.3	1011	.724	1.2898	1.2932	753.1	992	.724
1550	2.2355-5	359.0	9.6236	28.434	569	1.0007	-1.0000	1.3254	1.2836	762.7	1044	.723	1.2961	1.2913	765.0	1019	.724
1600	2.1656-5	425.6	9.6659	28.433	581	1.0011	-1.0000	1.3393	1.2801	773.9	1079	.721	1.3022	1.2896	776.8	1046	.724
1650	2.0999-5	492.9	9.7074	28.432	593	1.0016	-1.0000	1.3548	1.2763	784.8	1116	.719	1.3079	1.2880	788.3	1072	.723
1700	2.0380-5	561.1	9.7481	28.430	604	1.0023	-1.0001	1.3725	1.2723	795.3	1157	.717	1.3134	1.2865	799.7	1099	.722
1750	1.9796-5	630.2	9.7881	28.428	616	1.0034	-1.0001	1.3932	1.2679	805.6	1201	.714	1.3186	1.2850	811.0	1125	.722
1800	1.9244-5	700.5	9.8277	28.424	627	1.0049	-1.0001	1.4178	1.2630	815.5	1252	.710	1.3235	1.2837	822.1	1151	.721
1850	1.8721-5	772.1	9.8670	28.420	638	1.0069	-1.0002	1.4473	1.2575	825.0	1312	.704	1.3282	1.2825	833.1	1176	.721
1900	1.8225-5	845.3	9.9060	28.414	649	1.0097	-1.0003	1.4834	1.2513	834.1	1382	.697	1.3327	1.2814	844.0	1202	.720
1950	1.7752-5	920.5	9.9451	28.405	660	1.0135	-1.0004	1.5275	1.2445	842.8	1467	.688	1.3369	1.2803	854.9	1227	.720
2000	1.7301-5	998.2	9.9844	28.394	671	1.0186	-1.0006	1.5819	1.2369	851.1	1572	.676	1.3409	1.2794	865.6	1252	.719
2050	1.6870-5	1078.9	10.0243	28.378	682	1.0253	-1.0008	1.6488	1.2285	859.0	1702	.661	1.3447	1.2786	876.3	1276	.719
2100	1.6457-5	1163.4	10.0650	28.358	693	1.0341	-1.0011	1.7311	1.2195	866.5	1866	.643	1.3483	1.2779	887.0	1301	.718
2150	1.6059-5	1252.4	10.1068	28.332	703	1.0454	-1.0015	1.8318	1.2100	873.8	2072	.622	1.3517	1.2773	897.7	1325	.717
2200	1.5675-5	1346.9	10.1503	28.298	714	1.0598	-1.0020	1.9541	1.2003	880.8	2332	.598	1.3550	1.2769	908.5	1349	.717
2250	1.5303-5	1448.2	10.1958	28.254	724	1.0778	-1.0027	2.1012	1.1905	887.8	2656	.573	1.3581	1.2766	919.4	1374	.716
2300	1.4942-5	1557.5	10.2439	28.199	734	1.1002	-1.0036	2.2762	1.1809	894.9	3057	.547	1.3610	1.2766	930.4	1398	.715
2350	1.4588-5	1676.3	10.2950	28.131	744	1.1273	-1.0047	2.4817	1.1719	902.2	3548	.520	1.3637	1.2767	941.7	1423	.713
2400	1.4241-5	1806.2	10.3497	28.046	754	1.1598	-1.0061	2.7196	1.1636	909.9	4139	.495	1.3664	1.2771	953.2	1448	.711
2450	1.3899-5	1948.8	10.4085	27.943	764	1.1980	-1.0077	2.9908	1.1562	918.1	4840	.472	1.3689	1.2777	965.1	1474	.709
2500	1.3561-5	2105.8	10.4719	27.820	773	1.2421	-1.0097	3.2954	1.1497	926.9	5651	.451	1.3713	1.2787	977.4	1500	.707
2550	1.3225-5	2278.9	10.5404	27.673	783	1.2921	-1.0120	3.6321	1.1443	936.3	6571	.433	1.3737	1.2800	990.3	1529	.703
2600	1.2891-5	2469.5	10.6144	27.502	792	1.3479	-1.0147	3.9985	1.1399	946.6	7584	.418	1.3759	1.2816	1003.7	1559	.699
2650	1.2557-5	2679.2	10.6943	27.305	801	1.4089	-1.0177	4.3907	1.1364	957.6	8669	.406	1.3782	1.2836	1017.7	1590	.694
2700	1.2223-5	2908.9	10.7802	27.080	810	1.4743	-1.0210	4.8031	1.1337	969.4	9790	.398	1.3805	1.2860	1032.5	1624	.689
2750	1.1889-5	3159.7	10.8722	26.829	819	1.5428	-1.0246	5.2273	1.1318	982.1	10902	.393	1.3828	1.2888	1048.0	1661	.682
2800	1.1556-5	3431.7	10.9702	26.551	828	1.6125	-1.0285	5.6522	1.1307	995.7	11953	.392	1.3852	1.2921	1064.4	1699	.675
2850	1.1224-5	3724.7	11.0739	26.249	837	1.6809	-1.0324	6.0626	1.1302	1010.1	12887	.394	1.3877	1.2958	1081.5	1741	.667
2900	1.0895-5	4037.4	11.1827	25.925	846	1.7447	-1.0362	6.4400	1.1304	1025.3	13647	.399	1.3902	1.2999	1099.5	1785	.659
2950	1.0569-5	4367.8	11.2956	25.585	856	1.8006	-1.0398	6.7638	1.1312	1041.4	14189	.408	1.3928	1.3043	1118.2	1831	.651
3000	1.0250-5	4712.5	11.4115	25.233	865	1.8450	-1.0429	7.0129	1.1325	1058.1	14479	.419	1.3955	1.3091	1137.6	1880	.642

TABLE 28.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016261; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8503-4	-456.2	8.2720	28.435	397	1.0000	-1.0000	1.1832	1.3282	591.2	645	.728	1.1828	1.3284	591.3	645	.728
950	3.6477-4	-396.7	8.3363	28.435	412	1.0000	-1.0000	1.1954	1.3238	606.4	677	.727	1.1948	1.3240	606.5	677	.727
1000	3.4653-4	-336.6	8.3979	28.435	426	1.0000	-1.0000	1.2070	1.3197	621.2	708	.727	1.2060	1.3200	621.3	708	.726
1050	3.3003-4	-276.0	8.4571	28.435	441	1.0000	-1.0000	1.2178	1.3160	635.6	739	.726	1.2163	1.3165	635.8	738	.726
1100	3.1503-4	-214.9	8.5140	28.435	454	1.0000	-1.0000	1.2283	1.3124	649.7	769	.726	1.2261	1.3132	649.9	768	.726
1150	3.0133-4	-153.2	8.5688	28.435	468	1.0000	-1.0000	1.2386	1.3090	663.5	799	.726	1.2354	1.3101	663.7	797	.726
1200	2.8877-4	-91.0	8.6217	28.435	481	1.0000	-1.0000	1.2487	1.3058	676.9	829	.725	1.2443	1.3072	677.2	826	.725
1250	2.7722-4	-28.3	8.6729	28.435	494	1.0000	-1.0000	1.2588	1.3026	690.0	858	.725	1.2529	1.3044	690.5	854	.725
1300	2.6656-4	34.9	8.7225	28.435	507	1.0000	-1.0000	1.2687	1.2995	702.8	888	.725	1.2610	1.3019	703.5	882	.725
1350	2.5669-4	98.6	8.7705	28.435	520	1.0001	-1.0000	1.2787	1.2965	715.4	917	.725	1.2687	1.2995	716.2	910	.725
1400	2.4752-4	162.8	8.8172	28.435	533	1.0001	-1.0000	1.2888	1.2935	727.7	947	.725	1.2761	1.2973	728.7	938	.725
1450	2.3898-4	227.5	8.8626	28.435	545	1.0001	-1.0000	1.2991	1.2906	739.7	977	.725	1.2831	1.2952	741.0	965	.725
1500	2.3102-4	292.7	8.9069	28.435	557	1.0002	-1.0000	1.3097	1.2876	751.5	1008	.724	1.2898	1.2932	753.1	992	.725
1550	2.2356-4	358.4	8.9500	28.434	569	1.0004	-1.0000	1.3207	1.2846	763.0	1039	.723	1.2961	1.2913	765.0	1019	.724
1600	2.1657-4	424.8	8.9921	28.434	581	1.0005	-1.0000	1.3322	1.2816	774.3	1071	.723	1.3022	1.2896	776.8	1046	.724
1650	2.1000-4	491.7	9.0333	28.433	593	1.0008	-1.0000	1.3444	1.2785	785.4	1104	.722	1.3079	1.2880	788.3	1072	.723
1700	2.0382-4	559.2	9.0736	28.433	604	1.0011	-1.0000	1.3575	1.2753	796.2	1139	.720	1.3134	1.2864	799.7	1099	.723
1750	1.9799-4	627.4	9.1132	28.431	616	1.0016	-1.0000	1.3718	1.2719	806.8	1175	.719	1.3186	1.2850	810.9	1125	.722
1800	1.9248-4	696.4	9.1520	28.430	627	1.0022	-1.0001	1.3876	1.2684	817.1	1214	.717	1.3235	1.2836	822.0	1151	.721
1850	1.8727-4	766.2	9.1903	28.428	638	1.0030	-1.0001	1.4053	1.2647	827.2	1255	.715	1.3282	1.2824	833.0	1176	.721
1900	1.8232-4	837.0	9.2280	28.425	650	1.0042	-1.0001	1.4253	1.2608	837.1	1300	.712	1.3327	1.2812	843.8	1202	.720
1950	1.7762-4	908.8	9.2653	28.422	661	1.0056	-1.0002	1.4481	1.2565	846.6	1350	.708	1.3369	1.2801	854.5	1227	.720
2000	1.7315-4	981.9	9.3023	28.417	671	1.0075	-1.0002	1.4744	1.2519	855.9	1406	.704	1.3409	1.2791	865.2	1252	.719
2050	1.6889-4	1056.3	9.3391	28.411	682	1.0100	-1.0003	1.5050	1.2470	864.9	1470	.698	1.3447	1.2782	875.7	1276	.719
2100	1.6483-4	1132.4	9.3758	28.403	693	1.0132	-1.0004	1.5407	1.2417	873.7	1544	.692	1.3483	1.2773	886.1	1300	.719
2150	1.6094-4	1210.5	9.4125	28.393	704	1.0172	-1.0005	1.5826	1.2360	882.1	1629	.683	1.3518	1.2765	896.5	1324	.718
2200	1.5721-4	1290.8	9.4494	28.380	714	1.0223	-1.0007	1.6316	1.2299	890.3	1731	.673	1.3550	1.2758	906.8	1348	.718
2250	1.5363-4	1373.8	9.4867	28.364	724	1.0286	-1.0010	1.6890	1.2235	898.3	1850	.661	1.3581	1.2752	917.1	1372	.717
2300	1.5018-4	1459.9	9.5246	28.344	735	1.0364	-1.0013	1.7561	1.2168	906.1	1993	.647	1.3610	1.2747	927.4	1395	.717
2350	1.4686-4	1549.6	9.5631	28.319	745	1.0460	-1.0016	1.8341	1.2099	913.7	2163	.632	1.3638	1.2743	937.7	1418	.716
2400	1.4364-4	1643.5	9.6027	28.288	755	1.0575	-1.0021	1.9242	1.2029	921.2	2365	.614	1.3664	1.2740	948.0	1442	.716
2450	1.4052-4	1742.2	9.6434	28.251	765	1.0712	-1.0027	2.0277	1.1960	928.6	2604	.596	1.3689	1.2739	958.4	1465	.715
2500	1.3749-4	1846.5	9.6855	28.205	775	1.0875	-1.0034	2.1453	1.1892	936.2	2885	.576	1.3713	1.2738	968.9	1488	.714
2550	1.3454-4	1957.0	9.7293	28.152	785	1.1064	-1.0042	2.2778	1.1827	943.8	3215	.556	1.3735	1.2739	979.5	1512	.713
2600	1.3165-4	2074.5	9.7749	28.088	794	1.1282	-1.0052	2.4255	1.1767	951.6	3596	.536	1.3757	1.2742	990.3	1536	.711
2650	1.2882-4	2199.8	9.8226	28.013	804	1.1530	-1.0064	2.5883	1.1711	959.7	4032	.516	1.3777	1.2746	1001.3	1561	.710
2700	1.2604-4	2333.6	9.8726	27.926	814	1.1808	-1.0077	2.7658	1.1660	968.2	4525	.497	1.3796	1.2752	1012.5	1586	.708
2750	1.2331-4	2476.6	9.9251	27.825	823	1.2116	-1.0093	2.9572	1.1616	977.0	5076	.479	1.3815	1.2760	1024.0	1612	.705
2800	1.2061-4	2629.5	9.9802	27.711	832	1.2454	-1.0110	3.1613	1.1577	986.2	5680	.463	1.3833	1.2770	1035.8	1638	.703
2850	1.1794-4	2792.9	10.0381	27.582	842	1.2820	-1.0129	3.3767	1.1545	995.9	6334	.449	1.3850	1.2782	1047.9	1665	.700
2900	1.1530-4	2967.4	10.0987	27.438	851	1.3211	-1.0151	3.6018	1.1518	1006.1	7029	.436	1.3867	1.2796	1060.4	1694	.697
2950	1.1269-4	3153.3	10.1623	27.278	860	1.3625	-1.0174	3.8347	1.1497	1016.7	7753	.425	1.3884	1.2813	1073.3	1723	.693
3000	1.1010-4	3350.9	10.2287	27.103	869	1.4058	-1.0199	4.0728	1.1480	1027.9	8491	.417	1.3901	1.2832	1086.7	1754	.689

TABLE 28.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016261; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8503-3	-456.2	7.5987	28.435	397	1.0000	-1.0000	1.1832	1.3282	591.2	645	.728	1.1828	1.3284	591.3	645	.728
950	3.6477-3	-396.7	7.6630	28.435	412	1.0000	-1.0000	1.1954	1.3238	606.4	677	.727	1.1948	1.3240	606.5	677	.727
1000	3.4653-3	-336.6	7.7246	28.435	426	1.0000	-1.0000	1.2070	1.3197	621.2	708	.727	1.2060	1.3200	621.3	708	.726
1050	3.3003-3	-276.0	7.7838	28.435	441	1.0000	-1.0000	1.2178	1.3160	635.6	739	.726	1.2163	1.3165	635.8	738	.726
1100	3.1503-3	-214.8	7.8407	28.435	454	1.0000	-1.0000	1.2283	1.3124	649.7	769	.726	1.2261	1.3132	649.9	768	.726
1150	3.0133-3	-153.2	7.8955	28.435	468	1.0000	-1.0000	1.2386	1.3090	663.5	799	.726	1.2354	1.3101	663.7	797	.726
1200	2.8877-3	-91.0	7.9485	28.435	481	1.0000	-1.0000	1.2487	1.3058	676.9	828	.726	1.2443	1.3072	677.2	826	.725
1250	2.7722-3	-28.3	7.9996	28.435	494	1.0000	-1.0000	1.2586	1.3026	690.0	858	.725	1.2529	1.3044	690.5	854	.725
1300	2.6656-3	34.9	8.0492	28.435	507	1.0000	-1.0000	1.2685	1.2996	702.8	887	.725	1.2610	1.3019	703.5	882	.725
1350	2.5669-3	98.5	8.0972	28.435	520	1.0000	-1.0000	1.2783	1.2966	715.4	917	.725	1.2687	1.2995	716.2	910	.725
1400	2.4752-3	162.7	8.1439	28.435	533	1.0000	-1.0000	1.2882	1.2937	727.7	946	.725	1.2761	1.2973	728.7	938	.725
1450	2.3899-3	227.4	8.1893	28.435	545	1.0001	-1.0000	1.2981	1.2908	739.8	976	.725	1.2831	1.2952	741.0	965	.725
1500	2.3102-3	292.5	8.2335	28.435	557	1.0001	-1.0000	1.3081	1.2879	751.6	1006	.724	1.2898	1.2932	753.1	992	.725
1550	2.2357-3	358.2	8.2765	28.435	569	1.0002	-1.0000	1.3183	1.2851	763.2	1037	.724	1.2961	1.2913	765.0	1019	.724
1600	2.1658-3	424.3	8.3185	28.435	581	1.0003	-1.0000	1.3288	1.2823	774.6	1067	.723	1.3022	1.2896	776.7	1046	.724
1650	2.1001-3	491.1	8.3596	28.434	593	1.0004	-1.0000	1.3395	1.2795	785.7	1099	.723	1.3079	1.2879	788.3	1072	.723
1700	2.0383-3	558.3	8.3997	28.434	604	1.0005	-1.0000	1.3506	1.2767	796.6	1131	.722	1.3134	1.2864	799.7	1099	.723
1750	1.9801-3	626.1	8.4391	28.433	616	1.0008	-1.0000	1.3623	1.2738	807.4	1164	.721	1.3186	1.2850	810.9	1125	.722
1800	1.9250-3	694.5	8.4776	28.433	627	1.0010	-1.0000	1.3745	1.2709	817.9	1198	.720	1.3235	1.2836	822.0	1151	.722
1850	1.8729-3	763.6	8.5154	28.432	638	1.0014	-1.0000	1.3875	1.2680	828.2	1233	.719	1.3282	1.2823	832.9	1176	.721
1900	1.8235-3	833.3	8.5526	28.430	650	1.0019	-1.0001	1.4013	1.2649	838.4	1269	.717	1.3327	1.2811	843.7	1201	.720
1950	1.7767-3	903.7	8.5892	28.429	661	1.0025	-1.0001	1.4162	1.2618	848.3	1308	.715	1.3369	1.2800	854.4	1227	.720
2000	1.7321-3	974.9	8.6253	28.427	671	1.0033	-1.0001	1.4324	1.2586	858.0	1348	.714	1.3409	1.2790	865.0	1252	.719
2050	1.6897-3	1047.0	8.6609	28.424	682	1.0043	-1.0001	1.4501	1.2553	867.6	1391	.711	1.3447	1.2780	875.4	1276	.719
2100	1.6493-3	1120.0	8.6960	28.421	693	1.0056	-1.0002	1.4695	1.2518	876.9	1437	.709	1.3484	1.2771	885.8	1300	.719
2150	1.6107-3	1194.0	8.7309	28.416	704	1.0072	-1.0002	1.4910	1.2482	886.1	1487	.706	1.3518	1.2762	896.0	1324	.719
2200	1.5738-3	1269.1	8.7654	28.411	714	1.0091	-1.0003	1.5150	1.2444	895.1	1541	.702	1.3551	1.2755	906.2	1348	.718
2250	1.5385-3	1345.5	8.7997	28.405	725	1.0115	-1.0004	1.5417	1.2405	903.9	1602	.698	1.3582	1.2747	916.3	1371	.718
2300	1.5046-3	1423.4	8.8340	28.397	735	1.0144	-1.0005	1.5717	1.2364	912.5	1669	.692	1.3611	1.2741	926.3	1394	.718
2350	1.4721-3	1502.8	8.8681	28.387	745	1.0178	-1.0006	1.6053	1.2321	920.9	1744	.686	1.3639	1.2735	936.2	1417	.717
2400	1.4408-3	1583.9	8.9023	28.375	755	1.0220	-1.0008	1.6430	1.2277	929.2	1829	.679	1.3666	1.2729	946.1	1440	.717
2450	1.4107-3	1667.1	8.9366	28.361	766	1.0270	-1.0010	1.6853	1.2232	937.3	1924	.671	1.3691	1.2725	956.0	1463	.716
2500	1.3817-3	1752.6	8.9711	28.344	776	1.0329	-1.0012	1.7327	1.2186	945.3	2033	.661	1.3715	1.2721	965.9	1486	.716
2550	1.3536-3	1840.5	9.0059	28.323	786	1.0397	-1.0015	1.7855	1.2139	953.2	2157	.650	1.3738	1.2718	975.7	1509	.715
2600	1.3264-3	1931.2	9.0412	28.299	795	1.0477	-1.0019	1.8443	1.2092	961.1	2297	.639	1.3759	1.2715	985.5	1532	.715
2650	1.3001-3	2025.0	9.0769	28.271	805	1.0569	-1.0023	1.9093	1.2045	968.9	2456	.626	1.3780	1.2713	995.4	1554	.714
2700	1.2746-3	2122.3	9.1132	28.238	815	1.0674	-1.0028	1.9808	1.1999	976.7	2635	.613	1.3799	1.2712	1005.3	1577	.713
2750	1.2497-3	2223.2	9.1503	28.200	825	1.0794	-1.0034	2.0589	1.1954	984.5	2837	.598	1.3818	1.2712	1015.2	1600	.712
2800	1.2255-3	2328.3	9.1881	28.157	834	1.0927	-1.0040	2.1436	1.1911	992.4	3063	.584	1.3835	1.2713	1025.3	1623	.711
2850	1.2019-3	2437.7	9.2269	28.107	844	1.1075	-1.0048	2.2348	1.1871	1000.4	3315	.569	1.3852	1.2715	1035.4	1646	.710
2900	1.1788-3	2551.8	9.2666	28.051	853	1.1238	-1.0056	2.3322	1.1833	1008.5	3593	.554	1.3868	1.2718	1045.6	1670	.709
2950	1.1562-3	2671.0	9.3073	27.987	862	1.1416	-1.0066	2.4353	1.1798	1016.9	3898	.539	1.3884	1.2722	1055.9	1693	.707
3000	1.1340-3	2795.5	9.3492	27.916	872	1.1609	-1.0076	2.5437	1.1767	1025.4	4231	.524	1.3899	1.2727	1066.4	1717	.706

TABLE 28.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016261; EQUIV. RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	1.9252-2	-456.2	7.1281	28.435	397	1.0000	-1.0000	1.1832	1.3282	591.2	645 .728	1.1828	1.3284	591.2	645 .728
950	1.8238-2	-396.7	7.1924	28.435	412	1.0000	-1.0000	1.1954	1.3238	606.4	677 .727	1.1948	1.3240	606.5	677 .727
1000	1.7326-2	-336.6	7.2541	28.435	426	1.0000	-1.0000	1.2071	1.3197	621.2	708 .727	1.2060	1.3200	621.3	708 .726
1050	1.6501-2	-276.0	7.3132	28.435	441	1.0000	-1.0000	1.2178	1.3159	635.6	739 .726	1.2163	1.3165	635.8	738 .726
1100	1.5751-2	-214.8	7.3701	28.435	454	1.0000	-1.0000	1.2283	1.3124	649.7	769 .726	1.2261	1.3132	649.9	768 .726
1150	1.5067-2	-153.2	7.4249	28.435	468	1.0000	-1.0000	1.2386	1.3090	663.4	799 .726	1.2354	1.3101	663.7	797 .726
1200	1.4439-2	-91.0	7.4779	28.435	481	1.0000	-1.0000	1.2487	1.3057	676.9	828 .726	1.2443	1.3072	677.2	826 .725
1250	1.3861-2	-28.3	7.5290	28.435	494	1.0000	-1.0000	1.2586	1.3026	690.0	858 .725	1.2529	1.3044	690.5	854 .725
1300	1.3328-2	34.9	7.5786	28.435	507	1.0000	-1.0000	1.2684	1.2996	702.8	887 .725	1.2610	1.3019	703.5	882 .725
1350	1.2835-2	98.5	7.6266	28.435	520	1.0000	-1.0000	1.2782	1.2966	715.4	917 .725	1.2687	1.2995	716.2	910 .725
1400	1.2376-2	162.7	7.6733	28.435	533	1.0000	-1.0000	1.2879	1.2937	727.7	946 .725	1.2761	1.2973	728.7	938 .725
1450	1.1949-2	227.3	7.7187	28.435	545	1.0000	-1.0000	1.2977	1.2909	739.8	976 .725	1.2831	1.2951	741.0	965 .725
1500	1.1551-2	292.5	7.7628	28.435	557	1.0000	-1.0000	1.3075	1.2881	751.6	1005 .725	1.2898	1.2932	753.1	992 .725
1550	1.1178-2	358.1	7.8059	28.435	569	1.0001	-1.0000	1.3174	1.2853	763.2	1036 .724	1.2961	1.2913	765.0	1019 .724
1600	1.0829-2	424.2	7.8479	28.435	581	1.0001	-1.0000	1.3274	1.2826	774.6	1066 .723	1.3022	1.2896	776.7	1046 .724
1650	1.0501-2	490.8	7.8889	28.435	593	1.0002	-1.0000	1.3376	1.2799	785.8	1097 .723	1.3079	1.2879	788.3	1072 .723
1700	1.0192-2	558.0	7.9289	28.435	604	1.0003	-1.0000	1.3481	1.2772	796.8	1128 .722	1.3134	1.2864	799.7	1099 .723
1750	9.9006-3	625.6	7.9682	28.434	616	1.0004	-1.0000	1.3588	1.2745	807.6	1160 .721	1.3186	1.2849	810.9	1125 .722
1800	9.6255-3	693.9	8.0066	28.434	627	1.0006	-1.0000	1.3698	1.2718	818.2	1192 .721	1.3235	1.2836	821.9	1150 .722
1850	9.3651-3	762.6	8.0443	28.434	638	1.0008	-1.0000	1.3811	1.2691	828.6	1225 .720	1.3282	1.2823	832.9	1176 .721
1900	9.1184-3	832.0	8.0813	28.433	650	1.0011	-1.0000	1.3930	1.2664	838.8	1259 .719	1.3327	1.2811	843.7	1201 .720
1950	8.8843-3	901.9	8.1176	28.432	661	1.0015	-1.0001	1.4054	1.2637	848.9	1294 .718	1.3369	1.2800	854.3	1227 .720
2000	8.6619-3	972.5	8.1534	28.431	671	1.0019	-1.0001	1.4183	1.2609	858.8	1329 .716	1.3409	1.2789	864.9	1251 .719
2050	8.4501-3	1043.8	8.1885	28.429	682	1.0025	-1.0001	1.4321	1.2581	868.5	1366 .715	1.3447	1.2779	875.3	1276 .719
2100	8.2484-3	1115.7	8.2232	28.427	693	1.0032	-1.0001	1.4466	1.2553	878.1	1405 .714	1.3484	1.2770	885.6	1300 .719
2150	8.0559-3	1188.5	8.2575	28.425	704	1.0041	-1.0001	1.4622	1.2524	887.5	1445 .712	1.3518	1.2761	895.8	1324 .719
2200	7.8720-3	1262.0	8.2913	28.422	714	1.0051	-1.0002	1.4789	1.2495	896.7	1488 .710	1.3551	1.2753	906.0	1347 .718
2250	7.6960-3	1336.4	8.3247	28.418	725	1.0064	-1.0002	1.4969	1.2465	905.8	1533 .708	1.3582	1.2746	916.0	1371 .718
2300	7.5276-3	1411.7	8.3578	28.414	735	1.0079	-1.0003	1.5163	1.2434	914.8	1581 .705	1.3612	1.2739	925.9	1394 .718
2350	7.3660-3	1488.0	8.3906	28.408	745	1.0097	-1.0003	1.5374	1.2403	923.6	1633 .702	1.3640	1.2732	935.8	1417 .717
2400	7.2109-3	1565.5	8.4232	28.402	756	1.0118	-1.0004	1.5604	1.2371	932.3	1689 .698	1.3666	1.2726	945.6	1440 .717
2450	7.0619-3	1644.1	8.4557	28.394	766	1.0143	-1.0005	1.5855	1.2338	940.8	1749 .694	1.3692	1.2721	955.3	1463 .717
2500	6.9184-3	1724.0	8.4880	28.385	776	1.0173	-1.0007	1.6128	1.2305	949.2	1816 .689	1.3716	1.2716	965.0	1485 .716
2550	6.7802-3	1805.4	8.5202	28.375	786	1.0207	-1.0008	1.6428	1.2271	957.5	1889 .684	1.3739	1.2711	974.6	1508 .716
2600	6.6469-3	1888.4	8.5524	28.362	796	1.0247	-1.0010	1.6754	1.2236	965.7	1969 .677	1.3761	1.2707	984.1	1531 .715
2650	6.5181-3	1973.0	8.5847	28.347	806	1.0293	-1.0012	1.7111	1.2202	973.8	2057 .670	1.3781	1.2704	993.7	1553 .715
2700	6.3936-3	2059.5	8.6170	28.331	815	1.0346	-1.0014	1.7499	1.2167	981.9	2154 .662	1.3801	1.2701	1003.2	1576 .714
2750	6.2731-3	2148.1	8.6495	28.311	825	1.0406	-1.0017	1.7921	1.2132	989.9	2261 .654	1.3820	1.2698	1012.7	1598 .713
2800	6.1562-3	2238.8	8.6822	28.289	835	1.0473	-1.0020	1.8378	1.2098	997.8	2379 .645	1.3838	1.2697	1022.2	1621 .713
2850	6.0427-3	2331.9	8.7151	28.263	844	1.0549	-1.0024	1.8870	1.2064	1005.7	2509 .635	1.3855	1.2696	1031.7	1643 .712
2900	5.9324-3	2427.6	8.7484	28.234	854	1.0633	-1.0028	1.9397	1.2031	1013.6	2652 .624	1.3872	1.2695	1041.2	1665 .711
2950	5.8251-3	2525.9	8.7820	28.202	863	1.0725	-1.0033	1.9961	1.1999	1021.6	2808 .614	1.3888	1.2695	1050.8	1687 .710
3000	5.7206-3	2627.2	8.8161	28.165	873	1.0827	-1.0038	2.0559	1.1968	1029.5	2979 .602	1.3903	1.2696	1060.4	1710 .710

TABLE 28C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.016261; EQUIV.RATIO = 0.250; CHEM. EQUIV. RATIO = 0.3284;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.881-5	-1366.1	7.4072	28.435	1.0682	1.787-5	29.328	132	1.000	-1.000	0.9994	1.3960	281	180	.734	200
220	1.706-5	-1341.4	7.5244	28.435	1.5862	1.623-5	29.300	143	1.000	-1.000	1.0002	1.3961	295	196	.731	220
240	1.526-5	-1279.3	7.7918	28.435	6.0498	1.474-5	29.026	151	1.000	-1.000	1.0130	1.3942	310	208	.735	240
						PRESSURE = 0.10 ATM										
200	1.881-4	-1366.3	6.7859	28.435	1.0317	1.787-4	29.329	132	1.000	-1.000	0.9993	1.3960	281	180	.734	200
220	1.710-4	-1345.3	6.8860	28.435	1.0894	1.625-4	29.326	143	1.000	-1.000	0.9990	1.3963	295	196	.730	220
240	1.564-4	-1320.5	6.9936	28.435	1.5188	1.488-4	29.299	154	1.000	-1.000	1.0003	1.3961	308	211	.727	240
260	1.419-4	-1271.5	7.1883	28.435	4.0623	1.365-4	29.112	162	1.000	-1.000	1.0095	1.3945	322	225	.729	260
280	1.238-4	-1141.0	7.6715	28.435	1.0433	1.238-4	28.435	166	1.000	-1.000	1.0433	1.3894	337	233	.744	280
						PRESSURE = 1.00 ATM										
200	1.881-3	-1366.3	6.1657	28.435	1.0281	1.787-3	29.329	132	1.000	-1.000	0.9993	1.3960	281	180	.734	200
220	1.710-3	-1345.7	6.2642	28.435	1.0400	1.625-3	29.329	143	1.000	-1.000	0.9988	1.3963	295	196	.730	220
240	1.567-3	-1324.5	6.3562	28.435	1.0894	1.489-3	29.326	154	1.000	-1.000	0.9990	1.3963	308	212	.726	240
260	1.444-3	-1300.8	6.4508	28.435	1.3409	1.374-3	29.308	164	1.000	-1.000	1.0003	1.3959	321	227	.724	260
280	1.331-3	-1251.2	6.6335	28.435	2.1372	1.272-3	29.219	173	1.000	-1.000	1.0054	1.3947	333	241	.724	280
298	1.223-3	-1198.7	6.8148	28.435	3.9313	1.184-3	28.977	180	1.000	-1.000	1.0181	1.3924	345	252	.729	298
300	1.211-3	-1191.1	6.8401	28.435	4.2251	1.175-3	28.937	181	1.000	-1.000	1.0202	1.3920	346	253	.730	300
320	1.083-3	-1099.2	7.1378	28.435	1.0467	1.083-3	28.435	186	1.000	-1.000	1.0467	1.3876	360	262	.742	320
						PRESSURE = 10.00 ATM										
200	1.879-2	-1366.3	5.5456	28.435	1.0277	1.787-2	29.329	132	1.000	-1.000	0.9993	1.3960	281	180	.734	200
220	1.709-2	-1345.7	5.6439	28.435	1.0350	1.625-2	29.329	143	1.000	-1.000	0.9988	1.3963	295	196	.730	220
240	1.566-2	-1324.9	5.7344	28.435	1.0467	1.489-2	29.329	154	1.000	-1.000	0.9989	1.3963	308	212	.726	240
260	1.446-2	-1303.7	5.8192	28.435	1.0791	1.375-2	29.327	164	1.000	-1.000	0.9994	1.3960	321	227	.723	260
280	1.342-2	-1264.1	5.9651	28.435	1.2566	1.276-2	29.318	174	1.000	-1.000	1.0008	1.3954	333	242	.721	280
298	1.257-2	-1240.0	6.0485	28.435	1.4223	1.197-2	29.294	183	1.000	-1.000	1.0031	1.3946	344	255	.721	298
300	1.249-2	-1237.3	6.0574	28.435	1.4482	1.190-2	29.290	184	1.000	-1.000	1.0034	1.3945	345	256	.721	300
320	1.163-2	-1204.5	6.1632	28.435	1.8937	1.113-2	29.213	193	1.000	-1.000	1.0088	1.3930	356	269	.723	320
340	1.077-2	-1158.5	6.3025	28.435	2.8154	1.040-2	29.029	200	1.000	-1.000	1.0197	1.3906	368	281	.727	340
360	9.819-3	-1086.1	6.5088	28.435	4.6162	9.697-3	28.645	206	1.000	-1.000	1.0412	1.3865	381	291	.736	360
380	9.119-3	-1036.2	6.6450	28.435	1.0548	9.119-3	28.435	213	1.000	-1.000	1.0548	1.3836	392	303	.740	380
						PRESSURE = 50.00 ATM										
200	9.359-2	-1366.3	5.1122	28.435	1.0277	8.936-2	29.329	132	1.000	-1.000	0.9993	1.3960	281	180	.734	200
220	8.512-2	-1345.7	5.2105	28.435	1.0346	8.123-2	29.329	143	1.000	-1.000	0.9988	1.3963	295	196	.730	220
240	7.806-2	-1324.9	5.3009	28.435	1.0429	7.446-2	29.329	154	1.000	-1.000	0.9989	1.3963	308	212	.726	240
260	7.207-2	-1304.0	5.3848	28.435	1.0559	6.874-2	29.329	164	1.000	-1.000	0.9993	1.3960	321	227	.723	260
280	6.695-2	-1265.2	5.5275	28.435	1.1799	6.382-2	29.327	174	1.000	-1.000	1.0003	1.3955	333	242	.721	280
298	6.286-2	-1243.6	5.6025	28.435	1.2128	5.993-2	29.322	183	1.000	-1.000	1.0018	1.3948	343	255	.720	298
300	6.247-2	-1241.3	5.6100	28.435	1.2180	5.956-2	29.322	184	1.000	-1.000	1.0019	1.3947	344	256	.720	300
320	5.850-2	-1216.2	5.6910	28.435	1.3061	5.580-2	29.306	193	1.000	-1.000	1.0044	1.3937	356	270	.720	320
340	5.490-2	-1188.5	5.7749	28.435	1.4806	5.246-2	29.269	202	1.000	-1.000	1.0082	1.3923	367	283	.722	340
360	5.151-2	-1156.1	5.8675	28.435	1.7908	4.941-2	29.193	211	1.000	-1.000	1.0143	1.3904	378	295	.724	360
380	4.819-2	-1115.5	5.9770	28.435	2.3005	4.658-2	29.048	218	1.000	-1.000	1.0242	1.3879	389	307	.727	380
400	4.478-2	-1062.1	6.1138	28.435	3.0995	4.387-2	28.798	224	1.000	-1.000	1.0397	1.3845	400	319	.732	400
420	4.125-2	-993.9	6.2803	28.435	1.0617	4.125-2	28.435	230	1.000	-1.000	1.0617	1.3801	412	330	.739	420

TABLE 29A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.032523; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.4097;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06364; H2O= .11099; N2= .72014; O2= .09660; AR= .00864

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7311-3	8.6555-2	-1929.6	8.0114	7.3375	6.6637	5.9898	5.5188	1.0511	1.3859	284.8	119	161	.7750	200
210	1.6487-3	8.2433-2	-1919.1	8.0627	7.3888	6.7150	6.0411	5.5701	1.0514	1.3857	291.8	125	170	.7711	210
220	1.5737-3	7.8686-2	-1908.6	8.1116	7.4378	6.7639	6.0900	5.6190	1.0519	1.3855	298.7	130	178	.7676	220
230	1.5053-3	7.5265-2	-1898.1	8.1584	7.4845	6.8106	6.1368	5.6657	1.0524	1.3852	305.4	136	187	.7644	230
240	1.4426-3	7.2129-2	-1887.5	8.2032	7.5293	6.8555	6.1816	5.7106	1.0531	1.3849	311.9	141	195	.7615	240
250	1.3849-3	6.9244-2	-1877.0	8.2462	7.5723	6.8985	6.2246	5.7536	1.0539	1.3845	318.3	146	203	.7591	250
260	1.3316-3	6.6581-2	-1866.5	8.2876	7.6137	6.9398	6.2659	5.7949	1.0548	1.3840	324.5	151	211	.7570	260
270	1.2823-3	6.4115-2	-1855.9	8.3274	7.6535	6.9796	6.3058	5.8347	1.0557	1.3835	330.6	156	219	.7553	270
280	1.2365-3	6.1825-2	-1845.4	8.3658	7.6919	7.0180	6.3442	5.8731	1.0568	1.3830	336.6	161	226	.7539	280
290	1.1939-3	5.9693-2	-1834.8	8.4029	7.7290	7.0552	6.3813	5.9103	1.0580	1.3824	342.5	166	234	.7528	290
298	1.1612-3	5.8061-2	-1826.1	8.4322	7.7584	7.0845	6.4106	5.9396	1.0590	1.3819	347.2	170	240	.7522	298
300	1.1541-3	5.7703-2	-1824.2	8.4388	7.7649	7.0910	6.4172	5.9461	1.0593	1.3818	348.3	171	241	.7521	300
310	1.1168-3	5.5842-2	-1813.6	8.4735	7.7997	7.1258	6.4519	5.9809	1.0606	1.3811	354.0	176	249	.7519	310
320	1.0819-3	5.4097-2	-1803.0	8.5072	7.8334	7.1595	6.4856	6.0146	1.0621	1.3804	359.5	181	256	.7519	320
330	1.0491-3	5.2457-2	-1792.3	8.5399	7.8661	7.1922	6.5183	6.0473	1.0636	1.3796	365.0	186	263	.7519	330
340	1.0183-3	5.0915-2	-1781.7	8.5717	7.8978	7.2240	6.5501	6.0791	1.0652	1.3788	370.4	190	270	.7520	340
350	9.8920-4	4.9460-2	-1771.0	8.6026	7.9287	7.2549	6.5810	6.1100	1.0669	1.3780	375.7	195	277	.7520	350
360	9.6172-4	4.8086-2	-1760.4	8.6327	7.9588	7.2849	6.6111	6.1401	1.0686	1.3772	380.9	199	284	.7515	360
370	9.3573-4	4.6786-2	-1749.7	8.6620	7.9881	7.3143	6.6404	6.1694	1.0705	1.3763	386.0	204	291	.7509	370
380	9.1110-4	4.5555-2	-1739.0	8.6906	8.0167	7.3428	6.6689	6.1979	1.0724	1.3754	391.1	208	298	.7502	380
390	8.8774-4	4.4387-2	-1728.2	8.7185	8.0446	7.3707	6.6968	6.2258	1.0743	1.3744	396.1	213	305	.7494	390
400	8.6555-4	4.3277-2	-1717.5	8.7457	8.0718	7.3979	6.7241	6.2530	1.0764	1.3734	401.0	217	312	.7487	400
410	8.4444-4	4.2222-2	-1706.7	8.7723	8.0984	7.4245	6.7507	6.2796	1.0784	1.3724	405.8	221	319	.7483	410
420	8.2433-4	4.1217-2	-1695.9	8.7983	8.1244	7.4505	6.7767	6.3056	1.0806	1.3714	410.6	226	326	.7480	420
430	8.0516-4	4.0258-2	-1685.1	8.8238	8.1499	7.4760	6.8021	6.3311	1.0828	1.3704	415.3	230	333	.7477	430
440	7.8686-4	3.9343-2	-1674.2	8.8487	8.1748	7.5009	6.8270	6.3560	1.0851	1.3693	419.9	234	340	.7475	440
450	7.6938-4	3.8469-2	-1663.4	8.8731	8.1992	7.5253	6.8515	6.3804	1.0874	1.3683	424.5	238	346	.7474	450
460	7.5265-4	3.7633-2	-1652.5	8.8970	8.2231	7.5493	6.8754	6.4044	1.0897	1.3672	429.0	242	353	.7473	460
470	7.3664-4	3.6832-2	-1641.6	8.9205	8.2466	7.5727	6.8988	6.4278	1.0921	1.3661	433.5	246	360	.7473	470
480	7.2129-4	3.6065-2	-1630.7	8.9435	8.2696	7.5957	6.9219	6.4508	1.0946	1.3649	437.9	250	366	.7473	480
490	7.0657-4	3.5328-2	-1619.7	8.9661	8.2922	7.6183	6.9445	6.4734	1.0971	1.3638	442.2	254	373	.7473	490
500	6.9244-4	3.4622-2	-1608.7	8.9883	8.3144	7.6405	6.9666	6.4956	1.0996	1.3627	446.5	258	379	.7474	500
510	6.7886-4	3.3943-2	-1597.7	9.0101	8.3362	7.6623	6.9884	6.5174	1.1022	1.3615	450.8	262	386	.7472	510
520	6.6581-4	3.3290-2	-1586.7	9.0315	8.3576	7.6838	7.0099	6.5389	1.1048	1.3604	455.0	266	393	.7470	520
530	6.5324-4	3.2662-2	-1575.6	9.0526	8.3787	7.7048	7.0309	6.5599	1.1075	1.3592	459.2	269	400	.7468	530
540	6.4115-4	3.2057-2	-1564.5	9.0733	8.3994	7.7255	7.0517	6.5806	1.1101	1.3580	463.3	273	406	.7465	540
550	6.2949-4	3.1474-2	-1553.4	9.0937	8.4198	7.7459	7.0721	6.6010	1.1128	1.3568	467.3	277	413	.7463	550
560	6.1825-4	3.0912-2	-1542.3	9.1138	8.4399	7.7660	7.0921	6.6211	1.1156	1.3556	471.4	281	420	.7460	560
570	6.0740-4	3.0370-2	-1531.1	9.1335	8.4597	7.7858	7.1119	6.6409	1.1183	1.3545	475.3	284	427	.7457	570
580	5.9693-4	2.9846-2	-1519.9	9.1530	8.4791	7.8053	7.1314	6.6604	1.1211	1.3533	479.3	288	433	.7454	580
590	5.8681-4	2.9341-2	-1508.7	9.1722	8.4983	7.8244	7.1506	6.6795	1.1239	1.3521	483.2	292	440	.7451	590

TABLE 29A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.032523; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.4097;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06364; H2O= .11099; N2= .72014; O2= .09660; AR= .00864

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.7703-4	2.8852-2	-1497.4	9.1911	8.5172	7.8434	7.1695	6.6985	1.1267	1.3509	487.0	295	447	.7448	600
610	5.6757-4	2.8379-2	-1486.1	9.2098	8.5359	7.8620	7.1881	6.7171	1.1295	1.3497	490.9	299	454	.7444	610
620	5.5842-4	2.7921-2	-1474.8	9.2282	8.5543	7.8804	7.2065	6.7355	1.1324	1.3485	494.7	303	461	.7440	620
630	5.4955-4	2.7478-2	-1463.5	9.2463	8.5724	7.8985	7.2247	6.7536	1.1352	1.3473	498.4	306	468	.7436	630
640	5.4097-4	2.7048-2	-1452.1	9.2642	8.5903	7.9164	7.2426	6.7715	1.1381	1.3462	502.1	310	474	.7433	640
650	5.3264-4	2.6632-2	-1440.7	9.2819	8.6080	7.9341	7.2602	6.7892	1.1410	1.3450	505.8	313	481	.7429	650
660	5.2457-4	2.6229-2	-1429.3	9.2993	8.6254	7.9515	7.2777	6.8066	1.1439	1.3438	509.5	317	488	.7425	660
670	5.1674-4	2.5837-2	-1417.9	9.3165	8.6426	7.9688	7.2949	6.8239	1.1468	1.3427	513.1	320	495	.7421	670
680	5.0915-4	2.5457-2	-1406.4	9.3335	8.6597	7.9858	7.3119	6.8409	1.1497	1.3415	516.7	324	502	.7417	680
690	5.0177-4	2.5088-2	-1394.9	9.3503	8.6765	8.0026	7.3287	6.8577	1.1526	1.3403	520.3	327	509	.7413	690
700	4.9460-4	2.4730-2	-1383.3	9.3669	8.6931	8.0192	7.3453	6.8743	1.1555	1.3392	523.8	331	516	.7409	700
710	4.8763-4	2.4382-2	-1371.7	9.3834	8.7095	8.0356	7.3617	6.8907	1.1584	1.3381	527.3	334	522	.7405	710
720	4.8086-4	2.4043-2	-1360.2	9.3996	8.7257	8.0518	7.3779	6.9069	1.1613	1.3369	530.8	337	529	.7401	720
730	4.7427-4	2.3714-2	-1348.5	9.4156	8.7417	8.0679	7.3940	6.9230	1.1642	1.3358	534.2	341	536	.7397	730
740	4.6786-4	2.3393-2	-1336.9	9.4315	8.7576	8.0837	7.4098	6.9388	1.1671	1.3347	537.6	344	543	.7393	740
750	4.6163-4	2.3081-2	-1325.2	9.4472	8.7733	8.0994	7.4255	6.9545	1.1700	1.3336	541.0	347	550	.7389	750
760	4.5555-4	2.2778-2	-1313.5	9.4627	8.7888	8.1149	7.4410	6.9700	1.1728	1.3325	544.4	351	557	.7386	760
770	4.4963-4	2.2482-2	-1301.7	9.4780	8.8041	8.1303	7.4564	6.9854	1.1757	1.3314	547.8	354	564	.7382	770
780	4.4387-4	2.2194-2	-1290.0	9.4932	8.8193	8.1455	7.4716	7.0006	1.1786	1.3303	551.1	357	571	.7379	780
790	4.3825-4	2.1913-2	-1278.2	9.5082	8.8344	8.1605	7.4866	7.0156	1.1814	1.3293	554.4	360	577	.7375	790
800	4.3277-4	2.1639-2	-1266.3	9.5231	8.8492	8.1754	7.5015	7.0305	1.1843	1.3282	557.7	364	584	.7372	800
810	4.2743-4	2.1372-2	-1254.5	9.5379	8.8640	8.1901	7.5162	7.0452	1.1871	1.3272	560.9	367	591	.7369	810
820	4.2222-4	2.1111-2	-1242.6	9.5524	8.8786	8.2047	7.5308	7.0598	1.1899	1.3262	564.1	370	598	.7366	820
830	4.1713-4	2.0857-2	-1230.7	9.5669	8.8930	8.2191	7.5452	7.0742	1.1927	1.3252	567.4	373	605	.7363	830
840	4.1217-4	2.0608-2	-1218.7	9.5812	8.9073	8.2334	7.5595	7.0885	1.1955	1.3242	570.6	376	611	.7361	840
850	4.0732-4	2.0366-2	-1206.8	9.5953	8.9215	8.2476	7.5737	7.1027	1.1982	1.3232	573.7	380	618	.7358	850
860	4.0258-4	2.0129-2	-1194.8	9.6094	8.9355	8.2616	7.5877	7.1167	1.2009	1.3222	576.9	383	625	.7356	860
870	3.9795-4	1.9898-2	-1182.7	9.6233	8.9494	8.2755	7.6016	7.1306	1.2037	1.3213	580.0	386	632	.7353	870
880	3.9343-4	1.9672-2	-1170.7	9.6370	8.9632	8.2893	7.6154	7.1444	1.2063	1.3203	583.1	389	638	.7351	880
890	3.8901-4	1.9451-2	-1158.6	9.6507	8.9768	8.3029	7.6291	7.1580	1.2090	1.3194	586.2	392	645	.7349	890
900	3.8469-4	1.9234-2	-1146.5	9.6642	8.9903	8.3165	7.6426	7.1716	1.2117	1.3185	589.3	395	652	.7346	900
910	3.8046-4	1.9023-2	-1134.4	9.6776	9.0037	8.3299	7.6560	7.1850	1.2143	1.3176	592.4	398	658	.7344	910
920	3.7633-4	1.8816-2	-1122.2	9.6909	9.0170	8.3431	7.6693	7.1982	1.2169	1.3167	595.4	401	665	.7342	920
930	3.7228-4	1.8614-2	-1110.0	9.7041	9.0302	8.3563	7.6824	7.2114	1.2194	1.3158	598.4	404	671	.7340	930
940	3.6832-4	1.8416-2	-1097.8	9.7171	9.0432	8.3694	7.6955	7.2245	1.2220	1.3149	601.4	407	678	.7338	940
950	3.6444-4	1.8222-2	-1085.6	9.7301	9.0562	8.3823	7.7084	7.2374	1.2245	1.3141	604.4	410	685	.7336	950
960	3.6064-4	1.8032-2	-1073.3	9.7429	9.0690	8.3952	7.7213	7.2503	1.2270	1.3132	607.4	413	691	.7334	960
970	3.5693-4	1.7846-2	-1061.1	9.7556	9.0818	8.4079	7.7340	7.2630	1.2294	1.3124	610.4	416	698	.7332	970
980	3.5328-4	1.7664-2	-1048.8	9.7683	9.0944	8.4205	7.7466	7.2756	1.2318	1.3116	613.3	419	704	.7330	980
990	3.4972-4	1.7486-2	-1036.4	9.7808	9.1069	8.4330	7.7591	7.2881	1.2342	1.3108	616.3	422	711	.7328	990

TABLE 29A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.032523; EQUIV. RATIO= 0.500; CHEM. EQUIV. RATIO= 0.5522; MW = 28.4097;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .06364; H2O= .11099; N2= .72014; O2= .09660; AR= .00864

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4622-4	1.7311-2	-1024.1	9.7932	9.1193	8.4454	7.7716	7.3005	1.2366	1.3100	619.2	425	717	.7327	1000
1050	3.2973-4	1.6487-2	-962.0	9.8538	9.1799	8.5060	7.8322	7.3611	1.2477	1.3064	633.6	439	749	.7320	1050
1100	3.1474-4	1.5737-2	-899.3	9.9121	9.2382	8.5643	7.8905	7.4194	1.2584	1.3031	647.7	453	780	.7314	1100
1150	3.0106-4	1.5053-2	-836.1	9.9683	9.2944	8.6205	7.9466	7.4756	1.2685	1.2999	661.4	467	811	.7310	1150
1200	2.8852-4	1.4426-2	-772.5	10.0224	9.3486	8.6747	8.0008	7.5298	1.2782	1.2970	674.9	481	841	.7306	1200
1250	2.7698-4	1.3849-2	-708.3	10.0748	9.4009	8.7271	8.0532	7.5822	1.2875	1.2942	688.1	494	871	.7302	1250
1300	2.6632-4	1.3316-2	-643.7	10.1255	9.4516	8.7777	8.1038	7.6328	1.2963	1.2916	701.0	507	901	.7298	1300
1350	2.5646-4	1.2823-2	-578.7	10.1746	9.5007	8.8268	8.1529	7.6819	1.3046	1.2892	713.7	520	930	.7295	1350
1400	2.4730-4	1.2365-2	-513.3	10.2222	9.5483	8.8744	8.2005	7.7295	1.3126	1.2869	726.1	533	959	.7291	1400
1450	2.3877-4	1.1939-2	-447.4	10.2683	9.5945	8.9206	8.2467	7.7757	1.3202	1.2848	738.4	545	988	.7287	1450
1500	2.3081-4	1.1541-2	-381.3	10.3132	9.6394	8.9655	8.2916	7.8206	1.3275	1.2828	750.4	558	1017	.7282	1500
1550	2.2337-4	1.1168-2	-314.7	10.3569	9.6830	9.0091	8.3352	7.8642	1.3344	1.2809	762.3	570	1046	.7276	1550
1600	2.1639-4	1.0819-2	-247.8	10.3993	9.7255	9.0516	8.3777	7.9067	1.3409	1.2792	773.9	582	1074	.7270	1600
1650	2.0983-4	1.0491-2	-180.6	10.4407	9.7668	9.0929	8.4191	7.9480	1.3471	1.2775	785.4	594	1102	.7263	1650
1700	2.0366-4	1.0183-2	-113.1	10.4810	9.8071	9.1332	8.4594	7.9883	1.3531	1.2760	796.8	606	1130	.7257	1700
1750	1.9784-4	9.8920-3	-45.3	10.5203	9.8464	9.1726	8.4987	8.0277	1.3587	1.2745	807.9	618	1158	.7250	1750
1800	1.9234-4	9.6172-3	22.8	10.5587	9.8848	9.2109	8.5370	8.0660	1.3640	1.2732	819.0	629	1185	.7243	1800
1850	1.8715-4	9.3573-3	91.1	10.5961	9.9222	9.2483	8.5745	8.1034	1.3691	1.2719	829.8	641	1212	.7237	1850
1900	1.8222-4	9.1110-3	159.7	10.6327	9.9588	9.2849	8.6110	8.1400	1.3739	1.2707	840.6	652	1239	.7230	1900
1950	1.7755-4	8.8774-3	228.5	10.6684	9.9945	9.3207	8.6468	8.1758	1.3785	1.2695	851.2	663	1266	.7223	1950
2000	1.7311-4	8.6555-3	297.5	10.7034	10.0295	9.3556	8.6817	8.2107	1.3828	1.2685	861.7	674	1292	.7217	2000
2050	1.6889-4	8.4444-3	366.7	10.7376	10.0637	9.3898	8.7159	8.2449	1.3870	1.2674	872.0	686	1318	.7212	2050
2100	1.6487-4	8.2433-3	436.2	10.7710	10.0972	9.4233	8.7494	8.2784	1.3909	1.2665	882.3	696	1344	.7207	2100
2150	1.6103-4	8.0516-3	505.8	10.8038	10.1299	9.4561	8.7822	8.3112	1.3946	1.2656	892.4	707	1370	.7201	2150
2200	1.5737-4	7.8686-3	575.7	10.8359	10.1620	9.4882	8.8143	8.3433	1.3982	1.2647	902.4	718	1395	.7196	2200
2250	1.5388-4	7.6938-3	645.6	10.8674	10.1935	9.5196	8.8457	8.3747	1.4015	1.2639	912.3	729	1420	.7191	2250
2300	1.5053-4	7.5265-3	715.8	10.8982	10.2243	9.5505	8.8766	8.4056	1.4047	1.2632	922.1	739	1445	.7186	2300
2350	1.4733-4	7.3664-3	786.1	10.9285	10.2546	9.5807	8.9068	8.4358	1.4078	1.2624	931.8	750	1469	.7181	2350
2400	1.4426-4	7.2129-3	856.6	10.9581	10.2843	9.6104	8.9365	8.4655	1.4107	1.2618	941.4	760	1494	.7176	2400
2450	1.4131-4	7.0657-3	927.2	10.9872	10.3134	9.6395	8.9656	8.4946	1.4135	1.2611	950.9	770	1518	.7170	2450
2500	1.3849-4	6.9244-3	997.9	11.0158	10.3420	9.6681	8.9942	8.5232	1.4161	1.2605	960.3	780	1542	.7165	2500
2550	1.3577-4	6.7886-3	1068.8	11.0439	10.3700	9.6961	9.0223	8.5512	1.4186	1.2599	969.7	790	1567	.7157	2550
2600	1.3316-4	6.6581-3	1139.8	11.0715	10.3976	9.7237	9.0498	8.5788	1.4211	1.2594	978.9	800	1591	.7150	2600
2650	1.3065-4	6.5324-3	1210.9	11.0986	10.4247	9.7508	9.0769	8.6059	1.4234	1.2588	988.1	810	1615	.7143	2650
2700	1.2823-4	6.4115-3	1282.1	11.1252	10.4513	9.7774	9.1036	8.6325	1.4256	1.2583	997.1	820	1639	.7136	2700
2750	1.2590-4	6.2949-3	1353.5	11.1514	10.4775	9.8036	9.1297	8.6587	1.4277	1.2578	1006.1	830	1662	.7129	2750
2800	1.2365-4	6.1825-3	1424.9	11.1771	10.5032	9.8294	9.1555	8.6845	1.4298	1.2574	1015.1	840	1686	.7123	2800
2850	1.2148-4	6.0740-3	1496.4	11.2024	10.5286	9.8547	9.1808	8.7098	1.4318	1.2569	1023.9	849	1709	.7116	2850
2900	1.1939-4	5.9693-3	1568.1	11.2274	10.5535	9.8796	9.2057	8.7347	1.4337	1.2565	1032.7	859	1732	.7110	2900
2950	1.1736-4	5.8681-3	1639.8	11.2519	10.5780	9.9041	9.2302	8.7592	1.4356	1.2561	1041.4	869	1755	.7104	2950
3000	1.1541-4	5.7703-3	1711.6	11.2760	10.6021	9.9283	9.2544	8.7834	1.4374	1.2557	1050.0	878	1778	.7098	3000

TABLE 29.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.032523; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8469-6	-1146.5	9.6643	28.410	395	1.0000	-1.0000	1.2120	1.3184	589.3	652	.735	1.2117	1.3185	589.3	652	.735
950	3.6444-6	-1085.6	9.7301	28.410	410	1.0000	-1.0000	1.2250	1.3139	604.4	685	.734	1.2245	1.3141	604.4	685	.734
1000	3.4622-6	-1024.0	9.7933	28.410	425	1.0000	-1.0000	1.2374	1.3098	619.1	718	.733	1.2366	1.3100	619.2	717	.733
1050	3.2973-6	-961.8	9.8539	28.410	439	1.0000	-1.0000	1.2490	1.3060	633.5	750	.732	1.2477	1.3064	633.6	749	.732
1100	3.1474-6	-899.1	9.9123	28.410	453	1.0000	-1.0000	1.2603	1.3025	647.5	781	.731	1.2584	1.3031	647.7	780	.731
1150	3.0106-6	-835.8	9.9686	28.410	467	1.0000	-1.0000	1.2714	1.2990	661.2	813	.731	1.2685	1.2999	661.4	811	.731
1200	2.8852-6	-772.0	10.0229	28.410	481	1.0000	-1.0000	1.2823	1.2958	674.6	844	.731	1.2782	1.2970	674.9	841	.731
1250	2.7697-6	-707.6	10.0755	28.410	494	1.0001	-1.0000	1.2932	1.2926	687.6	875	.730	1.2875	1.2942	688.1	871	.730
1300	2.6632-6	-642.7	10.1264	28.409	507	1.0001	-1.0000	1.3042	1.2894	700.4	907	.730	1.2963	1.2916	701.0	901	.730
1350	2.5645-6	-577.2	10.1758	28.409	520	1.0002	-1.0000	1.3155	1.2863	712.9	939	.729	1.3046	1.2892	713.7	930	.729
1400	2.4729-6	-511.1	10.2239	28.409	533	1.0004	-1.0000	1.3276	1.2831	725.1	972	.728	1.3126	1.2869	726.2	959	.729
1450	2.3876-6	-444.4	10.2707	28.408	545	1.0006	-1.0000	1.3407	1.2797	736.9	1006	.727	1.3202	1.2848	738.4	988	.729
1500	2.3080-6	-377.0	10.3164	28.408	558	1.0010	-1.0000	1.3554	1.2761	748.5	1042	.726	1.3275	1.2828	750.5	1017	.728
1550	2.2334-6	-308.8	10.3611	28.406	570	1.0017	-1.0000	1.3727	1.2721	759.7	1082	.723	1.3344	1.2810	762.3	1046	.728
1600	2.1635-6	-239.7	10.4050	28.405	582	1.0026	-1.0001	1.3937	1.2676	770.5	1127	.720	1.3409	1.2793	774.0	1074	.727
1650	2.0977-6	-169.3	10.4483	28.402	594	1.0041	-1.0001	1.4199	1.2623	780.8	1180	.715	1.3471	1.2776	785.6	1102	.726
1700	2.0357-6	-97.5	10.4912	28.397	606	1.0064	-1.0002	1.4537	1.2560	790.7	1244	.708	1.3530	1.2761	797.0	1130	.726
1750	1.9771-6	-23.8	10.5339	28.391	618	1.0097	-1.0002	1.4982	1.2485	799.9	1325	.698	1.3587	1.2748	808.3	1158	.725
1800	1.9215-6	52.5	10.5769	28.381	629	1.0146	-1.0004	1.5571	1.2396	808.5	1431	.685	1.3640	1.2735	819.5	1186	.724
1850	1.8687-6	132.2	10.6206	28.367	641	1.0217	-1.0006	1.6357	1.2292	816.4	1571	.667	1.3690	1.2724	830.6	1213	.723
1900	1.8182-6	216.5	10.6655	28.347	652	1.0318	-1.0009	1.7402	1.2173	823.7	1761	.644	1.3738	1.2715	841.8	1240	.722
1950	1.7698-6	306.8	10.7124	28.319	663	1.0459	-1.0014	1.8782	1.2043	830.4	2019	.617	1.3783	1.2707	852.9	1267	.721
2000	1.7232-6	405.0	10.7621	28.279	674	1.0652	-1.0020	2.0581	1.1906	836.7	2369	.585	1.3825	1.2701	864.2	1294	.720
2050	1.6779-6	513.5	10.8157	28.225	685	1.0910	-1.0029	2.2886	1.1769	843.0	2836	.552	1.3865	1.2698	875.7	1321	.718
2100	1.6337-6	634.9	10.8742	28.153	695	1.1246	-1.0041	2.5782	1.1639	849.6	3452	.519	1.3902	1.2697	887.4	1348	.717
2150	1.5903-6	772.4	10.9389	28.057	705	1.1672	-1.0056	2.9335	1.1521	856.8	4246	.487	1.3937	1.2700	899.5	1376	.714
2200	1.5473-6	929.4	11.0111	27.933	715	1.2200	-1.0076	3.3588	1.1419	864.7	5245	.458	1.3970	1.2708	912.2	1405	.711
2250	1.5044-6	1109.5	11.0920	27.776	725	1.2835	-1.0101	3.8556	1.1335	873.7	6468	.432	1.4001	1.2719	925.6	1435	.707
2300	1.4614-6	1316.1	11.1828	27.581	734	1.3579	-1.0132	4.4226	1.1267	883.9	7920	.410	1.4031	1.2736	939.7	1466	.703
2350	1.4181-6	1552.8	11.2846	27.345	743	1.4431	-1.0168	5.0563	1.1216	895.2	9585	.392	1.4060	1.2759	954.8	1501	.696
2400	1.3743-6	1822.8	11.3982	27.065	752	1.5383	-1.0210	5.7505	1.1178	907.8	11424	.379	1.4089	1.2788	971.0	1538	.689
2450	1.3300-6	2128.7	11.5244	26.738	761	1.6421	-1.0258	6.4947	1.1152	921.7	13364	.370	1.4119	1.2824	988.4	1580	.680
2500	1.2852-6	2472.8	11.6633	26.365	769	1.7514	-1.0311	7.2700	1.1136	937.0	15298	.366	1.4150	1.2868	1007.2	1626	.669
2550	1.2400-6	2855.7	11.8150	25.947	777	1.8614	-1.0366	8.0450	1.1129	953.6	17086	.366	1.4183	1.2919	1027.4	1678	.657
2600	1.1948-6	3276.5	11.9784	25.490	786	1.9649	-1.0421	8.7716	1.1130	971.5	18567	.371	1.4219	1.2977	1049.1	1734	.644
2650	1.1499-6	3731.0	12.1515	25.005	794	2.0527	-1.0470	9.3861	1.1139	990.7	19581	.381	1.4256	1.3042	1072.0	1795	.631
2700	1.1059-6	4212.0	12.3313	24.502	802	2.1146	-1.0510	9.8172	1.1155	1010.9	20003	.394	1.4296	1.3112	1096.1	1859	.617
2750	1.0635-6	4708.6	12.5136	23.999	810	2.1422	-1.0535	10.0009	1.1179	1032.0	19777	.410	1.4336	1.3187	1120.9	1924	.604
2800	1.0233-6	5207.4	12.6933	23.511	819	2.1309	-1.0542	9.9006	1.1211	1053.6	18935	.428	1.4377	1.3262	1146.0	1989	.592
2850	9.8578-7	5694.0	12.8656	23.054	828	2.0819	-1.0530	9.5204	1.1251	1075.4	17596	.448	1.4416	1.3336	1170.8	2052	.582
2900	9.5135-7	6155.5	13.0261	22.639	837	2.0017	-1.0501	8.9056	1.1301	1097.1	15932	.468	1.4453	1.3407	1195.0	2111	.573
2950	9.2012-7	6581.8	13.1719	22.273	846	1.9004	-1.0459	8.1288	1.1362	1118.6	14123	.487	1.4487	1.3471	1218.0	2166	.566
3000	8.9202-7	6967.0	13.3014	21.959	856	1.7884	-1.0410	7.2707	1.1435	1139.7	12327	.505	1.4518	1.3528	1239.6	2217	.560

TABLE 29.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.032523; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8469-5	-1146.5	8.9904	28.410	395	1.0000	-1.0000	1.2120	1.3184	589.3	652	.735	1.2117	1.3185	589.3	652	.735
950	3.6444-5	-1085.6	9.0562	28.410	410	1.0000	-1.0000	1.2250	1.3139	604.4	685	.734	1.2245	1.3141	604.4	685	.734
1000	3.4622-5	-1024.0	9.1194	28.410	425	1.0000	-1.0000	1.2374	1.3098	619.1	718	.733	1.2366	1.3100	619.2	717	.733
1050	3.2973-5	-961.8	9.1800	28.410	439	1.0000	-1.0000	1.2490	1.3060	633.5	750	.732	1.2477	1.3064	633.6	749	.732
1100	3.1474-5	-899.1	9.2384	28.410	453	1.0000	-1.0000	1.2602	1.3025	647.5	781	.731	1.2584	1.3031	647.7	780	.731
1150	3.0106-5	-835.8	9.2947	28.410	467	1.0000	-1.0000	1.2712	1.2991	661.2	812	.731	1.2685	1.2999	661.4	811	.731
1200	2.8852-5	-772.0	9.3490	28.410	481	1.0000	-1.0000	1.2820	1.2958	674.6	844	.731	1.2782	1.2970	674.9	841	.731
1250	2.7697-5	-707.6	9.4015	28.410	494	1.0000	-1.0000	1.2926	1.2927	687.7	875	.730	1.2875	1.2942	688.1	871	.730
1300	2.6632-5	-642.7	9.4524	28.410	507	1.0001	-1.0000	1.3032	1.2897	700.5	906	.730	1.2963	1.2916	701.0	901	.730
1350	2.5646-5	-577.3	9.5018	28.409	520	1.0001	-1.0000	1.3139	1.2867	713.0	937	.729	1.3046	1.2892	713.7	930	.729
1400	2.4730-5	-511.3	9.5498	28.409	533	1.0002	-1.0000	1.3247	1.2837	725.2	969	.729	1.3126	1.2869	726.2	959	.729
1450	2.3877-5	-444.8	9.5965	28.409	545	1.0003	-1.0000	1.3360	1.2807	737.2	1001	.728	1.3202	1.2848	738.4	988	.729
1500	2.3080-5	-377.7	9.6420	28.409	558	1.0005	-1.0000	1.3480	1.2777	748.9	1034	.727	1.3275	1.2828	750.4	1017	.728
1550	2.2335-5	-310.0	9.6864	28.408	570	1.0008	-1.0000	1.3609	1.2745	760.4	1069	.726	1.3344	1.2810	762.3	1046	.728
1600	2.1637-5	-241.6	9.7298	28.407	582	1.0012	-1.0000	1.3753	1.2711	771.5	1106	.724	1.3409	1.2792	774.0	1074	.727
1650	2.0980-5	-172.4	9.7724	28.406	594	1.0018	-1.0000	1.3916	1.2675	782.4	1145	.722	1.3471	1.2776	785.5	1102	.726
1700	2.0362-5	-102.4	9.8142	28.404	606	1.0027	-1.0001	1.4106	1.2635	792.9	1188	.719	1.3530	1.2761	796.9	1130	.726
1750	1.9778-5	-31.3	9.8554	28.401	618	1.0040	-1.0001	1.4334	1.2591	803.1	1237	.716	1.3587	1.2746	808.1	1158	.725
1800	1.9226-5	41.0	9.8962	28.397	629	1.0058	-1.0001	1.4611	1.2540	813.0	1294	.711	1.3640	1.2733	819.2	1185	.724
1850	1.8703-5	114.9	9.9367	28.392	641	1.0084	-1.0002	1.4955	1.2483	822.4	1361	.704	1.3690	1.2721	830.2	1213	.724
1900	1.8206-5	190.7	9.9771	28.384	652	1.0119	-1.0003	1.5384	1.2417	831.3	1443	.695	1.3738	1.2710	841.1	1240	.723
1950	1.7732-5	268.9	10.0177	28.374	663	1.0168	-1.0005	1.5925	1.2342	839.8	1544	.684	1.3784	1.2700	851.9	1266	.722
2000	1.7280-5	350.2	10.0589	28.360	674	1.0234	-1.0007	1.6606	1.2258	847.8	1671	.670	1.3827	1.2691	862.6	1293	.721
2050	1.6847-5	435.3	10.1009	28.340	685	1.0323	-1.0010	1.7462	1.2166	855.4	1833	.653	1.3867	1.2683	873.4	1319	.720
2100	1.6431-5	525.2	10.1442	28.314	696	1.0439	-1.0014	1.8529	1.2067	862.6	2038	.633	1.3905	1.2677	884.2	1345	.719
2150	1.6030-5	621.0	10.1893	28.280	707	1.0589	-1.0019	1.9847	1.1964	869.6	2300	.610	1.3941	1.2672	895.0	1371	.718
2200	1.5641-5	724.1	10.2367	28.236	717	1.0780	-1.0026	2.1453	1.1860	876.5	2630	.585	1.3975	1.2669	905.9	1397	.717
2250	1.5263-5	836.1	10.2870	28.180	727	1.1017	-1.0035	2.3381	1.1760	883.6	3042	.559	1.4007	1.2669	917.1	1423	.716
2300	1.4893-5	958.5	10.3408	28.108	737	1.1307	-1.0047	2.5652	1.1665	890.9	3550	.533	1.4036	1.2670	928.4	1449	.714
2350	1.4530-5	1093.2	10.3987	28.019	747	1.1652	-1.0060	2.8278	1.1580	898.6	4166	.507	1.4064	1.2674	940.1	1476	.712
2400	1.4172-5	1241.9	10.4613	27.910	757	1.2057	-1.0077	3.1256	1.1505	906.9	4899	.483	1.4089	1.2681	952.2	1503	.710
2450	1.3818-5	1406.3	10.5291	27.779	767	1.2520	-1.0097	3.4570	1.1441	916.0	5756	.460	1.4114	1.2691	964.7	1531	.707
2500	1.3466-5	1588.1	10.6026	27.624	776	1.3040	-1.0121	3.8194	1.1389	925.7	6737	.440	1.4137	1.2705	977.8	1561	.703
2550	1.3115-5	1788.7	10.6820	27.443	785	1.3616	-1.0147	4.2101	1.1347	936.3	7837	.422	1.4159	1.2722	991.4	1592	.698
2600	1.2765-5	2009.5	10.7678	27.234	794	1.4244	-1.0178	4.6259	1.1314	947.7	9041	.406	1.4180	1.2744	1005.8	1625	.693
2650	1.2416-5	2251.7	10.8600	26.998	803	1.4917	-1.0211	5.0632	1.1290	959.9	10326	.394	1.4202	1.2769	1020.8	1661	.686
2700	1.2066-5	2516.1	10.9588	26.733	811	1.5629	-1.0248	5.5170	1.1273	972.9	11656	.384	1.4223	1.2799	1036.7	1699	.679
2750	1.1717-5	2803.5	11.0643	26.441	820	1.6367	-1.0288	5.9799	1.1262	986.9	12983	.378	1.4246	1.2833	1053.4	1741	.671
2800	1.1369-5	3114.1	11.1762	26.122	829	1.7111	-1.0330	6.4410	1.1258	1001.7	14250	.375	1.4269	1.2871	1071.0	1785	.662
2850	1.1023-5	3447.3	11.2942	25.778	837	1.7836	-1.0372	6.8845	1.1259	1017.3	15390	.374	1.4294	1.2914	1089.5	1833	.653
2900	1.0680-5	3801.9	11.4175	25.414	846	1.8507	-1.0413	7.2902	1.1266	1033.8	16337	.377	1.4320	1.2961	1108.9	1885	.642
2950	1.0342-5	4175.3	11.5451	25.035	854	1.9084	-1.0452	7.6339	1.1278	1051.1	17026	.383	1.4347	1.3012	1129.1	1939	.632
3000	1.0012-5	4563.8	11.6757	24.646	863	1.9529	-1.0484	7.8905	1.1295	1069.2	17409	.391	1.4376	1.3066	1150.0	1996	.621

TABLE 29.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.032523; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8469-4	-1146.5	8.3165	28.410	395	1.0000	-1.0000	1.2120	1.3184	589.3	652	.735	1.2117	1.3185	589.3	652	.735
950	3.6444-4	-1085.6	8.3824	28.410	410	1.0000	-1.0000	1.2250	1.3139	604.4	685	.734	1.2245	1.3141	604.4	685	.734
1000	3.4622-4	-1024.0	8.4455	28.410	425	1.0000	-1.0000	1.2374	1.3098	619.1	718	.733	1.2366	1.3100	619.2	717	.733
1050	3.2973-4	-961.8	8.5062	28.410	439	1.0000	-1.0000	1.2490	1.3060	633.5	750	.732	1.2477	1.3064	633.6	749	.732
1100	3.1474-4	-899.1	8.5645	28.410	453	1.0000	-1.0000	1.2602	1.3025	647.5	781	.731	1.2584	1.3031	647.7	780	.731
1150	3.0106-4	-835.8	8.6208	28.410	467	1.0000	-1.0000	1.2711	1.2991	661.2	812	.731	1.2685	1.2999	661.4	811	.731
1200	2.8852-4	-772.0	8.6751	28.410	481	1.0000	-1.0000	1.2818	1.2959	674.6	843	.731	1.2782	1.2970	674.9	841	.731
1250	2.7698-4	-707.6	8.7277	28.410	494	1.0000	-1.0000	1.2923	1.2928	687.7	874	.730	1.2875	1.2942	688.1	871	.730
1300	2.6632-4	-642.8	8.7785	28.410	507	1.0000	-1.0000	1.3027	1.2898	700.5	905	.730	1.2963	1.2916	701.0	901	.730
1350	2.5646-4	-577.4	8.8279	28.410	520	1.0001	-1.0000	1.3130	1.2869	713.0	936	.729	1.3046	1.2892	713.7	930	.729
1400	2.4730-4	-511.5	8.8758	28.409	533	1.0001	-1.0000	1.3233	1.2840	725.3	967	.729	1.3126	1.2869	726.1	959	.729
1450	2.3877-4	-445.0	8.9225	28.409	545	1.0002	-1.0000	1.3338	1.2812	737.4	999	.728	1.3202	1.2848	738.4	988	.729
1500	2.3081-4	-378.1	8.9678	28.409	558	1.0003	-1.0000	1.3445	1.2784	749.1	1031	.728	1.3275	1.2828	750.4	1017	.728
1550	2.2336-4	-310.6	9.0121	28.409	570	1.0004	-1.0000	1.3556	1.2756	760.7	1063	.727	1.3344	1.2810	762.3	1046	.728
1600	2.1638-4	-242.5	9.0553	28.408	582	1.0006	-1.0000	1.3672	1.2728	772.0	1097	.726	1.3409	1.2792	774.0	1074	.727
1650	2.0982-4	-173.9	9.0976	28.408	594	1.0009	-1.0000	1.3796	1.2698	783.1	1131	.725	1.3471	1.2776	785.5	1102	.726
1700	2.0364-4	-104.5	9.1390	28.407	606	1.0012	-1.0000	1.3930	1.2668	793.9	1167	.723	1.3531	1.2760	796.8	1130	.726
1750	1.9781-4	-34.5	9.1796	28.406	618	1.0018	-1.0000	1.4078	1.2636	804.5	1206	.721	1.3587	1.2746	808.0	1158	.725
1800	1.9231-4	36.3	9.2195	28.404	629	1.0025	-1.0001	1.4244	1.2602	814.9	1246	.719	1.3640	1.2732	819.1	1185	.724
1850	1.8709-4	107.9	9.2587	28.402	641	1.0035	-1.0001	1.4434	1.2565	824.9	1291	.717	1.3691	1.2720	830.0	1212	.724
1900	1.8215-4	180.7	9.2975	28.398	652	1.0049	-1.0001	1.4653	1.2526	834.7	1340	.713	1.3739	1.2708	840.8	1239	.723
1950	1.7745-4	254.5	9.3359	28.394	663	1.0067	-1.0002	1.4911	1.2482	844.2	1395	.709	1.3784	1.2697	851.5	1266	.722
2000	1.7298-4	329.8	9.3740	28.389	674	1.0092	-1.0003	1.5215	1.2434	853.4	1459	.703	1.3827	1.2687	862.1	1293	.721
2050	1.6872-4	406.8	9.4120	28.381	685	1.0123	-1.0004	1.5579	1.2382	862.3	1532	.697	1.3868	1.2678	872.6	1319	.721
2100	1.6464-4	485.7	9.4501	28.371	696	1.0165	-1.0005	1.6014	1.2324	870.9	1619	.689	1.3907	1.2670	883.0	1344	.720
2150	1.6074-4	567.1	9.4883	28.359	707	1.0218	-1.0007	1.6535	1.2261	879.1	1722	.679	1.3944	1.2663	893.4	1370	.720
2200	1.5700-4	651.3	9.5270	28.342	718	1.0285	-1.0009	1.7158	1.2194	887.1	1845	.667	1.3978	1.2656	903.8	1396	.719
2250	1.5340-4	738.9	9.5664	28.321	728	1.0370	-1.0012	1.7900	1.2123	894.9	1994	.654	1.4011	1.2651	914.1	1421	.718
2300	1.4992-4	830.5	9.6067	28.295	739	1.0475	-1.0016	1.8777	1.2049	902.4	2173	.638	1.4041	1.2647	924.5	1446	.717
2350	1.4657-4	926.9	9.6481	28.263	749	1.0603	-1.0021	1.9806	1.1974	909.8	2388	.621	1.4070	1.2644	934.9	1471	.716
2400	1.4331-4	1028.8	9.6911	28.222	759	1.0757	-1.0028	2.0998	1.1899	917.2	2645	.603	1.4097	1.2642	945.4	1496	.715
2450	1.4014-4	1137.1	9.7357	28.173	769	1.0939	-1.0035	2.2362	1.1826	924.7	2950	.583	1.4123	1.2642	956.1	1521	.714
2500	1.3705-4	1252.7	9.7824	28.114	779	1.1152	-1.0044	2.3902	1.1757	932.3	3306	.563	1.4146	1.2643	966.8	1546	.713
2550	1.3402-4	1376.5	9.8314	28.043	789	1.1397	-1.0055	2.5614	1.1694	940.3	3721	.543	1.4168	1.2646	977.8	1572	.711
2600	1.3105-4	1509.1	9.8830	27.960	798	1.1672	-1.0067	2.7489	1.1637	948.5	4197	.523	1.4189	1.2651	989.0	1598	.709
2650	1.2814-4	1651.6	9.9372	27.863	808	1.1978	-1.0082	2.9512	1.1586	957.2	4735	.503	1.4208	1.2659	1000.5	1625	.706
2700	1.2526-4	1804.5	9.9944	27.752	817	1.2314	-1.0098	3.1666	1.1543	966.3	5336	.485	1.4226	1.2668	1012.3	1652	.704
2750	1.2242-4	1968.4	10.0545	27.625	826	1.2676	-1.0116	3.3931	1.1507	975.9	6000	.467	1.4244	1.2679	1024.4	1680	.701
2800	1.1962-4	2143.9	10.1178	27.483	835	1.3064	-1.0136	3.6290	1.1477	986.0	6723	.451	1.4260	1.2693	1036.9	1708	.697
2850	1.1684-4	2331.5	10.1841	27.324	844	1.3475	-1.0158	3.8727	1.1453	996.6	7499	.436	1.4276	1.2709	1049.8	1738	.693
2900	1.1409-4	2531.3	10.2536	27.150	853	1.3906	-1.0182	4.1225	1.1435	1007.7	8321	.423	1.4292	1.2727	1063.2	1770	.689
2950	1.1137-4	2743.8	10.3263	26.959	862	1.4356	-1.0207	4.3772	1.1422	1019.4	9175	.411	1.4307	1.2748	1077.0	1803	.684
3000	1.0867-4	2969.1	10.4020	26.752	871	1.4821	-1.0235	4.6349	1.1413	1031.6	10047	.402	1.4323	1.2771	1091.2	1838	.679

TABLE 29.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.032523; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8469-3	-1146.5	7.6426	28.410	395	1.0000	-1.0000	1.2120	1.3184	589.3	652	.735	1.2117	1.3185	589.3	652	.735
950	3.6444-3	-1085.6	7.7085	28.410	410	1.0000	-1.0000	1.2250	1.3139	604.4	685	.734	1.2245	1.3141	604.4	685	.734
1000	3.4622-3	-1024.0	7.7716	28.410	425	1.0000	-1.0000	1.2374	1.3098	619.1	718	.733	1.2366	1.3100	619.2	717	.733
1050	3.2973-3	-961.8	7.8323	28.410	439	1.0000	-1.0000	1.2490	1.3060	633.5	750	.732	1.2477	1.3064	633.6	749	.732
1100	3.1474-3	-899.1	7.8907	28.410	453	1.0000	-1.0000	1.2602	1.3025	647.5	781	.731	1.2584	1.3031	647.7	780	.731
1150	3.0106-3	-835.8	7.9469	28.410	467	1.0000	-1.0000	1.2711	1.2991	661.2	812	.731	1.2685	1.2999	661.4	811	.731
1200	2.8852-3	-772.0	8.0012	28.410	481	1.0000	-1.0000	1.2817	1.2959	674.6	843	.731	1.2782	1.2970	674.9	841	.731
1250	2.7698-3	-707.7	8.0538	28.410	494	1.0000	-1.0000	1.2921	1.2928	687.7	874	.730	1.2875	1.2942	688.1	871	.730
1300	2.6632-3	-642.8	8.1046	28.410	507	1.0000	-1.0000	1.3024	1.2898	700.5	905	.730	1.2963	1.2916	701.0	901	.730
1350	2.5646-3	-577.4	8.1540	28.410	520	1.0000	-1.0000	1.3125	1.2870	713.1	936	.729	1.3046	1.2892	713.7	930	.729
1400	2.4730-3	-511.5	8.2019	28.410	533	1.0000	-1.0000	1.3226	1.2842	725.4	967	.729	1.3126	1.2869	726.1	959	.729
1450	2.3877-3	-445.2	8.2485	28.410	545	1.0001	-1.0000	1.3326	1.2815	737.4	998	.729	1.3202	1.2848	738.4	988	.729
1500	2.3081-3	-378.3	8.2938	28.409	558	1.0001	-1.0000	1.3427	1.2788	749.3	1029	.728	1.3275	1.2828	750.4	1017	.728
1550	2.2336-3	-310.9	8.3380	28.409	570	1.0002	-1.0000	1.3530	1.2761	760.9	1061	.727	1.3344	1.2809	762.3	1046	.728
1600	2.1638-3	-243.0	8.3812	28.409	582	1.0003	-1.0000	1.3634	1.2735	772.2	1093	.727	1.3409	1.2792	774.0	1074	.727
1650	2.0982-3	-174.5	8.4233	28.409	594	1.0004	-1.0000	1.3741	1.2709	783.4	1125	.726	1.3471	1.2776	785.5	1102	.726
1700	2.0365-3	-105.6	8.4645	28.408	606	1.0006	-1.0000	1.3851	1.2683	794.4	1158	.725	1.3531	1.2760	796.8	1130	.726
1750	1.9783-3	-36.0	8.5048	28.408	618	1.0009	-1.0000	1.3967	1.2656	805.1	1193	.724	1.3587	1.2746	808.0	1158	.725
1800	1.9233-3	34.1	8.5443	28.407	629	1.0012	-1.0000	1.4090	1.2629	815.7	1228	.722	1.3640	1.2732	819.0	1185	.724
1850	1.8712-3	104.9	8.5831	28.406	641	1.0016	-1.0000	1.4221	1.2601	826.1	1264	.721	1.3691	1.2719	829.9	1212	.724
1900	1.8219-3	176.3	8.6212	28.404	652	1.0022	-1.0001	1.4363	1.2573	836.2	1302	.719	1.3739	1.2707	840.7	1239	.723
1950	1.7750-3	248.5	8.6587	28.403	663	1.0030	-1.0001	1.4518	1.2543	846.2	1343	.717	1.3784	1.2696	851.3	1266	.722
2000	1.7305-3	321.6	8.6957	28.400	675	1.0039	-1.0001	1.4690	1.2512	855.9	1386	.715	1.3828	1.2686	861.8	1293	.722
2050	1.6881-3	395.5	8.7322	28.397	686	1.0052	-1.0002	1.4882	1.2479	865.4	1432	.712	1.3869	1.2676	872.3	1319	.721
2100	1.6477-3	470.4	8.7683	28.393	696	1.0067	-1.0002	1.5098	1.2444	874.8	1483	.709	1.3908	1.2667	882.6	1344	.721
2150	1.6091-3	546.5	8.8041	28.388	707	1.0087	-1.0003	1.5343	1.2407	883.9	1538	.705	1.3945	1.2659	892.8	1370	.720
2200	1.5722-3	623.9	8.8397	28.381	718	1.0112	-1.0004	1.5622	1.2367	892.8	1600	.701	1.3979	1.2651	903.0	1395	.719
2250	1.5368-3	702.8	8.8751	28.373	729	1.0143	-1.0005	1.5941	1.2325	901.5	1670	.695	1.4013	1.2644	913.1	1420	.719
2300	1.5028-3	783.4	8.9106	28.363	739	1.0181	-1.0006	1.6308	1.2281	909.9	1749	.689	1.4044	1.2638	923.1	1445	.718
2350	1.4702-3	866.0	8.9461	28.351	750	1.0228	-1.0008	1.6727	1.2234	918.2	1839	.682	1.4074	1.2632	933.1	1470	.718
2400	1.4388-3	950.8	8.9818	28.335	760	1.0284	-1.0010	1.7208	1.2185	926.3	1942	.673	1.4102	1.2628	943.0	1495	.717
2450	1.4085-3	1038.1	9.0178	28.317	770	1.0351	-1.0013	1.7755	1.2134	934.3	2060	.664	1.4128	1.2624	952.9	1519	.716
2500	1.3793-3	1128.4	9.0543	28.295	780	1.0431	-1.0016	1.8376	1.2083	942.1	2195	.653	1.4153	1.2620	962.9	1544	.715
2550	1.3510-3	1222.0	9.0914	28.268	790	1.0525	-1.0020	1.9076	1.2030	949.9	2351	.641	1.4176	1.2618	972.8	1568	.714
2600	1.3235-3	1319.3	9.1291	28.236	800	1.0633	-1.0025	1.9859	1.1978	957.6	2529	.628	1.4199	1.2616	982.8	1593	.713
2650	1.2968-3	1420.8	9.1678	28.199	810	1.0758	-1.0030	2.0726	1.1927	965.4	2731	.615	1.4219	1.2616	992.8	1617	.712
2700	1.2708-3	1526.7	9.2074	28.156	819	1.0899	-1.0037	2.1677	1.1878	973.2	2959	.600	1.4239	1.2617	1003.0	1642	.711
2750	1.2455-3	1637.7	9.2481	28.105	829	1.1056	-1.0044	2.2709	1.1832	981.1	3215	.586	1.4257	1.2618	1013.2	1666	.709
2800	1.2207-3	1754.0	9.2900	28.047	839	1.1231	-1.0053	2.3815	1.1788	989.2	3500	.571	1.4274	1.2621	1023.5	1691	.708
2850	1.1965-3	1875.9	9.3332	27.982	848	1.1421	-1.0062	2.4988	1.1749	997.5	3815	.555	1.4291	1.2625	1034.0	1716	.706
2900	1.1728-3	2003.9	9.3777	27.908	857	1.1626	-1.0073	2.6218	1.1714	1006.0	4160	.540	1.4306	1.2630	1044.6	1741	.705
2950	1.1495-3	2138.2	9.4236	27.825	866	1.1845	-1.0084	2.7494	1.1683	1014.8	4535	.525	1.4320	1.2637	1055.4	1766	.703
3000	1.1266-3	2278.9	9.4709	27.734	876	1.2076	-1.0097	2.8804	1.1656	1023.9	4939	.511	1.4334	1.2645	1066.4	1792	.701

TABLE 29.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.032523; EQUIV. RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K				J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
900	1.9234-2	-1146.5	7.1716	28.410	395	1.0000 -1.0000	1.2120	1.3183	589.3	652	.735	1.2117	1.3185	589.3	652 .735
950	1.8222-2	-1085.6	7.2375	28.410	410	1.0000 -1.0000	1.2250	1.3139	604.4	685	.734	1.2245	1.3141	604.4	685 .734
1000	1.7311-2	-1024.0	7.3006	28.410	425	1.0000 -1.0000	1.2374	1.3098	619.1	718	.733	1.2366	1.3100	619.2	717 .733
1050	1.6487-2	-961.8	7.3613	28.410	439	1.0000 -1.0000	1.2490	1.3060	633.5	750	.732	1.2477	1.3064	633.6	749 .732
1100	1.5737-2	-899.1	7.4196	28.410	453	1.0000 -1.0000	1.2602	1.3025	647.5	781	.731	1.2584	1.3031	647.7	780 .731
1150	1.5053-2	-835.8	7.4759	28.410	467	1.0000 -1.0000	1.2711	1.2991	661.2	812	.731	1.2685	1.2999	661.4	811 .731
1200	1.4426-2	-772.0	7.5302	28.410	481	1.0000 -1.0000	1.2817	1.2959	674.6	843	.731	1.2782	1.2969	674.9	841 .731
1250	1.3849-2	-707.7	7.5828	28.410	494	1.0000 -1.0000	1.2921	1.2928	687.7	874	.730	1.2875	1.2942	688.1	871 .730
1300	1.3316-2	-642.8	7.6336	28.410	507	1.0000 -1.0000	1.3023	1.2899	700.5	905	.730	1.2963	1.2916	701.0	901 .730
1350	1.2823-2	-577.4	7.6830	28.410	520	1.0000 -1.0000	1.3124	1.2870	713.1	936	.730	1.3046	1.2892	713.7	930 .729
1400	1.2365-2	-511.6	7.7309	28.410	533	1.0000 -1.0000	1.3223	1.2842	725.4	966	.729	1.3126	1.2869	726.1	959 .729
1450	1.1939-2	-445.2	7.7774	28.410	545	1.0000 -1.0000	1.3322	1.2815	737.4	997	.729	1.3202	1.2848	738.4	988 .729
1500	1.1541-2	-378.3	7.8228	28.410	558	1.0001 -1.0000	1.3421	1.2789	749.3	1028	.728	1.3275	1.2828	750.4	1017 .728
1550	1.1168-2	-311.0	7.8669	28.410	570	1.0001 -1.0000	1.3520	1.2763	760.9	1060	.728	1.3344	1.2809	762.3	1046 .728
1600	1.0819-2	-243.1	7.9100	28.410	582	1.0002 -1.0000	1.3619	1.2738	772.3	1091	.727	1.3409	1.2792	773.9	1074 .727
1650	1.0491-2	-174.8	7.9521	28.409	594	1.0002 -1.0000	1.3720	1.2713	783.5	1123	.726	1.3471	1.2775	785.4	1102 .726
1700	1.0183-2	-105.9	7.9932	28.409	606	1.0004 -1.0000	1.3822	1.2688	794.5	1155	.725	1.3531	1.2760	796.8	1130 .726
1750	9.8917-3	-36.6	8.0334	28.409	618	1.0005 -1.0000	1.3927	1.2664	805.4	1188	.724	1.3587	1.2745	808.0	1158 .725
1800	9.6167-3	33.3	8.0728	28.408	629	1.0007 -1.0000	1.4036	1.2639	816.0	1221	.723	1.3640	1.2732	819.0	1185 .724
1850	9.3566-3	103.8	8.1114	28.408	641	1.0010 -1.0000	1.4148	1.2614	826.4	1255	.722	1.3691	1.2719	829.9	1212 .724
1900	9.1101-3	174.8	8.1493	28.407	652	1.0013 -1.0000	1.4265	1.2589	836.7	1290	.721	1.3739	1.2707	840.6	1239 .723
1950	8.8762-3	246.5	8.1865	28.406	663	1.0017 -1.0001	1.4389	1.2564	846.8	1326	.720	1.3784	1.2696	851.3	1266 .722
2000	8.6538-3	318.7	8.2231	28.404	675	1.0022 -1.0001	1.4521	1.2538	856.7	1364	.718	1.3828	1.2685	861.8	1293 .722
2050	8.4422-3	391.7	8.2591	28.402	686	1.0029 -1.0001	1.4662	1.2511	866.5	1403	.717	1.3869	1.2675	872.2	1318 .721
2100	8.2406-3	465.4	8.2946	28.400	697	1.0038 -1.0001	1.4814	1.2484	876.1	1443	.715	1.3908	1.2666	882.4	1344 .721
2150	8.0481-3	539.8	8.3297	28.397	707	1.0048 -1.0002	1.4980	1.2456	885.5	1487	.713	1.3945	1.2658	892.6	1370 .720
2200	7.8642-3	615.2	8.3643	28.394	718	1.0061 -1.0002	1.5161	1.2427	894.7	1533	.710	1.3980	1.2650	902.7	1395 .720
2250	7.6883-3	691.5	8.3986	28.389	729	1.0077 -1.0003	1.5361	1.2397	903.8	1582	.707	1.4013	1.2642	912.7	1420 .719
2300	7.5197-3	768.8	8.4326	28.384	739	1.0097 -1.0003	1.5583	1.2365	912.7	1636	.704	1.4045	1.2635	922.6	1445 .718
2350	7.3580-3	847.4	8.4664	28.377	750	1.0120 -1.0004	1.5829	1.2333	921.5	1695	.700	1.4075	1.2629	932.5	1470 .718
2400	7.2027-3	927.2	8.5000	28.369	760	1.0148 -1.0005	1.6104	1.2299	930.1	1759	.696	1.4103	1.2623	942.3	1494 .717
2450	7.0533-3	1008.5	8.5335	28.360	770	1.0182 -1.0007	1.6410	1.2263	938.5	1830	.691	1.4130	1.2618	952.0	1519 .717
2500	6.9094-3	1091.3	8.5670	28.348	780	1.0222 -1.0008	1.6751	1.2227	946.8	1909	.685	1.4155	1.2614	961.7	1543 .716
2550	6.7707-3	1176.0	8.6006	28.335	791	1.0269 -1.0010	1.7131	1.2189	955.0	1997	.678	1.4179	1.2610	971.4	1568 .715
2600	6.6366-3	1262.7	8.6342	28.318	801	1.0323 -1.0013	1.7554	1.2150	963.1	2095	.671	1.4202	1.2606	981.0	1592 .714
2650	6.5070-3	1351.6	8.6681	28.299	810	1.0386 -1.0015	1.8022	1.2111	971.1	2204	.663	1.4224	1.2603	990.6	1616 .713
2700	6.3815-3	1443.0	8.7023	28.277	820	1.0459 -1.0019	1.8537	1.2072	979.0	2325	.654	1.4244	1.2601	1000.2	1640 .712
2750	6.2598-3	1537.1	8.7368	28.251	830	1.0541 -1.0022	1.9101	1.2033	986.8	2460	.644	1.4264	1.2600	1009.8	1664 .711
2800	6.1415-3	1634.1	8.7717	28.221	840	1.0633 -1.0027	1.9715	1.1994	994.7	2610	.634	1.4282	1.2599	1019.5	1688 .710
2850	6.0264-3	1734.3	8.8072	28.187	849	1.0736 -1.0032	2.0378	1.1957	1002.6	2775	.624	1.4299	1.2599	1029.2	1712 .709
2900	5.9144-3	1838.0	8.8433	28.148	859	1.0850 -1.0038	2.1087	1.1921	1010.5	2956	.613	1.4315	1.2600	1038.9	1736 .708
2950	5.8051-3	1945.3	8.8799	28.104	868	1.0974 -1.0044	2.1839	1.1887	1018.5	3154	.601	1.4331	1.2601	1048.7	1760 .707
3000	5.6984-3	2056.4	8.9173	28.055	877	1.1109 -1.0051	2.2629	1.1856	1026.7	3370	.589	1.4346	1.2604	1058.6	1784 .706

TABLE 29C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.032523; EQUIV.RATIO = 0.500; CHEM. EQUIV. RATIO = 0.5522;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	1.947-5	-2128.8	7.1974	28.410	1.0703	1.810-5	29.706	131	1.000	-1.000	0.9907	1.3937	279	177	.734	200
220	1.766-5	-2104.2	7.3146	28.410	1.5751	1.644-5	29.677	142	1.000	-1.000	0.9928	1.3931	293	193	.731	220
240	1.579-5	-2043.3	7.5768	28.410	5.8921	1.493-5	29.394	150	1.000	-1.000	1.0067	1.3908	307	205	.735	240
						PRESSURE = 0.10 ATM										
200	1.947-4	-2129.1	6.5971	28.410	1.0350	1.810-4	29.707	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	1.770-4	-2107.9	6.6978	28.410	1.0951	1.645-4	29.704	142	1.000	-1.000	0.9916	1.3933	293	193	.730	220
240	1.618-4	-2083.1	6.8056	28.410	1.5144	1.507-4	29.676	153	1.000	-1.000	0.9940	1.3925	306	209	.727	240
260	1.469-4	-2034.8	6.9976	28.410	3.9762	1.382-4	29.482	161	1.000	-1.000	1.0043	1.3905	319	222	.729	260
280	1.255-4	-1869.0	7.6078	28.410	12.5930	1.243-4	28.568	163	1.000	-1.000	1.0491	1.3839	336	228	.750	280
						PRESSURE = 1.00 ATM										
200	1.947-3	-2129.1	5.9979	28.410	1.0315	1.810-3	29.707	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	1.770-3	-2108.3	6.0969	28.410	1.0474	1.646-3	29.707	142	1.000	-1.000	0.9914	1.3933	293	193	.730	220
240	1.622-3	-2087.0	6.1897	28.410	1.0995	1.508-3	29.704	153	1.000	-1.000	0.9927	1.3927	306	209	.727	240
260	1.495-3	-2063.1	6.2851	28.410	1.3468	1.391-3	29.685	163	1.000	-1.000	0.9951	1.3917	318	224	.724	260
280	1.377-3	-2006.5	6.4935	28.410	2.1653	1.288-3	29.593	172	1.000	-1.000	1.0012	1.3901	331	238	.724	280
298	1.265-3	-1953.9	6.6750	28.410	3.8990	1.199-3	29.344	179	1.000	-1.000	1.0146	1.3875	342	249	.730	298
300	1.253-3	-1946.4	6.7000	28.410	4.1830	1.190-3	29.301	180	1.000	-1.000	1.0168	1.3871	344	250	.731	300
320	1.091-3	-1815.9	7.1190	28.410	9.8500	1.085-3	28.499	182	1.000	-1.000	1.0576	1.3809	359	256	.750	320
						PRESSURE = 10.00 ATM										
200	1.944-2	-2129.1	5.3988	28.410	1.0312	1.810-2	29.707	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	1.768-2	-2108.3	5.4976	28.410	1.0426	1.646-2	29.707	142	1.000	-1.000	0.9914	1.3933	293	193	.730	220
240	1.621-2	-2087.4	5.5890	28.410	1.0582	1.508-2	29.707	153	1.000	-1.000	0.9926	1.3927	306	209	.726	240
260	1.496-2	-2065.9	5.6748	28.410	1.0938	1.392-2	29.705	163	1.000	-1.000	0.9942	1.3918	318	224	.724	260
280	1.388-2	-2018.9	5.8478	28.410	1.3145	1.292-2	29.696	173	1.000	-1.000	0.9965	1.3907	330	239	.722	280
298	1.301-2	-1993.8	5.9346	28.410	1.4749	1.213-2	29.671	182	1.000	-1.000	0.9997	1.3895	341	252	.722	298
300	1.292-2	-1991.1	5.9438	28.410	1.4999	1.205-2	29.667	183	1.000	-1.000	1.0001	1.3893	342	254	.722	300
320	1.203-2	-1957.3	6.0526	28.410	1.9311	1.127-2	29.587	192	1.000	-1.000	1.0063	1.3875	353	267	.724	320
340	1.114-2	-1910.8	6.1933	28.410	2.8225	1.054-2	29.397	199	1.000	-1.000	1.0179	1.3848	365	278	.729	340
360	1.016-2	-1838.8	6.3985	28.410	4.5635	9.817-3	29.000	205	1.000	-1.000	1.0398	1.3807	377	288	.738	360
380	9.111-3	-1739.0	6.6689	28.410	1.0724	9.111-3	28.410	208	1.000	-1.000	1.0724	1.3754	391	298	.750	380
						PRESSURE = 50.00 ATM										
200	9.664-2	-2129.1	4.9801	28.410	1.0311	9.051-2	29.707	131	1.000	-1.000	0.9907	1.3938	279	177	.734	200
220	8.791-2	-2108.3	5.0789	28.410	1.0422	8.228-2	29.707	142	1.000	-1.000	0.9914	1.3933	293	193	.730	220
240	8.063-2	-2087.4	5.1701	28.410	1.0546	7.542-2	29.707	153	1.000	-1.000	0.9926	1.3927	306	209	.726	240
260	7.446-2	-2066.1	5.2551	28.410	1.0714	6.962-2	29.707	163	1.000	-1.000	0.9942	1.3918	318	224	.724	260
280	6.919-2	-2020.0	5.4249	28.410	1.2403	6.464-2	29.705	173	1.000	-1.000	0.9961	1.3908	330	239	.722	280
298	6.497-2	-1997.2	5.5037	28.410	1.2724	6.070-2	29.700	182	1.000	-1.000	0.9984	1.3897	341	253	.721	298
300	6.457-2	-1994.9	5.5116	28.410	1.2775	6.032-2	29.699	183	1.000	-1.000	0.9986	1.3895	342	254	.721	300
320	6.047-2	-1968.6	5.5964	28.410	1.3633	5.652-2	29.683	193	1.000	-1.000	1.0019	1.3881	353	267	.721	320
340	5.674-2	-1939.8	5.6836	28.410	1.5329	5.313-2	29.645	201	1.000	-1.000	1.0065	1.3863	364	281	.723	340
360	5.325-2	-1906.4	5.7790	28.410	1.8336	5.004-2	29.566	210	1.000	-1.000	1.0133	1.3841	374	293	.725	360
380	4.982-2	-1865.2	5.8903	28.410	2.3273	4.717-2	29.417	217	1.000	-1.000	1.0236	1.3814	385	305	.728	380
400	4.630-2	-1811.4	6.0279	28.410	3.1006	4.442-2	29.158	224	1.000	-1.000	1.0396	1.3780	396	317	.734	400
420	4.250-2	-1738.4	6.2060	28.410	4.2936	4.170-2	28.742	228	1.000	-1.000	1.0639	1.3734	408	328	.741	420

TABLE 30A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.048785; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.3851;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .09375; H2O= .14189; N2= .70836; O2= .04751; AR= .00850

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7296-3	8.6480-2	-2613.0	8.0132	7.3388	6.6643	5.9898	5.5184	1.0600	1.3819	284.5	114	154	.7870	200
210	1.6472-3	8.2362-2	-2602.4	8.0650	7.3905	6.7160	6.0416	5.5701	1.0609	1.3814	291.5	120	163	.7825	210
220	1.5724-3	7.8618-2	-2591.8	8.1143	7.4399	6.7654	6.0910	5.6195	1.0619	1.3809	298.3	125	171	.7784	220
230	1.5040-3	7.5200-2	-2581.1	8.1616	7.4871	6.8126	6.1382	5.6668	1.0630	1.3803	304.9	131	179	.7749	230
240	1.4413-3	7.2067-2	-2570.5	8.2068	7.5324	6.8579	6.1834	5.7120	1.0642	1.3798	311.4	136	188	.7718	240
250	1.3837-3	6.9184-2	-2559.8	8.2503	7.5758	6.9014	6.2269	5.7555	1.0655	1.3791	317.8	141	196	.7691	250
260	1.3305-3	6.6523-2	-2549.2	8.2921	7.6177	6.9432	6.2687	5.7973	1.0669	1.3784	324.0	147	204	.7669	260
270	1.2812-3	6.4059-2	-2538.5	8.3324	7.6580	6.9835	6.3090	5.8376	1.0684	1.3777	330.1	152	212	.7651	270
280	1.2354-3	6.1771-2	-2527.8	8.3713	7.6968	7.0224	6.3479	5.8765	1.0699	1.3770	336.1	157	219	.7637	280
290	1.1928-3	5.9641-2	-2517.1	8.4089	7.7344	7.0599	6.3855	5.9141	1.0716	1.3762	341.9	162	227	.7626	290
298	1.1602-3	5.8011-2	-2508.4	8.4386	7.7641	7.0897	6.4152	5.9438	1.0729	1.3755	346.6	166	233	.7619	298
300	1.1531-3	5.7653-2	-2506.4	8.4452	7.7708	7.0963	6.4218	5.9504	1.0733	1.3754	347.6	167	235	.7618	300
310	1.1159-3	5.5794-2	-2495.6	8.4804	7.8060	7.1315	6.4571	5.9856	1.0750	1.3745	353.3	171	242	.7616	310
320	1.0810-3	5.4050-2	-2484.9	8.5146	7.8401	7.1657	6.4912	6.0198	1.0769	1.3736	358.8	176	249	.7617	320
330	1.0482-3	5.2412-2	-2474.1	8.5478	7.8733	7.1988	6.5244	6.0530	1.0788	1.3727	364.3	181	256	.7618	330
340	1.0174-3	5.0871-2	-2463.3	8.5800	7.9055	7.2311	6.5566	6.0852	1.0808	1.3718	369.6	186	263	.7619	340
350	9.8834-4	4.9417-2	-2452.5	8.6114	7.9369	7.2624	6.5880	6.1166	1.0829	1.3708	374.9	190	270	.7619	350
360	9.6089-4	4.8044-2	-2441.7	8.6419	7.9674	7.2930	6.6185	6.1471	1.0850	1.3698	380.1	195	278	.7613	360
370	9.3492-4	4.6746-2	-2430.8	8.6717	7.9972	7.3227	6.6483	6.1768	1.0872	1.3688	385.2	199	285	.7605	370
380	9.1032-4	4.5516-2	-2419.9	8.7007	8.0262	7.3518	6.6773	6.2059	1.0894	1.3678	390.2	204	292	.7596	380
390	8.8697-4	4.4349-2	-2409.0	8.7290	8.0545	7.3801	6.7056	6.2342	1.0917	1.3667	395.1	208	300	.7587	390
400	8.6480-4	4.3240-2	-2398.1	8.7567	8.0822	7.4078	6.7333	6.2619	1.0941	1.3656	400.0	213	307	.7578	400
410	8.4371-4	4.2185-2	-2387.1	8.7837	8.1093	7.4348	6.7603	6.2889	1.0965	1.3645	404.8	217	314	.7574	410
420	8.2362-4	4.1181-2	-2376.1	8.8102	8.1357	7.4613	6.7868	6.3154	1.0989	1.3634	409.6	221	321	.7570	420
430	8.0447-4	4.0223-2	-2365.1	8.8361	8.1616	7.4871	6.8127	6.3413	1.1014	1.3623	414.2	225	328	.7567	430
440	7.8618-4	3.9309-2	-2354.1	8.8614	8.1870	7.5125	6.8380	6.3666	1.1040	1.3611	418.8	230	335	.7566	440
450	7.6871-4	3.8436-2	-2343.1	8.8862	8.2118	7.5373	6.8629	6.3914	1.1066	1.3600	423.4	234	342	.7564	450
460	7.5200-4	3.7600-2	-2332.0	8.9106	8.2361	7.5617	6.8872	6.4158	1.1092	1.3588	427.9	238	349	.7564	460
470	7.3600-4	3.6800-2	-2320.9	8.9345	8.2600	7.5856	6.9111	6.4397	1.1119	1.3577	432.3	242	356	.7564	470
480	7.2067-4	3.6033-2	-2309.7	8.9579	8.2835	7.6090	6.9345	6.4631	1.1146	1.3565	436.7	246	362	.7564	480
490	7.0596-4	3.5298-2	-2298.6	8.9809	8.3065	7.6320	6.9575	6.4861	1.1173	1.3553	441.0	250	369	.7565	490
500	6.9184-4	3.4592-2	-2287.4	9.0035	8.3291	7.6546	6.9802	6.5087	1.1201	1.3541	445.3	254	376	.7565	500
510	6.7827-4	3.3914-2	-2276.2	9.0257	8.3513	7.6768	7.0024	6.5309	1.1229	1.3529	449.6	258	383	.7563	510
520	6.6523-4	3.3262-2	-2264.9	9.0476	8.3731	7.6987	7.0242	6.5528	1.1258	1.3517	453.7	262	389	.7560	520
530	6.5268-4	3.2634-2	-2253.7	9.0690	8.3946	7.7201	7.0457	6.5742	1.1286	1.3505	457.9	265	396	.7557	530
540	6.4059-4	3.2030-2	-2242.4	9.0902	8.4157	7.7412	7.0668	6.5954	1.1315	1.3493	462.0	269	403	.7554	540
550	6.2895-4	3.1447-2	-2231.0	9.1110	8.4365	7.7620	7.0876	6.6161	1.1345	1.3481	466.0	273	410	.7551	550
560	6.1771-4	3.0886-2	-2219.7	9.1314	8.4570	7.7825	7.1080	6.6366	1.1374	1.3469	470.0	277	417	.7547	560
570	6.0688-4	3.0344-2	-2208.3	9.1516	8.4771	7.8027	7.1282	6.6568	1.1404	1.3456	474.0	281	424	.7543	570
580	5.9641-4	2.9821-2	-2196.9	9.1714	8.4970	7.8225	7.1481	6.6766	1.1433	1.3444	477.9	284	431	.7540	580
590	5.8631-4	2.9315-2	-2185.4	9.1910	8.5166	7.8421	7.1676	6.6962	1.1463	1.3432	481.8	288	438	.7535	590

TABLE 30A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.048785; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.3851;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .09375; H2O= .14189; N2= .70836; O2= .04751; AR= .00850

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.7653-4	2.8827-2	-2173.9	9.2103	8.5358	7.8614	7.1869	6.7155	1.1494	1.3420	485.7	292	445	.7531	600
610	5.6708-4	2.8354-2	-2162.4	9.2293	8.5549	7.8804	7.2059	6.7345	1.1524	1.3408	489.5	295	452	.7527	610
620	5.5794-4	2.7897-2	-2150.9	9.2481	8.5736	7.8992	7.2247	6.7533	1.1554	1.3396	493.2	299	459	.7522	620
630	5.4908-4	2.7454-2	-2139.3	9.2666	8.5921	7.9177	7.2432	6.7718	1.1585	1.3384	497.0	303	466	.7517	630
640	5.4050-4	2.7025-2	-2127.7	9.2849	8.6104	7.9359	7.2615	6.7901	1.1615	1.3372	500.7	306	474	.7513	640
650	5.3218-4	2.6609-2	-2116.1	9.3029	8.6284	7.9540	7.2795	6.8081	1.1646	1.3360	504.4	310	481	.7508	650
660	5.2412-4	2.6206-2	-2104.4	9.3207	8.6462	7.9718	7.2973	6.8259	1.1677	1.3348	508.0	313	488	.7503	660
670	5.1630-4	2.5815-2	-2092.7	9.3383	8.6638	7.9894	7.3149	6.8435	1.1708	1.3337	511.6	317	495	.7498	670
680	5.0871-4	2.5435-2	-2081.0	9.3557	8.6812	8.0067	7.3323	6.8608	1.1738	1.3325	515.2	320	502	.7493	680
690	5.0133-4	2.5067-2	-2069.3	9.3728	8.6984	8.0239	7.3494	6.8780	1.1769	1.3313	518.7	324	509	.7488	690
700	4.9417-4	2.4709-2	-2057.5	9.3898	8.7153	8.0408	7.3664	6.8950	1.1800	1.3302	522.2	327	516	.7484	700
710	4.8721-4	2.4361-2	-2045.7	9.4065	8.7321	8.0576	7.3831	6.9117	1.1831	1.3291	525.7	331	523	.7479	710
720	4.8044-4	2.4022-2	-2033.8	9.4231	8.7486	8.0742	7.3997	6.9283	1.1862	1.3279	529.2	334	530	.7474	720
730	4.7386-4	2.3693-2	-2021.9	9.4395	8.7650	8.0906	7.4161	6.9447	1.1892	1.3268	532.6	338	537	.7469	730
740	4.6746-4	2.3373-2	-2010.0	9.4557	8.7812	8.1068	7.4323	6.9609	1.1923	1.3257	536.1	341	545	.7465	740
750	4.6123-4	2.3061-2	-1998.1	9.4717	8.7972	8.1228	7.4483	6.9769	1.1954	1.3246	539.4	344	552	.7460	750
760	4.5516-4	2.2758-2	-1986.1	9.4876	8.8131	8.1386	7.4642	6.9928	1.1984	1.3235	542.8	348	559	.7456	760
770	4.4925-4	2.2462-2	-1974.1	9.5032	8.8288	8.1543	7.4799	7.0084	1.2014	1.3224	546.1	351	566	.7451	770
780	4.4349-4	2.2174-2	-1962.1	9.5188	8.8443	8.1698	7.4954	7.0240	1.2045	1.3213	549.4	354	573	.7447	780
790	4.3787-4	2.1894-2	-1950.0	9.5341	8.8597	8.1852	7.5107	7.0393	1.2075	1.3203	552.7	358	580	.7443	790
800	4.3240-4	2.1620-2	-1938.0	9.5493	8.8749	8.2004	7.5260	7.0545	1.2105	1.3192	556.0	361	587	.7439	800
810	4.2706-4	2.1353-2	-1925.8	9.5644	8.8899	8.2155	7.5410	7.0696	1.2135	1.3182	559.2	364	594	.7435	810
820	4.2185-4	2.1093-2	-1913.7	9.5793	8.9048	8.2304	7.5559	7.0845	1.2165	1.3172	562.5	367	601	.7432	820
830	4.1677-4	2.0839-2	-1901.5	9.5941	8.9196	8.2451	7.5707	7.0993	1.2194	1.3161	565.7	371	608	.7429	830
840	4.1181-4	2.0590-2	-1889.3	9.6087	8.9342	8.2598	7.5853	7.1139	1.2224	1.3151	568.8	374	615	.7426	840
850	4.0696-4	2.0348-2	-1877.1	9.6232	8.9487	8.2742	7.5998	7.1284	1.2253	1.3142	572.0	377	622	.7423	850
860	4.0223-4	2.0112-2	-1864.8	9.6375	8.9631	8.2886	7.6141	7.1427	1.2282	1.3132	575.2	380	629	.7420	860
870	3.9761-4	1.9880-2	-1852.5	9.6517	8.9773	8.3028	7.6284	7.1569	1.2311	1.3122	578.3	383	636	.7417	870
880	3.9309-4	1.9655-2	-1840.2	9.6658	8.9914	8.3169	7.6424	7.1710	1.2339	1.3113	581.4	386	643	.7414	880
890	3.8867-4	1.9434-2	-1827.8	9.6798	9.0053	8.3309	7.6564	7.1850	1.2368	1.3103	584.5	389	650	.7411	890
900	3.8436-4	1.9218-2	-1815.4	9.6936	9.0192	8.3447	7.6702	7.1988	1.2396	1.3094	587.5	393	657	.7409	900
910	3.8013-4	1.9007-2	-1803.0	9.7073	9.0329	8.3584	7.6839	7.2125	1.2424	1.3085	590.6	396	664	.7406	910
920	3.7600-4	1.8800-2	-1790.6	9.7209	9.0465	8.3720	7.6975	7.2261	1.2451	1.3076	593.6	399	671	.7403	920
930	3.7196-4	1.8598-2	-1778.1	9.7344	9.0599	8.3855	7.7110	7.2396	1.2479	1.3067	596.6	402	677	.7401	930
940	3.6800-4	1.8400-2	-1765.6	9.7478	9.0733	8.3988	7.7244	7.2529	1.2506	1.3059	599.6	405	684	.7399	940
950	3.6413-4	1.8206-2	-1753.1	9.7610	9.0865	8.4121	7.7376	7.2662	1.2533	1.3050	602.6	408	691	.7396	950
960	3.6033-4	1.8017-2	-1740.6	9.7741	9.0997	8.4252	7.7508	7.2793	1.2559	1.3042	605.6	411	698	.7394	960
970	3.5662-4	1.7831-2	-1728.0	9.7872	9.1127	8.4382	7.7638	7.2924	1.2585	1.3033	608.5	414	705	.7392	970
980	3.5298-4	1.7649-2	-1715.4	9.8001	9.1256	8.4512	7.7767	7.3053	1.2611	1.3025	611.5	417	711	.7389	980
990	3.4941-4	1.7471-2	-1702.8	9.8129	9.1384	8.4640	7.7895	7.3181	1.2637	1.3017	614.4	420	718	.7387	990

TABLE 30A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.048785; EQUIV. RATIO= 0.750; CHEM. EQUIV. RATIO= 0.7761; MW = 28.3851;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .09375; H2O= .14189; N2= .70836; O2= .04751; AR= .00850

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4592-4	1.7296-2	-1690.1	9.8256	9.1512	8.4767	7.8022	7.3308	1.2662	1.3009	617.3	423	725	.7385	1000
1050	3.2945-4	1.6472-2	-1626.5	9.8877	9.2132	8.5388	7.8643	7.3929	1.2782	1.2973	631.7	437	758	.7376	1050
1100	3.1447-4	1.5724-2	-1562.3	9.9474	9.2730	8.5985	7.9240	7.4526	1.2897	1.2939	645.7	452	791	.7368	1100
1150	3.0080-4	1.5040-2	-1497.5	10.0050	9.3305	8.6561	7.9816	7.5102	1.3006	1.2907	659.4	466	823	.7361	1150
1200	2.8827-4	1.4413-2	-1432.3	10.0606	9.3861	8.7116	8.0372	7.5658	1.3110	1.2877	672.8	479	855	.7354	1200
1250	2.7674-4	1.3837-2	-1366.4	10.1143	9.4398	8.7654	8.0909	7.6195	1.3210	1.2849	685.9	493	886	.7348	1250
1300	2.6609-4	1.3305-2	-1300.2	10.1663	9.4918	8.8174	8.1429	7.6715	1.3305	1.2823	698.8	506	918	.7342	1300
1350	2.5624-4	1.2812-2	-1233.4	10.2167	9.5422	8.8677	8.1933	7.7219	1.3395	1.2799	711.4	520	949	.7336	1350
1400	2.4709-4	1.2354-2	-1166.2	10.2655	9.5911	8.9166	8.2422	7.7707	1.3481	1.2776	723.8	532	979	.7330	1400
1450	2.3857-4	1.1928-2	-1098.6	10.3130	9.6385	8.9641	8.2896	7.8182	1.3562	1.2755	736.0	545	1010	.7324	1450
1500	2.3061-4	1.1531-2	-1030.6	10.3591	9.6846	9.0102	8.3357	7.8643	1.3640	1.2735	748.0	558	1040	.7318	1500
1550	2.2317-4	1.1159-2	-962.2	10.4039	9.7295	9.0550	8.3806	7.9091	1.3714	1.2716	759.8	570	1070	.7311	1550
1600	2.1620-4	1.0810-2	-893.5	10.4476	9.7731	9.0987	8.4242	7.9528	1.3785	1.2698	771.4	583	1100	.7303	1600
1650	2.0965-4	1.0482-2	-824.4	10.4901	9.8157	9.1412	8.4667	7.9953	1.3851	1.2682	782.9	595	1130	.7295	1650
1700	2.0348-4	1.0174-2	-755.0	10.5316	9.8571	9.1826	8.5082	8.0368	1.3915	1.2666	794.2	607	1159	.7287	1700
1750	1.9767-4	9.8834-3	-685.2	10.5720	9.8975	9.2231	8.5486	8.0772	1.3975	1.2652	805.3	619	1188	.7279	1750
1800	1.9218-4	9.6089-3	-615.2	10.6114	9.9370	9.2625	8.5881	8.1166	1.4033	1.2638	816.3	631	1217	.7271	1800
1850	1.8698-4	9.3492-3	-544.9	10.6500	9.9755	9.3010	8.6266	8.1552	1.4087	1.2625	827.1	642	1246	.7263	1850
1900	1.8206-4	9.1032-3	-474.3	10.6876	10.0131	9.3387	8.6642	8.1928	1.4138	1.2613	837.8	654	1274	.7255	1900
1950	1.7739-4	8.8697-3	-403.5	10.7244	10.0499	9.3755	8.7010	8.2296	1.4187	1.2602	848.4	665	1303	.7247	1950
2000	1.7296-4	8.6480-3	-332.5	10.7604	10.0859	9.4114	8.7370	8.2656	1.4234	1.2591	858.8	677	1331	.7239	2000
2050	1.6874-4	8.4371-3	-261.2	10.7956	10.1211	9.4466	8.7722	8.3008	1.4278	1.2581	869.2	688	1358	.7232	2050
2100	1.6472-4	8.2362-3	-189.7	10.8300	10.1556	9.4811	8.8066	8.3352	1.4320	1.2572	879.4	699	1385	.7225	2100
2150	1.6089-4	8.0447-3	-118.0	10.8638	10.1893	9.5148	8.8404	8.3690	1.4359	1.2563	889.5	710	1412	.7218	2150
2200	1.5724-4	7.8618-3	-46.1	10.8968	10.2224	9.5479	8.8734	8.4020	1.4397	1.2554	899.4	721	1439	.7210	2200
2250	1.5374-4	7.6871-3	26.0	10.9292	10.2548	9.5803	8.9058	8.4344	1.4433	1.2546	909.3	732	1466	.7203	2250
2300	1.5040-4	7.5200-3	98.2	10.9610	10.2865	9.6121	8.9376	8.4662	1.4467	1.2539	919.1	742	1493	.7195	2300
2350	1.4720-4	7.3600-3	170.6	10.9921	10.3177	9.6432	8.9687	8.4973	1.4499	1.2532	928.8	753	1519	.7188	2350
2400	1.4413-4	7.2067-3	243.2	11.0227	10.3482	9.6738	8.9993	8.5279	1.4530	1.2525	938.3	763	1545	.7180	2400
2450	1.4119-4	7.0596-3	315.9	11.0527	10.3782	9.7038	9.0293	8.5579	1.4559	1.2519	947.8	774	1571	.7172	2450
2500	1.3837-4	6.9184-3	388.8	11.0821	10.4077	9.7332	9.0587	8.5873	1.4587	1.2513	957.2	784	1597	.7164	2500
2550	1.3565-4	6.7827-3	461.8	11.1110	10.4366	9.7621	9.0877	8.6162	1.4614	1.2507	966.5	794	1623	.7154	2550
2600	1.3305-4	6.6523-3	534.9	11.1394	10.4650	9.7905	9.1161	8.6446	1.4639	1.2501	975.7	805	1649	.7144	2600
2650	1.3054-4	6.5268-3	608.2	11.1673	10.4929	9.8184	9.1440	8.6725	1.4664	1.2496	984.9	815	1675	.7134	2650
2700	1.2812-4	6.4059-3	681.6	11.1948	10.5203	9.8459	9.1714	8.7000	1.4687	1.2491	993.9	825	1700	.7125	2700
2750	1.2579-4	6.2895-3	755.1	11.2217	10.5473	9.8728	9.1984	8.7269	1.4710	1.2486	1002.9	835	1725	.7116	2750
2800	1.2354-4	6.1771-3	828.7	11.2483	10.5738	9.8993	9.2249	8.7535	1.4731	1.2482	1011.8	845	1750	.7107	2800
2850	1.2138-4	6.0688-3	902.4	11.2744	10.5999	9.9254	9.2510	8.7796	1.4752	1.2478	1020.6	854	1775	.7099	2850
2900	1.1928-4	5.9641-3	976.2	11.3000	10.6256	9.9511	9.2767	8.8052	1.4772	1.2473	1029.3	864	1800	.7091	2900
2950	1.1726-4	5.8631-3	1050.1	11.3253	10.6508	9.9764	9.3019	8.8305	1.4791	1.2469	1038.0	874	1825	.7083	2950
3000	1.1531-4	5.7653-3	1124.1	11.3502	10.6757	10.0013	9.3268	8.8554	1.4810	1.2466	1046.6	883	1849	.7075	3000

TABLE 30.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.048785; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8436-6	-1815.4	9.6936	28.385	393	1.0000	-1.0000	1.2398	1.3093	587.5	657	.741	1.2396	1.3094	587.5	657	.741
950	3.6413-6	-1753.1	9.7610	28.385	408	1.0000	-1.0000	1.2536	1.3049	602.6	691	.740	1.2533	1.3050	602.6	691	.740
1000	3.4592-6	-1690.1	9.8257	28.385	423	1.0000	-1.0000	1.2668	1.3008	617.3	725	.739	1.2662	1.3009	617.3	725	.739
1050	3.2945-6	-1626.4	9.8878	28.385	437	1.0000	-1.0000	1.2791	1.2970	631.6	759	.738	1.2782	1.2973	631.7	758	.738
1100	3.1447-6	-1562.2	9.9476	28.385	452	1.0000	-1.0000	1.2911	1.2935	645.6	791	.737	1.2897	1.2939	645.7	791	.737
1150	3.0080-6	-1497.3	10.0052	28.385	466	1.0000	-1.0000	1.3027	1.2901	659.2	824	.736	1.3006	1.2907	659.4	823	.736
1200	2.8827-6	-1431.9	10.0609	28.385	479	1.0000	-1.0000	1.3140	1.2869	672.6	857	.735	1.3110	1.2877	672.8	855	.735
1250	2.7673-6	-1365.9	10.1148	28.385	493	1.0001	-1.0000	1.3253	1.2838	685.6	889	.735	1.3210	1.2849	685.9	886	.735
1300	2.6609-6	-1299.4	10.1670	28.385	506	1.0001	-1.0000	1.3366	1.2807	698.4	922	.734	1.3305	1.2823	698.8	918	.734
1350	2.5623-6	-1232.2	10.2176	28.385	520	1.0002	-1.0000	1.3482	1.2777	710.8	955	.733	1.3395	1.2799	711.4	949	.734
1400	2.4708-6	-1164.5	10.2669	28.384	532	1.0004	-1.0000	1.3604	1.2747	723.0	990	.732	1.3481	1.2776	723.8	979	.733
1450	2.3856-6	-1096.2	10.3148	28.384	545	1.0007	-1.0000	1.3739	1.2714	734.9	1025	.731	1.3563	1.2755	736.0	1010	.732
1500	2.3060-6	-1027.1	10.3617	28.383	558	1.0011	-1.0000	1.3893	1.2679	746.4	1064	.729	1.3640	1.2735	748.0	1040	.732
1550	2.2315-6	-957.2	10.4075	28.382	570	1.0019	-1.0000	1.4078	1.2640	757.6	1107	.726	1.3714	1.2716	759.9	1070	.731
1600	2.1616-6	-886.3	10.4526	28.379	583	1.0031	-1.0001	1.4311	1.2593	768.3	1156	.721	1.3785	1.2699	771.5	1100	.730
1650	2.0958-6	-814.0	10.4970	28.376	595	1.0050	-1.0001	1.4616	1.2537	778.5	1216	.715	1.3851	1.2683	783.1	1130	.729
1700	2.0338-6	-739.9	10.5413	28.371	607	1.0080	-1.0002	1.5028	1.2468	788.1	1291	.707	1.3915	1.2668	794.4	1159	.729
1750	1.9751-6	-663.4	10.5856	28.362	619	1.0125	-1.0003	1.5591	1.2383	797.0	1390	.694	1.3975	1.2655	805.7	1189	.728
1800	1.9194-6	-583.7	10.6305	28.350	631	1.0193	-1.0005	1.6364	1.2280	805.2	1523	.678	1.4031	1.2642	816.9	1218	.727
1850	1.8663-6	-499.3	10.6767	28.331	642	1.0292	-1.0008	1.7422	1.2160	812.5	1705	.656	1.4085	1.2632	828.1	1247	.726
1900	1.8154-6	-408.8	10.7250	28.304	653	1.0433	-1.0012	1.8849	1.2025	819.2	1954	.630	1.4135	1.2623	839.4	1275	.724
1950	1.7665-6	-310.1	10.7763	28.266	665	1.0628	-1.0019	2.0739	1.1881	825.5	2293	.601	1.4182	1.2617	850.7	1304	.723
2000	1.7190-6	-200.5	10.8317	28.212	676	1.0891	-1.0027	2.3175	1.1739	831.8	2746	.570	1.4226	1.2613	862.2	1333	.721
2050	1.6728-6	-77.3	10.8926	28.138	686	1.1233	-1.0039	2.6226	1.1604	838.4	3339	.539	1.4267	1.2612	874.0	1361	.719
2100	1.6273-6	62.8	10.9601	28.041	697	1.1662	-1.0054	2.9926	1.1485	845.7	4098	.509	1.4305	1.2615	886.3	1391	.717
2150	1.5823-6	223.1	11.0355	27.915	707	1.2184	-1.0073	3.4281	1.1385	853.8	5045	.480	1.4339	1.2622	899.0	1420	.713
2200	1.5375-6	406.7	11.1199	27.756	717	1.2801	-1.0097	3.9272	1.1303	863.1	6200	.454	1.4371	1.2633	912.4	1451	.710
2250	1.4928-6	616.8	11.2143	27.561	726	1.3514	-1.0125	4.4873	1.1239	873.4	7578	.430	1.4401	1.2650	926.6	1484	.704
2300	1.4478-6	856.4	11.3196	27.325	735	1.4323	-1.0159	5.1068	1.1190	885.0	9185	.409	1.4430	1.2672	941.7	1519	.698
2350	1.4026-6	1128.5	11.4366	27.046	744	1.5229	-1.0198	5.7847	1.1154	897.7	11015	.391	1.4458	1.2700	957.9	1557	.691
2400	1.3569-6	1435.8	11.5660	26.722	752	1.6228	-1.0243	6.5191	1.1129	911.6	13037	.376	1.4486	1.2735	975.2	1599	.681
2450	1.3108-6	1781.2	11.7084	26.352	761	1.7308	-1.0293	7.3036	1.1112	926.8	15187	.366	1.4516	1.2777	993.8	1646	.671
2500	1.2643-6	2166.8	11.8642	25.937	768	1.8442	-1.0349	8.1219	1.1103	943.3	17361	.360	1.4547	1.2826	1013.9	1699	.658
2550	1.2176-6	2593.4	12.0331	25.478	776	1.9581	-1.0407	8.9421	1.1102	961.2	19412	.358	1.4582	1.2883	1035.4	1757	.644
2600	1.1710-6	3060.1	12.2144	24.982	784	2.0650	-1.0464	9.7126	1.1107	980.4	21159	.360	1.4619	1.2948	1058.5	1822	.629
2650	1.1248-6	3562.7	12.4058	24.459	792	2.1547	-1.0517	10.3625	1.1119	1000.8	22408	.366	1.4659	1.3019	1083.0	1892	.613
2700	1.0797-6	4093.0	12.6040	23.921	799	2.2163	-1.0558	10.8096	1.1138	1022.4	22991	.376	1.4701	1.3096	1108.6	1965	.598
2750	1.0364-6	4639.0	12.8044	23.387	807	2.2400	-1.0582	10.9785	1.1164	1044.7	22810	.389	1.4745	1.3177	1135.0	2041	.583
2800	9.9550-7	5185.4	13.0013	22.873	815	2.2206	-1.0587	10.8229	1.1198	1067.6	21874	.403	1.4789	1.3259	1161.7	2116	.570
2850	9.5760-7	5715.9	13.1891	22.395	824	2.1591	-1.0569	10.3455	1.1240	1090.6	20305	.420	1.4831	1.3339	1188.0	2188	.558
2900	9.2304-7	6215.5	13.3629	21.965	832	2.0634	-1.0534	9.6006	1.1293	1113.4	18310	.436	1.4872	1.3414	1213.5	2257	.548
2950	8.9192-7	6673.0	13.5193	21.591	841	1.9453	-1.0485	8.6791	1.1357	1135.8	16125	.453	1.4909	1.3482	1237.6	2320	.540
3000	8.6415-7	7082.1	13.6569	21.273	850	1.8179	-1.0428	7.6815	1.1433	1157.8	13957	.468	1.4942	1.3542	1260.1	2379	.534

TABLE 30.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.048785; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO ◘ 0.7761; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	3.8436-5	-1815.4	9.0192	28.385	393	1.0000	-1.0000	1.2398	1.3093	587.5	657 .741	1.2396	1.3094	587.5	657 .741
950	3.6413-5	-1753.1	9.0866	28.385	408	1.0000	-1.0000	1.2536	1.3049	602.6	691 .740	1.2533	1.3050	602.6	691 .740
1000	3.4592-5	-1690.1	9.1512	28.385	423	1.0000	-1.0000	1.2668	1.3008	617.3	725 .739	1.2662	1.3009	617.3	725 .739
1050	3.2945-5	-1626.4	9.2133	28.385	437	1.0000	-1.0000	1.2791	1.2970	631.6	759 .738	1.2782	1.2973	631.7	758 .738
1100	3.1447-5	-1562.2	9.2731	28.385	452	1.0000	-1.0000	1.2910	1.2935	645.6	791 .737	1.2897	1.2939	645.7	791 .737
1150	3.0080-5	-1497.3	9.3307	28.385	466	1.0000	-1.0000	1.3025	1.2901	659.2	824 .736	1.3006	1.2907	659.4	823 .736
1200	2.8827-5	-1431.9	9.3864	28.385	479	1.0000	-1.0000	1.3137	1.2870	672.6	856 .735	1.3110	1.2877	672.8	855 .735
1250	2.7674-5	-1366.0	9.4403	28.385	493	1.0000	-1.0000	1.3247	1.2839	685.6	889 .735	1.3210	1.2849	685.9	886 .735
1300	2.6609-5	-1299.4	9.4924	28.385	506	1.0001	-1.0000	1.3356	1.2810	698.4	921 .734	1.3305	1.2823	698.8	918 .734
1350	2.5624-5	-1232.4	9.5430	28.385	520	1.0001	-1.0000	1.3464	1.2781	710.9	954 .733	1.3395	1.2799	711.4	949 .734
1400	2.4708-5	-1164.8	9.5922	28.385	532	1.0002	-1.0000	1.3574	1.2753	723.2	987 .733	1.3481	1.2776	723.8	979 .733
1450	2.3856-5	-1096.6	9.6400	28.384	545	1.0003	-1.0000	1.3688	1.2725	735.2	1020 .732	1.3563	1.2755	736.0	1010 .732
1500	2.3060-5	-1027.9	9.6866	28.384	558	1.0005	-1.0000	1.3808	1.2696	746.9	1055 .731	1.3640	1.2735	748.0	1040 .732
1550	2.2316-5	-958.5	9.7321	28.383	570	1.0008	-1.0000	1.3939	1.2666	758.3	1091 .729	1.3714	1.2716	759.8	1070 .731
1600	2.1618-5	-888.5	9.7766	28.383	583	1.0013	-1.0000	1.4087	1.2634	769.5	1129 .727	1.3785	1.2699	771.5	1100 .730
1650	2.0962-5	-817.6	9.8202	28.381	595	1.0021	-1.0000	1.4259	1.2598	780.4	1171 .724	1.3851	1.2682	783.0	1130 .729
1700	2.0344-5	-745.8	9.8631	28.379	607	1.0032	-1.0001	1.4468	1.2558	790.9	1218 .721	1.3915	1.2667	794.3	1159 .729
1750	1.9760-5	-672.9	9.9054	28.376	619	1.0048	-1.0001	1.4727	1.2512	801.0	1272 .716	1.3975	1.2653	805.5	1188 .728
1800	1.9208-5	-598.4	9.9473	28.371	631	1.0072	-1.0002	1.5057	1.2457	810.6	1337 .710	1.4032	1.2640	816.6	1217 .727
1850	1.8685-5	-522.1	9.9891	28.364	642	1.0106	-1.0003	1.5482	1.2393	819.8	1417 .702	1.4086	1.2628	827.5	1246 .726
1900	1.8187-5	-443.4	10.0311	28.354	654	1.0155	-1.0004	1.6033	1.2318	828.4	1517 .691	1.4137	1.2617	838.4	1275 .725
1950	1.7712-5	-361.5	10.0736	28.341	665	1.0223	-1.0006	1.6747	1.2232	836.5	1645 .677	1.4185	1.2607	849.3	1303 .724
2000	1.7257-5	-275.6	10.1172	28.321	676	1.0316	-1.0009	1.7668	1.2134	844.1	1809 .661	1.4231	1.2599	860.1	1331 .723
2050	1.6821-5	-184.4	10.1622	28.295	687	1.0441	-1.0014	1.8838	1.2029	851.2	2019 .641	1.4273	1.2592	870.9	1359 .722
2100	1.6400-5	-86.7	10.2093	28.260	698	1.0603	-1.0019	2.0302	1.1919	858.1	2288 .619	1.4313	1.2587	881.9	1387 .721
2150	1.5992-5	19.1	10.2591	28.213	709	1.0810	-1.0026	2.2095	1.1809	865.0	2628 .596	1.4350	1.2584	892.9	1414 .719
2200	1.5595-5	134.8	10.3122	28.153	719	1.1066	-1.0036	2.4239	1.1704	872.0	3050 .572	1.4385	1.2584	904.2	1442 .718
2250	1.5207-5	262.1	10.3694	28.076	730	1.1374	-1.0047	2.6738	1.1608	879.5	3564 .547	1.4416	1.2585	915.7	1470 .716
2300	1.4826-5	402.8	10.4313	27.980	740	1.1737	-1.0062	2.9580	1.1524	887.5	4180 .523	1.4445	1.2590	927.6	1498 .713
2350	1.4450-5	558.4	10.4982	27.864	749	1.2152	-1.0078	3.2738	1.1451	896.1	4906 .500	1.4472	1.2597	939.9	1527 .710
2400	1.4078-5	730.6	10.5707	27.725	759	1.2618	-1.0098	3.6180	1.1392	905.5	5749 .478	1.4497	1.2608	952.6	1556 .707
2450	1.3709-5	920.7	10.6491	27.561	768	1.3134	-1.0121	3.9877	1.1344	915.6	6713 .456	1.4519	1.2623	965.9	1587 .703
2500	1.3343-5	1129.8	10.7335	27.372	777	1.3697	-1.0146	4.3807	1.1306	926.6	7800 .437	1.4541	1.2641	979.8	1619 .698
2550	1.2978-5	1359.1	10.8243	27.156	786	1.4307	-1.0175	4.7957	1.1276	938.3	9010 .418	1.4562	1.2662	994.3	1653 .692
2600	1.2615-5	1609.7	10.9217	26.913	795	1.4962	-1.0207	5.2319	1.1255	950.8	10331 .403	1.4582	1.2688	1009.5	1690 .686
2650	1.2252-5	1882.6	11.0256	26.642	803	1.5660	-1.0242	5.6880	1.1240	964.1	11744 .389	1.4603	1.2718	1025.6	1730 .678
2700	1.1891-5	2178.8	11.1363	26.344	812	1.6394	-1.0281	6.1611	1.1230	978.3	13217 .378	1.4624	1.2752	1042.4	1773 .669
2750	1.1530-5	2498.9	11.2538	26.019	820	1.7154	-1.0323	6.6448	1.1226	993.2	14703 .370	1.4647	1.2791	1060.2	1820 .660
2800	1.1172-5	2843.3	11.3779	25.668	828	1.7920	-1.0367	7.1280	1.1227	1009.1	16143 .366	1.4671	1.2834	1078.9	1870 .649
2850	1.0816-5	3211.4	11.5082	25.294	836	1.8665	-1.0411	7.5940	1.1232	1025.8	17462 .363	1.4696	1.2881	1098.5	1925 .638
2900	1.0464-5	3602.0	11.6440	24.900	844	1.9351	-1.0454	8.0203	1.1242	1043.4	18583 .364	1.4723	1.2933	1119.1	1984 .626
2950	1.0118-5	4012.3	11.7843	24.493	852	1.9937	-1.0494	8.3798	1.1256	1061.7	19427 .367	1.4752	1.2989	1140.5	2046 .614
3000	9.7809-6	4438.4	11.9275	24.078	860	2.0378	-1.0528	8.6437	1.1275	1080.8	19929 .373	1.4783	1.3048	1162.6	2111 .602

TABLE 30.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.048785; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8436-4	-1815.4	8.3447	28.385	393	1.0000	-1.0000	1.2398	1.3093	587.5	657	.741	1.2396	1.3094	587.5	657	.741
950	3.6413-4	-1753.1	8.4121	28.385	408	1.0000	-1.0000	1.2536	1.3049	602.6	691	.740	1.2533	1.3050	602.6	691	.740
1000	3.4592-4	-1690.1	8.4768	28.385	423	1.0000	-1.0000	1.2668	1.3008	617.3	725	.739	1.2662	1.3009	617.3	725	.739
1050	3.2945-4	-1626.4	8.5389	28.385	437	1.0000	-1.0000	1.2791	1.2970	631.6	759	.738	1.2782	1.2973	631.7	758	.738
1100	3.1447-4	-1562.2	8.5986	28.385	452	1.0000	-1.0000	1.2910	1.2935	645.6	791	.737	1.2897	1.2939	645.7	791	.737
1150	3.0080-4	-1497.3	8.6563	28.385	466	1.0000	-1.0000	1.3024	1.2902	659.2	824	.736	1.3006	1.2907	659.4	823	.736
1200	2.8827-4	-1431.9	8.7119	28.385	479	1.0000	-1.0000	1.3136	1.2870	672.6	856	.735	1.3110	1.2877	672.8	855	.735
1250	2.7674-4	-1366.0	8.7658	28.385	493	1.0000	-1.0000	1.3244	1.2840	685.7	889	.735	1.3210	1.2849	685.9	886	.735
1300	2.6609-4	-1299.5	8.8179	28.385	506	1.0000	-1.0000	1.3351	1.2811	698.4	921	.734	1.3305	1.2823	698.8	918	.734
1350	2.5624-4	-1232.5	8.8685	28.385	520	1.0001	-1.0000	1.3456	1.2783	711.0	953	.734	1.3395	1.2799	711.4	949	.734
1400	2.4708-4	-1164.9	8.9176	28.385	532	1.0001	-1.0000	1.3560	1.2756	723.3	985	.733	1.3481	1.2776	723.8	979	.733
1450	2.3856-4	-1096.9	8.9654	28.385	545	1.0002	-1.0000	1.3664	1.2730	735.3	1018	.732	1.3563	1.2755	736.0	1010	.732
1500	2.3061-4	-1028.3	9.0119	28.385	558	1.0003	-1.0000	1.3770	1.2704	747.1	1051	.731	1.3640	1.2735	748.0	1040	.732
1550	2.2317-4	-959.2	9.0572	28.384	570	1.0004	-1.0000	1.3880	1.2678	758.7	1084	.730	1.3714	1.2716	759.8	1070	.731
1600	2.1619-4	-889.5	9.1015	28.384	583	1.0006	-1.0000	1.3995	1.2651	770.0	1119	.729	1.3785	1.2698	771.5	1100	.730
1650	2.0963-4	-819.2	9.1447	28.383	595	1.0009	-1.0000	1.4118	1.2624	781.1	1154	.728	1.3851	1.2682	782.9	1130	.730
1700	2.0346-4	-748.3	9.1871	28.382	607	1.0014	-1.0000	1.4254	1.2595	792.0	1192	.726	1.3915	1.2667	794.2	1159	.729
1750	1.9764-4	-676.6	9.2286	28.381	619	1.0020	-1.0000	1.4407	1.2565	802.6	1232	.724	1.3975	1.2652	805.4	1188	.728
1800	1.9214-4	-604.2	9.2695	28.379	631	1.0029	-1.0001	1.4584	1.2531	812.9	1276	.721	1.4032	1.2639	816.4	1217	.727
1850	1.8692-4	-530.7	9.3097	28.376	642	1.0042	-1.0001	1.4793	1.2494	823.0	1324	.718	1.4087	1.2626	827.3	1246	.726
1900	1.8198-4	-456.2	9.3495	28.372	654	1.0060	-1.0002	1.5044	1.2453	832.7	1379	.713	1.4138	1.2615	838.1	1274	.725
1950	1.7728-4	-380.2	9.3889	28.367	665	1.0084	-1.0002	1.5351	1.2406	842.1	1442	.708	1.4187	1.2604	848.8	1303	.725
2000	1.7281-4	-302.5	9.4282	28.360	677	1.0117	-1.0003	1.5727	1.2353	851.1	1517	.701	1.4233	1.2594	859.3	1331	.724
2050	1.6853-4	-222.8	9.4676	28.350	688	1.0161	-1.0005	1.6191	1.2293	859.7	1606	.693	1.4276	1.2585	869.9	1358	.723
2100	1.6445-4	-140.4	9.5073	28.337	699	1.0219	-1.0007	1.6763	1.2226	868.0	1714	.683	1.4317	1.2578	880.3	1386	.722
2150	1.6053-4	-54.9	9.5475	28.320	710	1.0294	-1.0009	1.7464	1.2154	875.9	1845	.672	1.4356	1.2571	890.8	1413	.721
2200	1.5676-4	34.4	9.5886	28.298	720	1.0390	-1.0013	1.8314	1.2076	883.5	2005	.658	1.4392	1.2565	901.2	1440	.720
2250	1.5312-4	128.5	9.6309	28.270	731	1.0509	-1.0017	1.9334	1.1995	890.9	2199	.643	1.4426	1.2561	911.7	1467	.719
2300	1.4960-4	228.1	9.6747	28.234	741	1.0656	-1.0023	2.0538	1.1912	898.2	2432	.626	1.4457	1.2558	922.3	1494	.718
2350	1.4618-4	334.2	9.7203	28.189	752	1.0832	-1.0030	2.1934	1.1832	905.6	2710	.608	1.4487	1.2557	932.9	1520	.716
2400	1.4286-4	447.7	9.7681	28.134	762	1.1039	-1.0038	2.3521	1.1755	913.1	3037	.590	1.4514	1.2557	943.7	1547	.715
2450	1.3961-4	569.7	9.8184	28.067	772	1.1277	-1.0048	2.5290	1.1685	920.9	3416	.571	1.4539	1.2559	954.7	1574	.713
2500	1.3643-4	700.9	9.8714	27.987	782	1.1545	-1.0059	2.7224	1.1622	929.1	3851	.553	1.4562	1.2563	966.0	1601	.711
2550	1.3330-4	842.2	9.9274	27.893	791	1.1841	-1.0072	2.9299	1.1567	937.6	4343	.534	1.4583	1.2569	977.4	1629	.708
2600	1.3023-4	994.1	9.9864	27.785	801	1.2163	-1.0087	3.1490	1.1520	946.7	4894	.515	1.4603	1.2577	989.2	1657	.706
2650	1.2721-4	1157.2	10.0485	27.662	810	1.2509	-1.0103	3.3775	1.1480	956.3	5506	.497	1.4620	1.2588	1001.3	1686	.703
2700	1.2423-4	1332.0	10.1138	27.523	819	1.2877	-1.0121	3.6135	1.1448	966.3	6179	.479	1.4637	1.2601	1013.8	1715	.699
2750	1.2128-4	1518.7	10.1823	27.369	828	1.3264	-1.0141	3.8557	1.1423	976.9	6914	.462	1.4653	1.2615	1026.6	1745	.695
2800	1.1838-4	1717.6	10.2540	27.198	837	1.3671	-1.0162	4.1032	1.1403	987.9	7708	.445	1.4668	1.2633	1039.9	1777	.691
2850	1.1550-4	1929.1	10.3289	27.012	846	1.4096	-1.0185	4.3557	1.1388	999.5	8559	.430	1.4683	1.2652	1053.5	1810	.686
2900	1.1266-4	2153.3	10.4068	26.810	854	1.4540	-1.0210	4.6131	1.1378	1011.6	9459	.417	1.4698	1.2674	1067.6	1844	.681
2950	1.0986-4	2390.5	10.4879	26.592	863	1.5000	-1.0237	4.8749	1.1371	1024.1	10399	.404	1.4713	1.2699	1082.2	1881	.675
3000	1.0708-4	2640.8	10.5721	26.360	871	1.5475	-1.0266	5.1401	1.1368	1037.2	11365	.394	1.4728	1.2725	1097.3	1920	.668

TABLE 30.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.048785; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN	CP	GAM	VS	COND PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K	J/G K		M/S	MICRO W/CM K
900	3.8436-3	-1815.4	7.6703	28.385	393	1.0000	-1.0000	1.2398	1.3093	587.5	657 .741	1.2396	1.3094	587.5	657 .741
950	3.6413-3	-1753.1	7.7377	28.385	408	1.0000	-1.0000	1.2536	1.3049	602.6	691 .740	1.2533	1.3050	602.6	691 .740
1000	3.4592-3	-1690.1	7.8023	28.385	423	1.0000	-1.0000	1.2668	1.3008	617.3	725 .739	1.2662	1.3009	617.3	725 .739
1050	3.2945-3	-1626.4	7.8644	28.385	437	1.0000	-1.0000	1.2791	1.2970	631.6	758 .738	1.2782	1.2973	631.7	758 .738
1100	3.1447-3	-1562.2	7.9242	28.385	452	1.0000	-1.0000	1.2909	1.2935	645.6	791 .737	1.2897	1.2939	645.7	791 .737
1150	3.0080-3	-1497.3	7.9818	28.385	466	1.0000	-1.0000	1.3024	1.2902	659.2	824 .736	1.3006	1.2907	659.4	823 .736
1200	2.8827-3	-1431.9	8.0375	28.385	479	1.0000	-1.0000	1.3135	1.2870	672.6	856 .735	1.3110	1.2877	672.8	855 .735
1250	2.7674-3	-1366.0	8.0913	28.385	493	1.0000	-1.0000	1.3243	1.2840	685.7	888 .735	1.3210	1.2849	685.9	886 .735
1300	2.6609-3	-1299.5	8.1435	28.385	506	1.0000	-1.0000	1.3348	1.2811	698.5	921 .734	1.3305	1.2823	698.8	918 .734
1350	2.5624-3	-1232.5	8.1940	28.385	520	1.0000	-1.0000	1.3451	1.2784	711.0	953 .734	1.3395	1.2799	711.4	949 .734
1400	2.4709-3	-1165.0	8.2431	28.385	532	1.0000	-1.0000	1.3552	1.2758	723.3	984 .733	1.3481	1.2776	723.8	979 .733
1450	2.3856-3	-1097.0	8.2909	28.385	545	1.0001	-1.0000	1.3653	1.2732	735.4	1017 .732	1.3563	1.2755	736.0	1010 .732
1500	2.3061-3	-1028.5	8.3373	28.385	558	1.0001	-1.0000	1.3752	1.2707	747.2	1049 .732	1.3640	1.2735	748.0	1040 .732
1550	2.2317-3	-959.5	8.3826	28.385	570	1.0002	-1.0000	1.3852	1.2683	758.8	1081 .731	1.3714	1.2716	759.8	1070 .731
1600	2.1620-3	-889.9	8.4267	28.385	583	1.0003	-1.0000	1.3953	1.2659	770.3	1114 .730	1.3785	1.2698	771.5	1100 .730
1650	2.0964-3	-819.9	8.4698	28.384	595	1.0004	-1.0000	1.4057	1.2635	781.5	1148 .729	1.3851	1.2682	782.9	1130 .730
1700	2.0347-3	-749.4	8.5119	28.384	607	1.0006	-1.0000	1.4165	1.2611	792.5	1182 .728	1.3915	1.2666	794.2	1159 .729
1750	1.9765-3	-678.3	8.5532	28.383	619	1.0009	-1.0000	1.4278	1.2587	803.3	1217 .726	1.3975	1.2652	805.3	1188 .728
1800	1.9216-3	-606.6	8.5935	28.382	631	1.0013	-1.0000	1.4399	1.2562	813.9	1253 .725	1.4032	1.2638	816.3	1217 .727
1850	1.8696-3	-534.3	8.6332	28.381	642	1.0018	-1.0000	1.4530	1.2536	824.3	1291 .723	1.4087	1.2626	827.2	1246 .726
1900	1.8203-3	-461.3	8.6721	28.379	654	1.0025	-1.0001	1.4676	1.2509	834.4	1331 .721	1.4138	1.2614	837.9	1274 .725
1950	1.7735-3	-387.5	8.7104	28.377	665	1.0034	-1.0001	1.4840	1.2480	844.4	1374 .719	1.4187	1.2603	848.6	1303 .725
2000	1.7289-3	-312.8	8.7482	28.374	677	1.0047	-1.0001	1.5027	1.2448	854.1	1421 .716	1.4233	1.2592	859.1	1331 .724
2050	1.6865-3	-237.1	8.7856	28.371	688	1.0063	-1.0002	1.5244	1.2414	863.6	1472 .713	1.4277	1.2583	869.5	1358 .723
2100	1.6461-3	-160.3	8.8226	28.366	699	1.0084	-1.0003	1.5497	1.2377	872.9	1529 .709	1.4318	1.2574	879.8	1385 .722
2150	1.6075-3	-82.1	8.8594	28.359	710	1.0111	-1.0003	1.5793	1.2337	881.8	1593 .704	1.4358	1.2566	890.0	1413 .722
2200	1.5705-3	-2.3	8.8961	28.351	721	1.0146	-1.0005	1.6143	1.2293	890.6	1667 .698	1.4395	1.2559	900.2	1440 .721
2250	1.5350-3	79.4	8.9329	28.340	731	1.0189	-1.0006	1.6556	1.2245	899.1	1752 .691	1.4430	1.2552	910.3	1466 .720
2300	1.5009-3	163.4	8.9698	28.327	742	1.0243	-1.0008	1.7040	1.2194	907.3	1850 .684	1.4463	1.2546	920.3	1493 .719
2350	1.4681-3	250.0	9.0070	28.310	753	1.0310	-1.0011	1.7607	1.2139	915.3	1964 .675	1.4494	1.2541	930.4	1519 .718
2400	1.4365-3	339.6	9.0448	28.289	763	1.0390	-1.0014	1.8265	1.2082	923.2	2096 .665	1.4523	1.2537	940.4	1546 .717
2450	1.4059-3	432.8	9.0832	28.264	773	1.0486	-1.0018	1.9020	1.2023	930.9	2249 .654	1.4550	1.2534	950.5	1572 .716
2500	1.3763-3	530.0	9.1224	28.233	783	1.0599	-1.0022	1.9877	1.1965	938.5	2425 .642	1.4576	1.2532	960.5	1598 .715
2550	1.3475-3	631.7	9.1627	28.196	793	1.0730	-1.0028	2.0836	1.1907	946.2	2626 .629	1.4600	1.2531	970.7	1624 .713
2600	1.3195-3	738.5	9.2042	28.152	803	1.0879	-1.0034	2.1893	1.1851	954.0	2854 .616	1.4622	1.2531	980.9	1650 .712
2650	1.2923-3	850.8	9.2470	28.101	813	1.1045	-1.0042	2.3042	1.1799	961.8	3109 .603	1.4642	1.2532	991.3	1677 .710
2700	1.2657-3	969.1	9.2912	28.041	823	1.1228	-1.0050	2.4270	1.1751	969.9	3391 .589	1.4661	1.2535	1001.8	1703 .708
2750	1.2396-3	1093.6	9.3369	27.973	832	1.1426	-1.0060	2.5563	1.1707	978.2	3702 .575	1.4679	1.2539	1012.4	1729 .707
2800	1.2141-3	1224.8	9.3842	27.896	842	1.1638	-1.0070	2.6907	1.1669	986.8	4041 .560	1.4695	1.2544	1023.2	1755 .705
2850	1.1891-3	1362.7	9.4330	27.810	851	1.1861	-1.0081	2.8285	1.1636	995.7	4408 .546	1.4710	1.2551	1034.1	1782 .702
2900	1.1646-3	1507.7	9.4834	27.714	860	1.2095	-1.0093	2.9685	1.1608	1004.9	4802 .532	1.4724	1.2559	1045.3	1809 .700
2950	1.1406-3	1659.6	9.5353	27.610	869	1.2337	-1.0106	3.1095	1.1585	1014.5	5225 .517	1.4737	1.2568	1056.7	1836 .698
3000	1.1169-3	1818.6	9.5888	27.496	878	1.2586	-1.0120	3.2505	1.1566	1024.3	5675 .503	1.4749	1.2579	1068.2	1863 .695

TABLE 30.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.048785; EQUIV. RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	1.9218-2	-1815.4	7.1988	28.385	393	1.0000	-1.0000	1.2398	1.3093	587.5	657	.741	1.2396	1.3094	587.5	657	.741
950	1.8206-2	-1753.1	7.2662	28.385	408	1.0000	-1.0000	1.2536	1.3049	602.6	691	.740	1.2533	1.3050	602.6	691	.740
1000	1.7296-2	-1690.1	7.3309	28.385	423	1.0000	-1.0000	1.2668	1.3008	617.3	725	.739	1.2662	1.3009	617.3	725	.739
1050	1.6472-2	-1626.4	7.3930	28.385	437	1.0000	-1.0000	1.2791	1.2970	631.6	758	.738	1.2782	1.2973	631.7	758	.738
1100	1.5724-2	-1562.2	7.4528	28.385	452	1.0000	-1.0000	1.2909	1.2935	645.6	791	.737	1.2897	1.2939	645.7	791	.737
1150	1.5040-2	-1497.3	7.5104	28.385	466	1.0000	-1.0000	1.3024	1.2902	659.2	824	.736	1.3006	1.2907	659.4	823	.736
1200	1.4413-2	-1431.9	7.5661	28.385	479	1.0000	-1.0000	1.3135	1.2870	672.6	856	.735	1.3110	1.2877	672.8	855	.735
1250	1.3837-2	-1366.0	7.6199	28.385	493	1.0000	-1.0000	1.3242	1.2840	685.7	888	.735	1.3210	1.2849	685.9	886	.735
1300	1.3305-2	-1299.5	7.6720	28.385	506	1.0000	-1.0000	1.3347	1.2812	698.5	920	.734	1.3305	1.2823	698.8	918	.734
1350	1.2812-2	-1232.5	7.7226	28.385	520	1.0000	-1.0000	1.3449	1.2784	711.0	952	.734	1.3395	1.2799	711.4	949	.734
1400	1.2354-2	-1165.0	7.7717	28.385	532	1.0000	-1.0000	1.3549	1.2758	723.3	984	.733	1.3481	1.2776	723.8	979	.733
1450	1.1928-2	-1097.0	7.8194	28.385	545	1.0000	-1.0000	1.3648	1.2733	735.4	1016	.732	1.3563	1.2755	736.0	1010	.732
1500	1.1531-2	-1028.5	7.8658	28.385	558	1.0001	-1.0000	1.3745	1.2709	747.2	1048	.732	1.3640	1.2735	748.0	1040	.732
1550	1.1159-2	-959.6	7.9111	28.385	570	1.0001	-1.0000	1.3842	1.2685	758.9	1080	.731	1.3714	1.2716	759.8	1070	.731
1600	1.0810-2	-890.1	7.9552	28.385	583	1.0002	-1.0000	1.3938	1.2662	770.3	1113	.730	1.3785	1.2698	771.4	1100	.730
1650	1.0482-2	-820.2	7.9982	28.385	595	1.0003	-1.0000	1.4035	1.2639	781.6	1145	.729	1.3851	1.2682	782.9	1130	.730
1700	1.0174-2	-749.8	8.0403	28.384	607	1.0004	-1.0000	1.4133	1.2617	792.6	1178	.728	1.3915	1.2666	794.2	1159	.729
1750	9.8830-3	-678.9	8.0814	28.384	619	1.0005	-1.0000	1.4234	1.2595	803.5	1212	.727	1.3975	1.2652	805.3	1188	.728
1800	9.6084-3	-607.4	8.1216	28.384	631	1.0008	-1.0000	1.4337	1.2572	814.2	1246	.726	1.4032	1.2638	816.3	1217	.727
1850	9.3484-3	-535.5	8.1610	28.383	642	1.0010	-1.0000	1.4445	1.2550	824.7	1281	.725	1.4087	1.2626	827.2	1246	.726
1900	9.1021-3	-463.0	8.1997	28.382	654	1.0014	-1.0000	1.4560	1.2527	835.0	1317	.723	1.4138	1.2614	837.9	1274	.726
1950	8.8684-3	-389.9	8.2377	28.381	665	1.0019	-1.0001	1.4683	1.2504	845.2	1354	.722	1.4187	1.2602	848.5	1303	.725
2000	8.6462-3	-316.1	8.2750	28.379	677	1.0026	-1.0001	1.4816	1.2480	855.1	1393	.720	1.4233	1.2592	859.0	1331	.724
2050	8.4347-3	-241.7	8.3118	28.377	688	1.0034	-1.0001	1.4962	1.2454	864.9	1434	.718	1.4277	1.2582	869.3	1358	.723
2100	8.2331-3	-166.5	8.3480	28.374	699	1.0045	-1.0001	1.5125	1.2428	874.5	1477	.716	1.4319	1.2573	879.6	1385	.722
2150	8.0406-3	-90.4	8.3838	28.371	710	1.0059	-1.0002	1.5307	1.2399	883.9	1524	.713	1.4358	1.2564	889.8	1413	.722
2200	7.8567-3	-13.4	8.4193	28.367	721	1.0076	-1.0002	1.5515	1.2369	893.1	1576	.710	1.4396	1.2557	899.8	1439	.721
2250	7.6806-3	64.8	8.4544	28.361	732	1.0097	-1.0003	1.5751	1.2337	902.1	1632	.706	1.4431	1.2549	909.8	1466	.720
2300	7.5118-3	144.2	8.4893	28.354	742	1.0124	-1.0004	1.6021	1.2303	910.9	1694	.702	1.4464	1.2543	919.7	1493	.719
2350	7.3498-3	225.1	8.5241	28.346	753	1.0157	-1.0005	1.6331	1.2266	919.5	1764	.697	1.4496	1.2537	929.6	1519	.718
2400	7.1940-3	307.6	8.5588	28.335	763	1.0197	-1.0007	1.6686	1.2227	927.9	1842	.692	1.4526	1.2531	939.4	1545	.718
2450	7.0439-3	392.0	8.5936	28.322	774	1.0245	-1.0009	1.7092	1.2186	936.2	1930	.685	1.4554	1.2527	949.2	1571	.717
2500	6.8993-3	478.6	8.6286	28.307	784	1.0303	-1.0011	1.7553	1.2143	944.3	2029	.678	1.4580	1.2523	958.9	1597	.716
2550	6.7595-3	567.6	8.6639	28.288	794	1.0370	-1.0014	1.8075	1.2099	952.3	2141	.670	1.4605	1.2519	968.7	1623	.714
2600	6.6242-3	659.5	8.6995	28.265	804	1.0449	-1.0017	1.8660	1.2054	960.1	2267	.662	1.4629	1.2517	978.4	1650	.713
2650	6.4932-3	754.3	8.7357	28.239	814	1.0539	-1.0021	1.9309	1.2008	968.0	2408	.653	1.4651	1.2515	988.2	1675	.712
2700	6.3659-3	852.6	8.7724	28.208	824	1.0642	-1.0026	2.0022	1.1964	975.8	2565	.643	1.4672	1.2514	998.0	1701	.711
2750	6.2421-3	954.7	8.8099	28.172	834	1.0756	-1.0031	2.0796	1.1920	983.6	2739	.633	1.4691	1.2514	1007.8	1727	.709
2800	6.1216-3	1060.7	8.8481	28.130	843	1.0883	-1.0037	2.1626	1.1879	991.5	2929	.623	1.4709	1.2515	1017.7	1752	.708
2850	6.0041-3	1171.0	8.8871	28.083	853	1.1020	-1.0044	2.2504	1.1840	999.5	3136	.612	1.4726	1.2516	1027.7	1777	.707
2900	5.8894-3	1285.8	8.9270	28.029	862	1.1168	-1.0051	2.3421	1.1804	1007.7	3360	.601	1.4742	1.2519	1037.8	1803	.705
2950	5.7773-3	1405.3	8.9679	27.970	872	1.1324	-1.0059	2.4368	1.1772	1016.0	3601	.590	1.4756	1.2523	1047.9	1828	.704
3000	5.6676-3	1529.5	9.0096	27.904	881	1.1488	-1.0068	2.5334	1.1744	1024.6	3858	.578	1.4770	1.2527	1058.2	1853	.702

TABLE 30C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.048785; EQUIV.RATIO = 0.750; CHEM. EQUIV. RATIO = 0.7761;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES									
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.015-5	-2867.9	6.9822	28.385	1.0723	1.834-5	30.098	130	1.000	-1.000	0.9820	1.3914	277	174	.734	200
220	1.828-5	-2843.3	7.0993	28.385	1.5644	1.666-5	30.068	141	1.000	-1.000	0.9853	1.3901	291	190	.731	220
240	1.635-5	-2783.6	7.3565	28.385	5.7393	1.512-5	29.776	149	1.000	-1.000	1.0003	1.3872	305	202	.735	240
						PRESSURE = 0.10 ATM										
200	2.016-4	-2868.2	6.4023	28.385	1.0382	1.834-4	30.100	130	1.000	-1.000	0.9819	1.3914	277	174	.734	200
220	1.832-4	-2846.9	6.5034	28.385	1.1006	1.667-4	30.097	141	1.000	-1.000	0.9841	1.3903	291	190	.730	220
240	1.675-4	-2822.0	6.6114	28.385	1.5100	1.527-4	30.067	151	1.000	-1.000	0.9876	1.3889	304	206	.727	240
260	1.521-4	-2774.4	6.8009	28.385	3.8927	1.400-4	29.867	160	1.000	-1.000	0.9989	1.3863	317	219	.730	260
280	1.299-4	-2605.5	7.4224	28.385	12.2665	1.259-4	28.922	161	1.000	-1.000	1.0445	1.3798	333	225	.751	280
						PRESSURE = 1.00 ATM										
200	2.015-3	-2868.2	5.8234	28.385	1.0348	1.834-3	30.100	130	1.000	-1.000	0.9819	1.3914	277	174	.734	200
220	1.832-3	-2847.3	5.9229	28.385	1.0545	1.667-3	30.099	141	1.000	-1.000	0.9839	1.3903	291	190	.730	220
240	1.679-3	-2825.8	6.0165	28.385	1.1092	1.528-3	30.097	152	1.000	-1.000	0.9864	1.3890	303	206	.727	240
260	1.547-3	-2801.8	6.1125	28.385	1.3526	1.410-3	30.077	162	1.000	-1.000	0.9899	1.3875	316	221	.724	260
280	1.426-3	-2738.3	6.3459	28.385	2.1925	1.305-3	29.982	171	1.000	-1.000	0.9969	1.3854	328	236	.725	280
298	1.310-3	-2685.6	6.5276	28.385	3.8677	1.215-3	29.724	178	1.000	-1.000	1.0110	1.3825	340	246	.731	298
300	1.297-3	-2678.2	6.5524	28.385	4.1421	1.206-3	29.680	178	1.000	-1.000	1.0133	1.3821	341	247	.732	300
320	1.130-3	-2550.2	6.9637	28.385	9.6176	1.099-3	28.851	180	1.000	-1.000	1.0546	1.3760	356	253	.751	320
						PRESSURE = 10.00 ATM										
200	2.012-2	-2868.2	5.2447	28.385	1.0345	1.834-2	30.100	130	1.000	-1.000	0.9819	1.3914	277	174	.734	200
220	1.829-2	-2847.3	5.3440	28.385	1.0499	1.667-2	30.100	141	1.000	-1.000	0.9839	1.3903	291	190	.730	220
240	1.677-2	-2826.2	5.4361	28.385	1.0694	1.528-2	30.099	152	1.000	-1.000	0.9863	1.3890	303	206	.727	240
260	1.548-2	-2804.4	5.5230	28.385	1.1081	1.411-2	30.097	162	1.000	-1.000	0.9890	1.3876	316	222	.724	260
280	1.436-2	-2750.3	5.7221	28.385	1.3706	1.310-2	30.088	172	1.000	-1.000	0.9923	1.3860	327	237	.722	280
298	1.346-2	-2724.2	5.8123	28.385	1.5258	1.229-2	30.062	181	1.000	-1.000	0.9962	1.3843	338	250	.722	298
300	1.337-2	-2721.4	5.8218	28.385	1.5501	1.221-2	30.058	182	1.000	-1.000	0.9967	1.3841	339	251	.722	300
320	1.245-2	-2686.7	5.9335	28.385	1.9673	1.142-2	29.975	191	1.000	-1.000	1.0037	1.3819	350	264	.725	320
340	1.153-2	-2639.8	6.0756	28.385	2.8294	1.067-2	29.779	198	1.000	-1.000	1.0160	1.3789	362	276	.730	340
360	1.051-2	-2568.2	6.2797	28.385	4.5125	9.942-3	29.369	203	1.000	-1.000	1.0384	1.3748	374	286	.740	360
380	9.288-3	-2448.5	6.6025	28.385	7.8541	9.171-3	28.596	206	1.000	-1.000	1.0791	1.3688	389	294	.755	380
						PRESSURE = 50.00 ATM										
200	9.979-2	-2868.2	4.8401	28.385	1.0345	9.170-2	30.100	130	1.000	-1.000	0.9819	1.3914	277	174	.734	200
220	9.080-2	-2847.3	4.9394	28.385	1.0495	8.337-2	30.100	141	1.000	-1.000	0.9839	1.3903	291	190	.730	220
240	8.330-2	-2826.2	5.0314	28.385	1.0658	7.642-2	30.100	152	1.000	-1.000	0.9863	1.3890	303	206	.727	240
260	7.693-2	-2804.7	5.1175	28.385	1.0865	7.054-2	30.099	162	1.000	-1.000	0.9889	1.3876	316	222	.724	260
280	7.151-2	-2751.4	5.3136	28.385	1.2989	6.550-2	30.097	172	1.000	-1.000	0.9919	1.3860	327	237	.722	280
298	6.715-2	-2727.5	5.3960	28.385	1.3303	6.150-2	30.092	181	1.000	-1.000	0.9950	1.3845	338	250	.722	298
300	6.674-2	-2725.1	5.4042	28.385	1.3352	6.112-2	30.091	182	1.000	-1.000	0.9953	1.3843	339	251	.722	300
320	6.250-2	-2697.6	5.4927	28.385	1.4188	5.727-2	30.075	192	1.000	-1.000	0.9994	1.3824	350	265	.722	320
340	5.866-2	-2667.8	5.5832	28.385	1.5835	5.383-2	30.036	200	1.000	-1.000	1.0047	1.3803	360	278	.724	340
360	5.505-2	-2633.5	5.6812	28.385	1.8752	5.070-2	29.954	209	1.000	-1.000	1.0122	1.3779	371	291	.726	360
380	5.151-2	-2591.5	5.7944	28.385	2.3533	4.778-2	29.799	216	1.000	-1.000	1.0231	1.3750	382	303	.730	380
400	4.787-2	-2537.5	5.9328	28.385	3.1017	4.499-2	29.532	223	1.000	-1.000	1.0395	1.3714	393	315	.735	400
420	4.394-2	-2464.8	6.1100	28.385	4.2557	4.222-2	29.102	227	1.000	-1.000	1.0641	1.3670	405	325	.744	420

TABLE 31A .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.065046; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.3614;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .12289; H2O= .17179; N2= .69696; O2= .00000; AR= .00836

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
200	1.7282-3	8.6408-2	-3275.5	7.9908	7.3158	6.6408	5.9657	5.4939	1.0686	1.3780	284.2	110	147	.7988	200
210	1.6459-3	8.2293-2	-3264.8	8.0430	7.3680	6.6929	6.0179	5.5461	1.0701	1.3773	291.2	115	155	.7935	210
220	1.5710-3	7.8552-2	-3254.1	8.0928	7.4178	6.7427	6.0677	5.5959	1.0717	1.3766	298.0	121	164	.7890	220
230	1.5027-3	7.5137-2	-3243.3	8.1405	7.4654	6.7904	6.1154	5.6436	1.0733	1.3758	304.6	126	172	.7851	230
240	1.4401-3	7.2006-2	-3232.6	8.1862	7.5112	6.8361	6.1611	5.6893	1.0750	1.3749	311.0	131	181	.7817	240
250	1.3825-3	6.9126-2	-3221.8	8.2301	7.5551	6.8801	6.2050	5.7332	1.0768	1.3741	317.3	137	189	.7789	250
260	1.3293-3	6.6467-2	-3211.1	8.2724	7.5974	6.9223	6.2473	5.7755	1.0787	1.3732	323.5	142	197	.7765	260
270	1.2801-3	6.4006-2	-3200.3	8.3131	7.6381	6.9631	6.2881	5.8162	1.0806	1.3723	329.6	147	205	.7746	270
280	1.2344-3	6.1720-2	-3189.4	8.3525	7.6774	7.0024	6.3274	5.8556	1.0826	1.3713	335.5	152	213	.7731	280
290	1.1918-3	5.9592-2	-3178.6	8.3905	7.7155	7.0404	6.3654	5.8936	1.0847	1.3704	341.3	157	220	.7720	290
298	1.1593-3	5.7963-2	-3169.8	8.4206	7.7456	7.0705	6.3955	5.9237	1.0864	1.3696	346.0	161	226	.7713	298
300	1.1521-3	5.7605-2	-3167.7	8.4273	7.7523	7.0772	6.4022	5.9304	1.0868	1.3694	347.0	162	228	.7712	300
310	1.1149-3	5.5747-2	-3156.9	8.4630	7.7879	7.1129	6.4379	5.9661	1.0890	1.3684	352.6	166	235	.7710	310
320	1.0801-3	5.4005-2	-3146.0	8.4976	7.8226	7.1475	6.4725	6.0007	1.0913	1.3673	358.1	171	242	.7711	320
330	1.0474-3	5.2368-2	-3135.0	8.5312	7.8562	7.1811	6.5061	6.0343	1.0936	1.3663	363.6	176	250	.7713	330
340	1.0166-3	5.0828-2	-3124.1	8.5639	7.8889	7.2138	6.5388	6.0670	1.0960	1.3652	368.9	181	257	.7714	340
350	9.8752-4	4.9376-2	-3113.1	8.5957	7.9207	7.2456	6.5706	6.0988	1.0984	1.3641	374.1	185	264	.7715	350
360	9.6009-4	4.8004-2	-3102.1	8.6267	7.9516	7.2766	6.6016	6.1298	1.1009	1.3630	379.3	190	271	.7707	360
370	9.3414-4	4.6707-2	-3091.1	8.6569	7.9818	7.3068	6.6318	6.1600	1.1034	1.3618	384.3	195	279	.7698	370
380	9.0955-4	4.5478-2	-3080.1	8.6863	8.0113	7.3363	6.6612	6.1894	1.1059	1.3607	389.3	199	286	.7687	380
390	8.8623-4	4.4312-2	-3069.0	8.7151	8.0401	7.3650	6.6900	6.2182	1.1086	1.3595	394.3	204	294	.7676	390
400	8.6408-4	4.3204-2	-3057.9	8.7432	8.0682	7.3931	6.7181	6.2463	1.1112	1.3584	399.1	208	301	.7666	400
410	8.4300-4	4.2150-2	-3046.8	8.7706	8.0956	7.4206	6.7456	6.2738	1.1139	1.3572	403.9	212	309	.7661	410
420	8.2293-4	4.1147-2	-3035.6	8.7975	8.1225	7.4475	6.7725	6.3006	1.1167	1.3560	408.6	217	316	.7657	420
430	8.0379-4	4.0190-2	-3024.4	8.8238	8.1488	7.4738	6.7988	6.3269	1.1195	1.3548	413.3	221	323	.7654	430
440	7.8552-4	3.9276-2	-3013.2	8.8496	8.1746	7.4996	6.8245	6.3527	1.1223	1.3536	417.8	225	330	.7652	440
450	7.6807-4	3.8403-2	-3002.0	8.8749	8.1998	7.5248	6.8498	6.3780	1.1252	1.3523	422.4	229	337	.7651	450
460	7.5137-4	3.7569-2	-2990.7	8.8996	8.2246	7.5496	6.8745	6.4027	1.1281	1.3511	426.9	233	344	.7650	460
470	7.3538-4	3.6769-2	-2979.4	8.9239	8.2489	7.5739	6.8988	6.4270	1.1310	1.3499	431.3	237	351	.7650	470
480	7.2006-4	3.6003-2	-2968.1	8.9478	8.2727	7.5977	6.9227	6.4509	1.1340	1.3487	435.6	241	358	.7651	480
490	7.0537-4	3.5268-2	-2956.7	8.9712	8.2961	7.6211	6.9461	6.4743	1.1370	1.3474	439.9	245	364	.7652	490
500	6.9126-4	3.4563-2	-2945.4	8.9942	8.3191	7.6441	6.9691	6.4973	1.1400	1.3462	444.2	249	371	.7653	500
510	6.7771-4	3.3885-2	-2933.9	9.0168	8.3417	7.6667	6.9917	6.5199	1.1430	1.3450	448.4	253	378	.7650	510
520	6.6467-4	3.3234-2	-2922.5	9.0390	8.3640	7.6889	7.0139	6.5421	1.1461	1.3437	452.6	257	385	.7647	520
530	6.5213-4	3.2607-2	-2911.0	9.0609	8.3858	7.7108	7.0358	6.5640	1.1492	1.3425	456.7	261	393	.7643	530
540	6.4006-4	3.2003-2	-2899.5	9.0824	8.4073	7.7323	7.0573	6.5855	1.1523	1.3412	460.8	265	400	.7639	540
550	6.2842-4	3.1421-2	-2888.0	9.1035	8.4285	7.7535	7.0785	6.6066	1.1554	1.3400	464.8	269	407	.7635	550
560	6.1720-4	3.0860-2	-2876.4	9.1244	8.4494	7.7743	7.0993	6.6275	1.1586	1.3388	468.8	273	414	.7630	560
570	6.0637-4	3.0318-2	-2864.8	9.1449	8.4699	7.7949	7.1198	6.6480	1.1617	1.3375	472.8	276	421	.7626	570
580	5.9591-4	2.9796-2	-2853.2	9.1651	8.4901	7.8151	7.1401	6.6683	1.1649	1.3363	476.7	280	428	.7621	580
590	5.8581-4	2.9291-2	-2841.5	9.1851	8.5101	7.8350	7.1600	6.6882	1.1681	1.3351	480.5	284	436	.7616	590

TABLE 31A CONTINUED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.065046; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.3614;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .12289; H2O= .17179; N2= .69696; O2= .00000; AR= .00836

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
600	5.7605-4	2.8803-2	-2829.8	9.2048	8.5297	7.8547	7.1797	6.7079	1.1713	1.3338	484.4	288	443	.7611	600
610	5.6661-4	2.8330-2	-2818.1	9.2241	8.5491	7.8741	7.1991	6.7272	1.1745	1.3326	488.2	291	450	.7605	610
620	5.5747-4	2.7873-2	-2806.3	9.2433	8.5682	7.8932	7.2182	6.7464	1.1778	1.3314	491.9	295	457	.7600	620
630	5.4862-4	2.7431-2	-2794.5	9.2621	8.5871	7.9121	7.2371	6.7652	1.1810	1.3302	495.7	299	465	.7594	630
640	5.4005-4	2.7002-2	-2782.7	9.2808	8.6057	7.9307	7.2557	6.7839	1.1843	1.3290	499.3	302	472	.7589	640
650	5.3174-4	2.6587-2	-2770.8	9.2991	8.6241	7.9491	7.2741	6.8022	1.1875	1.3278	503.0	306	479	.7583	650
660	5.2368-4	2.6184-2	-2758.9	9.3173	8.6423	7.9672	7.2922	6.8204	1.1908	1.3266	506.6	310	486	.7577	660
670	5.1587-4	2.5793-2	-2747.0	9.3352	8.6602	7.9852	7.3102	6.8383	1.1940	1.3254	510.2	313	494	.7572	670
680	5.0828-4	2.5414-2	-2735.1	9.3529	8.6779	8.0029	7.3279	6.8560	1.1973	1.3243	513.8	317	501	.7566	680
690	5.0091-4	2.5046-2	-2723.1	9.3704	8.6954	8.0204	7.3454	6.8735	1.2005	1.3231	517.3	320	508	.7560	690
700	4.9376-4	2.4688-2	-2711.1	9.3877	8.7127	8.0377	7.3627	6.8908	1.2038	1.3219	520.8	324	516	.7555	700
710	4.8680-4	2.4340-2	-2699.0	9.4048	8.7298	8.0548	7.3798	6.9079	1.2070	1.3208	524.3	327	523	.7549	710
720	4.8004-4	2.4002-2	-2686.9	9.4217	8.7467	8.0717	7.3967	6.9248	1.2103	1.3197	527.8	331	530	.7543	720
730	4.7347-4	2.3673-2	-2674.8	9.4385	8.7634	8.0884	7.4134	6.9416	1.2135	1.3185	531.2	334	538	.7538	730
740	4.6707-4	2.3353-2	-2662.6	9.4550	8.7800	8.1049	7.4299	6.9581	1.2167	1.3174	534.6	337	545	.7533	740
750	4.6084-4	2.3042-2	-2650.5	9.4713	8.7963	8.1213	7.4463	6.9745	1.2200	1.3163	538.0	341	552	.7527	750
760	4.5478-4	2.2739-2	-2638.2	9.4875	8.8125	8.1375	7.4625	6.9906	1.2232	1.3152	541.3	344	560	.7522	760
770	4.4887-4	2.2444-2	-2626.0	9.5035	8.8285	8.1535	7.4785	7.0066	1.2264	1.3141	544.6	347	567	.7517	770
780	4.4312-4	2.2156-2	-2613.7	9.5194	8.8444	8.1693	7.4943	7.0225	1.2296	1.3131	548.0	351	574	.7512	780
790	4.3751-4	2.1875-2	-2601.4	9.5351	8.8600	8.1850	7.5100	7.0382	1.2328	1.3120	551.2	354	582	.7507	790
800	4.3204-4	2.1602-2	-2589.1	9.5506	8.8756	8.2005	7.5255	7.0537	1.2359	1.3110	554.5	357	589	.7502	800
810	4.2670-4	2.1335-2	-2576.7	9.5660	8.8909	8.2159	7.5409	7.0691	1.2391	1.3099	557.7	361	596	.7498	810
820	4.2150-4	2.1075-2	-2564.3	9.5812	8.9062	8.2311	7.5561	7.0843	1.2422	1.3089	560.9	364	603	.7494	820
830	4.1642-4	2.0821-2	-2551.8	9.5963	8.9212	8.2462	7.5712	7.0994	1.2454	1.3079	564.1	367	611	.7491	830
840	4.1147-4	2.0573-2	-2539.4	9.6112	8.9362	8.2612	7.5861	7.1143	1.2485	1.3069	567.3	371	618	.7487	840
850	4.0662-4	2.0331-2	-2526.9	9.6260	8.9510	8.2759	7.6009	7.1291	1.2515	1.3059	570.4	374	625	.7483	850
860	4.0190-4	2.0095-2	-2514.3	9.6406	8.9656	8.2906	7.6156	7.1438	1.2546	1.3049	573.6	377	632	.7480	860
870	3.9728-4	1.9864-2	-2501.8	9.6552	8.9801	8.3051	7.6301	7.1583	1.2577	1.3039	576.7	380	639	.7477	870
880	3.9276-4	1.9638-2	-2489.2	9.6696	8.9945	8.3195	7.6445	7.1727	1.2607	1.3030	579.8	383	647	.7473	880
890	3.8835-4	1.9417-2	-2476.6	9.6838	9.0088	8.3338	7.6587	7.1869	1.2637	1.3021	582.9	386	654	.7470	890
900	3.8403-4	1.9202-2	-2463.9	9.6980	9.0229	8.3479	7.6729	7.2011	1.2667	1.3011	585.9	390	661	.7467	900
910	3.7981-4	1.8991-2	-2451.2	9.7120	9.0369	8.3619	7.6869	7.2151	1.2696	1.3002	589.0	393	668	.7464	910
920	3.7569-4	1.8784-2	-2438.5	9.7259	9.0508	8.3758	7.7008	7.2290	1.2725	1.2993	592.0	396	675	.7461	920
930	3.7165-4	1.8582-2	-2425.8	9.7396	9.0646	8.3896	7.7146	7.2427	1.2754	1.2984	595.0	399	682	.7458	930
940	3.6769-4	1.8385-2	-2413.0	9.7533	9.0783	8.4032	7.7282	7.2564	1.2783	1.2976	598.0	402	689	.7456	940
950	3.6382-4	1.8191-2	-2400.2	9.7668	9.0918	8.4168	7.7418	7.2699	1.2812	1.2967	600.9	405	696	.7453	950
960	3.6003-4	1.8002-2	-2387.4	9.7803	9.1052	8.4302	7.7552	7.2834	1.2840	1.2959	603.9	408	703	.7450	960
970	3.5632-4	1.7816-2	-2374.5	9.7936	9.1186	8.4435	7.7685	7.2967	1.2868	1.2950	606.8	411	710	.7448	970
980	3.5268-4	1.7634-2	-2361.7	9.8068	9.1318	8.4567	7.7817	7.3099	1.2895	1.2942	609.8	414	717	.7445	980
990	3.4912-4	1.7456-2	-2348.7	9.8199	9.1449	8.4699	7.7948	7.3230	1.2922	1.2934	612.7	417	724	.7443	990

TABLE 31A CONCLUDED .- PROPERTIES BASED ON CONSTANT GASEOUS COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A=0.065046; EQUIV. RATIO= 1.000; CHEM. EQUIV. RATIO= 1.0000; MW = 28.3614;
WET AIR (W/A= 0.03); GASEOUS COMPOSITION: CO2= .12289; H2O= .17179; N2= .69696; O2= .00000; AR= .00836

T	DENSITY (P=1.0)	DENSITY (P=50.)	H	ENTROPY (P=.01)	ENTROPY (P=.10)	ENTROPY (P=1.0)	ENTROPY (P=10.)	ENTROPY (P=50.)	CP	GAM	VS	VIS	COND	PRAN	T
												MICRO	MICRO		
K	G/CM3	G/CM3	J/G	J/G K	J/G K	J/G K	J/G K	J/G K	J/G K		M/S	POISE	W/CM K		K
1000	3.4563-4	1.7282-2	-2335.8	9.8329	9.1579	8.4829	7.8078	7.3360	1.2949	1.2926	615.6	420	731	.7440	1000
1050	3.2917-4	1.6459-2	-2270.7	9.8964	9.2214	8.5463	7.8713	7.3995	1.3078	1.2889	629.9	435	766	.7428	1050
1100	3.1421-4	1.5710-2	-2205.0	9.9575	9.2825	8.6075	7.9324	7.4606	1.3200	1.2855	643.8	449	800	.7418	1100
1150	3.0055-4	1.5027-2	-2138.7	10.0165	9.3414	8.6664	7.9914	7.5196	1.3317	1.2823	657.5	464	833	.7409	1150
1200	2.8803-4	1.4401-2	-2071.9	10.0734	9.3983	8.7233	8.0483	7.5765	1.3429	1.2793	670.9	478	867	.7400	1200
1250	2.7650-4	1.3825-2	-2004.5	10.1284	9.4534	8.7784	8.1033	7.6315	1.3535	1.2765	683.9	491	900	.7391	1250
1300	2.6587-4	1.3293-2	-1936.5	10.1817	9.5067	8.8316	8.1566	7.6848	1.3636	1.2739	696.8	505	932	.7383	1300
1350	2.5602-4	1.2801-2	-1868.1	10.2333	9.5583	8.8833	8.2083	7.7364	1.3732	1.2714	709.4	518	965	.7375	1350
1400	2.4688-4	1.2344-2	-1799.2	10.2834	9.6084	8.9334	8.2584	7.7865	1.3824	1.2691	721.7	531	997	.7367	1400
1450	2.3837-4	1.1918-2	-1729.9	10.3321	9.6571	8.9821	8.3070	7.8352	1.3912	1.2670	733.9	544	1029	.7360	1450
1500	2.3042-4	1.1521-2	-1660.1	10.3794	9.7044	9.0294	8.3543	7.8825	1.3995	1.2650	745.8	557	1061	.7352	1500
1550	2.2299-4	1.1149-2	-1589.9	10.4254	9.7504	9.0754	8.4004	7.9285	1.4074	1.2631	757.6	570	1092	.7343	1550
1600	2.1602-4	1.0801-2	-1519.4	10.4702	9.7952	9.1202	8.4452	7.9733	1.4149	1.2614	769.2	582	1124	.7334	1600
1650	2.0947-4	1.0474-2	-1448.5	10.5139	9.8389	9.1638	8.4888	8.0170	1.4220	1.2597	780.6	595	1155	.7325	1650
1700	2.0331-4	1.0166-2	-1377.2	10.5564	9.8814	9.2064	8.5314	8.0595	1.4288	1.2582	791.8	607	1186	.7316	1700
1750	1.9750-4	9.8752-3	-1305.6	10.5979	9.9229	9.2479	8.5729	8.1010	1.4352	1.2567	802.9	619	1216	.7307	1750
1800	1.9202-4	9.6009-3	-1233.7	10.6385	9.9634	9.2884	8.6134	8.1416	1.4413	1.2553	813.9	631	1247	.7298	1800
1850	1.8683-4	9.3414-3	-1161.5	10.6780	10.0030	9.3280	8.6530	8.1811	1.4471	1.2541	824.7	643	1277	.7289	1850
1900	1.8191-4	9.0955-3	-1089.0	10.7167	10.0417	9.3666	8.6916	8.2198	1.4526	1.2529	835.4	655	1307	.7279	1900
1950	1.7725-4	8.8623-3	-1016.2	10.7545	10.0795	9.4044	8.7294	8.2576	1.4578	1.2517	845.9	667	1337	.7270	1950
2000	1.7282-4	8.6408-3	-943.2	10.7915	10.1164	9.4414	8.7664	8.2946	1.4627	1.2507	856.3	678	1366	.7260	2000
2050	1.6860-4	8.4300-3	-869.9	10.8276	10.1526	9.4776	8.8026	8.3307	1.4674	1.2497	866.6	689	1395	.7252	2050
2100	1.6459-4	8.2293-3	-796.5	10.8631	10.1880	9.5130	8.8380	8.3662	1.4718	1.2487	876.8	701	1424	.7243	2100
2150	1.6076-4	8.0379-3	-722.8	10.8977	10.2227	9.5477	8.8727	8.4008	1.4760	1.2478	886.9	712	1452	.7234	2150
2200	1.5710-4	7.8552-3	-648.9	10.9317	10.2567	9.5817	8.9066	8.4348	1.4800	1.2470	896.8	723	1481	.7224	2200
2250	1.5361-4	7.6807-3	-574.8	10.9650	10.2900	9.6150	8.9399	8.4681	1.4838	1.2462	906.7	734	1509	.7215	2250
2300	1.5027-4	7.5137-3	-500.5	10.9977	10.3226	9.6476	8.9726	8.5008	1.4874	1.2455	916.4	745	1537	.7205	2300
2350	1.4708-4	7.3538-3	-426.0	11.0297	10.3547	9.6796	9.0046	8.5328	1.4908	1.2448	926.0	755	1565	.7195	2350
2400	1.4401-4	7.2006-3	-351.4	11.0611	10.3861	9.7111	9.0360	8.5642	1.4941	1.2441	935.6	766	1593	.7185	2400
2450	1.4107-4	7.0537-3	-276.6	11.0920	10.4169	9.7419	9.0669	8.5951	1.4971	1.2435	945.1	777	1621	.7174	2450
2500	1.3825-4	6.9126-3	-201.7	11.1222	10.4472	9.7722	9.0972	8.6253	1.5001	1.2429	954.4	787	1648	.7164	2500
2550	1.3554-4	6.7771-3	-126.6	11.1520	10.4769	9.8019	9.1269	8.6551	1.5029	1.2423	963.7	797	1676	.7152	2550
2600	1.3293-4	6.6467-3	-51.4	11.1812	10.5061	9.8311	9.1561	8.6843	1.5055	1.2418	972.9	808	1703	.7140	2600
2650	1.3043-4	6.5213-3	23.9	11.2099	10.5348	9.8598	9.1848	8.7130	1.5081	1.2413	982.0	818	1731	.7128	2650
2700	1.2801-4	6.4006-3	99.4	11.2381	10.5631	9.8880	9.2130	8.7412	1.5105	1.2408	991.0	828	1758	.7116	2700
2750	1.2568-4	6.2842-3	175.0	11.2658	10.5908	9.9158	9.2408	8.7689	1.5128	1.2404	1000.0	838	1785	.7105	2750
2800	1.2344-4	6.1720-3	250.7	11.2931	10.6181	9.9431	9.2680	8.7962	1.5151	1.2399	1008.9	848	1811	.7095	2800
2850	1.2127-4	6.0637-3	326.5	11.3199	10.6449	9.9699	9.2949	8.8230	1.5172	1.2395	1017.6	858	1838	.7085	2850
2900	1.1918-4	5.9591-3	402.4	11.3463	10.6713	9.9963	9.3213	8.8494	1.5193	1.2391	1026.4	868	1864	.7075	2900
2950	1.1716-4	5.8581-3	478.4	11.3723	10.6973	10.0223	9.3473	8.8754	1.5213	1.2387	1035.0	878	1890	.7065	2950
3000	1.1521-4	5.7605-3	554.5	11.3979	10.7229	10.0479	9.3728	8.9010	1.5232	1.2383	1043.6	887	1915	.7056	3000

TABLE 31.1B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.065046; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
900	3.8404-6	-2463.9	9.6980	28.361	390	1.0000	-1.0000	1.2667	1.3011	585.9	661	.747	1.2667	1.3011	585.9	661	.747
950	3.6382-6	-2400.2	9.7668	28.361	405	1.0000	-1.0000	1.2812	1.2967	600.9	696	.745	1.2812	1.2967	600.9	696	.745
1000	3.4563-6	-2335.8	9.8329	28.361	420	1.0000	-1.0000	1.2950	1.2926	615.6	731	.744	1.2949	1.2926	615.6	731	.744
1050	3.2917-6	-2270.7	9.8964	28.361	435	1.0000	-1.0000	1.3080	1.2889	629.9	766	.743	1.3078	1.2889	629.9	766	.743
1100	3.1421-6	-2205.0	9.9576	28.361	449	1.0000	-1.0000	1.3206	1.2854	643.8	800	.742	1.3200	1.2855	643.8	800	.742
1150	3.0055-6	-2138.7	10.0165	28.361	464	1.0001	-1.0000	1.3329	1.2820	657.4	834	.741	1.3317	1.2823	657.5	833	.741
1200	2.8802-6	-2071.7	10.0735	28.361	478	1.0001	-1.0000	1.3452	1.2788	670.7	869	.739	1.3429	1.2793	670.9	867	.740
1250	2.7650-6	-2004.1	10.1287	28.361	491	1.0003	-1.0000	1.3580	1.2755	683.7	904	.738	1.3535	1.2765	683.9	900	.739
1300	2.6586-6	-1935.9	10.1822	28.360	505	1.0005	-1.0000	1.3718	1.2722	696.3	940	.737	1.3636	1.2739	696.8	932	.738
1350	2.5601-6	-1866.9	10.2343	28.360	518	1.0010	-1.0000	1.3874	1.2686	708.6	978	.735	1.3732	1.2714	709.4	965	.737
1400	2.4685-6	-1797.1	10.2850	28.358	531	1.0017	-1.0000	1.4060	1.2645	720.4	1020	.733	1.3824	1.2692	721.8	997	.737
1450	2.3832-6	-1726.3	10.3348	28.356	544	1.0028	-1.0001	1.4290	1.2599	731.9	1066	.730	1.3911	1.2671	734.0	1029	.736
1500	2.3035-6	-1654.1	10.3837	28.353	557	1.0045	-1.0001	1.4583	1.2544	742.8	1119	.726	1.3994	1.2651	746.0	1061	.735
1550	2.2288-6	-1580.3	10.4321	28.347	570	1.0070	-1.0002	1.4961	1.2479	753.2	1183	.721	1.4073	1.2633	757.8	1093	.734
1600	2.1585-6	-1504.3	10.4803	28.340	582	1.0105	-1.0003	1.5452	1.2401	763.0	1259	.715	1.4148	1.2616	769.6	1124	.733
1650	2.0923-6	-1425.5	10.5288	28.328	595	1.0156	-1.0004	1.6088	1.2312	772.2	1354	.706	1.4218	1.2601	781.2	1155	.732
1700	2.0296-6	-1343.1	10.5780	28.312	607	1.0225	-1.0006	1.6906	1.2211	780.8	1474	.696	1.4285	1.2588	792.7	1186	.731
1750	1.9701-6	-1256.1	10.6285	28.290	619	1.0318	-1.0008	1.7946	1.2099	788.9	1625	.683	1.4347	1.2576	804.2	1217	.729
1800	1.9133-6	-1163.2	10.6808	28.260	631	1.0441	-1.0012	1.9254	1.1981	796.6	1818	.668	1.4406	1.2566	815.8	1248	.728
1850	1.8590-6	-1063.0	10.7357	28.220	642	1.0600	-1.0017	2.0875	1.1861	804.0	2064	.650	1.4461	1.2559	827.4	1278	.726
1900	1.8067-6	-953.9	10.7939	28.168	654	1.0802	-1.0023	2.2856	1.1742	811.5	2377	.628	1.4513	1.2553	839.1	1309	.725
1950	1.7562-6	-833.8	10.8562	28.101	665	1.1055	-1.0031	2.5242	1.1630	819.1	2775	.605	1.4560	1.2550	851.0	1339	.723
2000	1.7070-6	-700.7	10.9236	28.015	675	1.1366	-1.0042	2.8075	1.1526	827.1	3277	.579	1.4604	1.2551	863.1	1370	.720
2050	1.6591-6	-552.2	10.9969	27.908	686	1.1743	-1.0055	3.1394	1.1433	835.6	3907	.551	1.4644	1.2554	875.6	1401	.717
2100	1.6119-6	-385.9	11.0771	27.776	696	1.2193	-1.0071	3.5230	1.1353	844.8	4693	.523	1.4681	1.2561	888.6	1432	.714
2150	1.5654-6	-199.0	11.1650	27.617	706	1.2723	-1.0091	3.9615	1.1285	854.7	5661	.494	1.4715	1.2572	902.1	1464	.710
2200	1.5192-6	11.2	11.2616	27.426	716	1.3339	-1.0115	4.4578	1.1229	865.4	6842	.466	1.4747	1.2588	916.3	1498	.705
2250	1.4732-6	247.8	11.3679	27.199	725	1.4050	-1.0144	5.0153	1.1184	877.1	8262	.440	1.4777	1.2608	931.2	1534	.699
2300	1.4272-6	513.8	11.4849	26.935	734	1.4859	-1.0178	5.6371	1.1149	889.7	9939	.416	1.4806	1.2634	947.1	1573	.691
2350	1.3810-6	812.6	11.6134	26.629	743	1.5773	-1.0218	6.3261	1.1123	903.4	11873	.396	1.4835	1.2666	964.0	1615	.682
2400	1.3344-6	1147.5	11.7544	26.280	751	1.6788	-1.0265	7.0822	1.1104	918.2	14042	.379	1.4864	1.2704	982.1	1662	.672
2450	1.2876-6	1521.8	11.9087	25.886	759	1.7893	-1.0317	7.8988	1.1092	934.3	16385	.366	1.4896	1.2749	1001.6	1715	.659
2500	1.2404-6	1938.1	12.0769	25.447	766	1.9058	-1.0374	8.7578	1.1087	951.7	18796	.357	1.4929	1.2802	1022.6	1773	.645
2550	1.1931-6	2397.8	12.2589	24.965	774	2.0231	-1.0435	9.6240	1.1088	970.4	21119	.353	1.4966	1.2862	1045.1	1839	.630
2600	1.1459-6	2899.7	12.4538	24.448	781	2.1331	-1.0495	10.4407	1.1096	990.5	23151	.352	1.5005	1.2931	1069.3	1911	.614
2650	1.0993-6	3439.7	12.6595	23.904	789	2.2250	-1.0549	11.1300	1.1109	1011.9	24669	.356	1.5048	1.3006	1094.9	1989	.597
2700	1.0538-6	4009.1	12.8723	23.348	796	2.2871	-1.0591	11.6010	1.1129	1034.4	25463	.363	1.5094	1.3088	1121.8	2071	.580
2750	1.0102-6	4594.7	13.0872	22.797	804	2.3089	-1.0616	11.7686	1.1156	1057.8	25398	.372	1.5141	1.3173	1149.5	2155	.565
2800	9.6922-7	5180.0	13.2981	22.269	811	2.2845	-1.0619	11.5790	1.1191	1081.6	24451	.384	1.5188	1.3260	1177.4	2239	.550
2850	9.3133-7	5746.7	13.4988	21.780	819	2.2148	-1.0598	11.0325	1.1234	1105.6	22744	.397	1.5234	1.3344	1204.9	2321	.538
2900	8.9693-7	6278.2	13.6837	21.344	828	2.1084	-1.0558	10.1897	1.1288	1129.3	20507	.411	1.5278	1.3422	1231.4	2397	.527
2950	8.6611-7	6762.4	13.8492	20.966	836	1.9786	-1.0503	9.1550	1.1354	1152.5	18019	.425	1.5318	1.3493	1256.4	2469	.519
3000	8.3875-7	7192.5	13.9938	20.648	845	1.8400	-1.0441	8.0456	1.1433	1175.2	15535	.438	1.5354	1.3555	1279.7	2534	.512

TABLE 31.2B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.065046; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S	
900	3.8403-5	-2463.9	9.0229	28.361	390	1.0000	-1.0000	1.2667	1.3011	585.9	661 .747	1.2667	1.3011	585.9	661 .747
950	3.6382-5	-2400.2	9.0918	28.361	405	1.0000	-1.0000	1.2812	1.2967	600.9	696 .745	1.2812	1.2967	600.9	696 .745
1000	3.4563-5	-2335.8	9.1579	28.361	420	1.0000	-1.0000	1.2950	1.2926	615.6	731 .744	1.2949	1.2926	615.6	731 .744
1050	3.2917-5	-2270.7	9.2214	28.361	435	1.0000	-1.0000	1.3079	1.2889	629.9	766 .743	1.3078	1.2889	629.9	766 .743
1100	3.1421-5	-2205.0	9.2825	28.361	449	1.0000	-1.0000	1.3203	1.2854	643.8	800 .742	1.3200	1.2855	643.8	800 .742
1150	3.0055-5	-2138.7	9.3415	28.361	464	1.0000	-1.0000	1.3323	1.2822	657.5	834 .741	1.3317	1.2823	657.5	833 .741
1200	2.8802-5	-2071.8	9.3984	28.361	478	1.0001	-1.0000	1.3440	1.2790	670.8	868 .740	1.3429	1.2793	670.9	867 .740
1250	2.7650-5	-2004.3	9.4535	28.361	491	1.0001	-1.0000	1.3556	1.2760	683.8	902 .739	1.3535	1.2765	683.9	900 .739
1300	2.6587-5	-1936.2	9.5069	28.361	505	1.0003	-1.0000	1.3675	1.2731	696.5	936 .738	1.3636	1.2739	696.8	932 .738
1350	2.5602-5	-1867.6	9.5587	28.361	518	1.0005	-1.0000	1.3800	1.2701	709.0	971 .736	1.3732	1.2714	709.4	965 .738
1400	2.4687-5	-1798.2	9.6092	28.360	531	1.0008	-1.0000	1.3936	1.2669	721.1	1008 .735	1.3824	1.2692	721.7	997 .737
1450	2.3835-5	-1728.2	9.6583	28.359	544	1.0013	-1.0000	1.4091	1.2636	732.9	1046 .733	1.3912	1.2670	733.9	1029 .736
1500	2.3039-5	-1657.3	9.7064	28.357	557	1.0021	-1.0000	1.4272	1.2598	744.4	1088 .731	1.3994	1.2650	745.9	1061 .735
1550	2.2294-5	-1585.4	9.7536	28.355	570	1.0032	-1.0001	1.4492	1.2556	755.4	1134 .728	1.4073	1.2632	757.7	1092 .734
1600	2.1594-5	-1512.3	9.8000	28.351	582	1.0049	-1.0001	1.4762	1.2508	766.1	1186 .725	1.4148	1.2615	769.4	1124 .733
1650	2.0936-5	-1437.7	9.8459	28.346	595	1.0072	-1.0002	1.5098	1.2452	776.3	1246 .721	1.4219	1.2599	780.9	1155 .732
1700	2.0315-5	-1361.2	9.8916	28.339	607	1.0104	-1.0003	1.5516	1.2388	786.1	1316 .716	1.4286	1.2584	792.3	1186 .731
1750	1.9727-5	-1282.3	9.9373	28.328	619	1.0147	-1.0004	1.6036	1.2316	795.4	1399 .710	1.4350	1.2571	803.6	1217 .730
1800	1.9170-5	-1200.6	9.9833	28.314	631	1.0204	-1.0005	1.6677	1.2237	804.2	1499 .702	1.4410	1.2559	814.8	1247 .729
1850	1.8640-5	-1115.3	10.0300	28.296	643	1.0277	-1.0008	1.7462	1.2150	812.7	1619 .693	1.4466	1.2549	825.9	1277 .728
1900	1.8134-5	-1025.7	10.0778	28.272	654	1.0369	-1.0010	1.8413	1.2058	820.8	1765 .682	1.4519	1.2540	837.1	1307 .727
1950	1.7649-5	-930.9	10.1271	28.241	666	1.0485	-1.0014	1.9551	1.1964	828.8	1943 .670	1.4569	1.2533	848.2	1337 .725
2000	1.7184-5	-829.8	10.1782	28.201	677	1.0628	-1.0019	2.0898	1.1869	836.6	2158 .656	1.4615	1.2527	859.5	1367 .724
2050	1.6735-5	-721.5	10.2317	28.152	688	1.0801	-1.0025	2.2471	1.1777	844.4	2418 .639	1.4658	1.2523	870.8	1396 .722
2100	1.6301-5	-604.7	10.2880	28.090	699	1.1007	-1.0032	2.4286	1.1689	852.4	2731 .621	1.4698	1.2522	882.2	1426 .720
2150	1.5880-5	-478.2	10.3475	28.016	709	1.1250	-1.0041	2.6353	1.1607	860.6	3108 .601	1.4734	1.2522	893.9	1455 .718
2200	1.5470-5	-340.8	10.4107	27.927	720	1.1533	-1.0051	2.8681	1.1533	869.1	3558 .580	1.4768	1.2525	905.7	1485 .716
2250	1.5069-5	-191.0	10.4780	27.821	730	1.1857	-1.0064	3.1271	1.1468	878.1	4092 .558	1.4799	1.2530	917.9	1515 .713
2300	1.4675-5	-27.6	10.5498	27.697	740	1.2225	-1.0079	3.4123	1.1411	887.6	4724 .534	1.4827	1.2539	930.4	1545 .710
2350	1.4288-5	150.7	10.6265	27.553	749	1.2639	-1.0096	3.7236	1.1362	897.6	5465 .510	1.4853	1.2550	943.4	1576 .706
2400	1.3906-5	345.2	10.7084	27.387	759	1.3099	-1.0116	4.0608	1.1321	908.2	6327 .487	1.4878	1.2564	956.8	1608 .702
2450	1.3529-5	557.2	10.7958	27.198	768	1.3607	-1.0138	4.4239	1.1288	919.5	7321 .464	1.4900	1.2581	970.7	1642 .697
2500	1.3155-5	788.0	10.8891	26.986	777	1.4165	-1.0164	4.8135	1.1261	931.3	8454 .442	1.4922	1.2602	985.2	1678 .691
2550	1.2783-5	1039.0	10.9884	26.749	785	1.4775	-1.0194	5.2299	1.1241	943.9	9728 .422	1.4943	1.2627	1000.4	1716 .684
2600	1.2414-5	1311.5	11.0942	26.485	794	1.5435	-1.0226	5.6733	1.1226	957.2	11136 .404	1.4964	1.2655	1016.3	1757 .676
2650	1.2046-5	1606.7	11.2067	26.195	802	1.6144	-1.0263	6.1426	1.1215	971.3	12660 .389	1.4986	1.2687	1033.0	1801 .667
2700	1.1680-5	1926.1	11.3261	25.878	810	1.6895	-1.0303	6.6343	1.1210	986.1	14267 .377	1.5008	1.2724	1050.6	1849 .657
2750	1.1316-5	2270.4	11.4524	25.534	818	1.7674	-1.0346	7.1407	1.1208	1001.8	15911 .367	1.5032	1.2765	1069.1	1901 .647
2800	1.0953-5	2640.2	11.5857	25.166	826	1.8461	-1.0392	7.6492	1.1211	1018.4	17527 .360	1.5058	1.2811	1088.6	1957 .635
2850	1.0594-5	3035.1	11.7255	24.775	833	1.9226	-1.0438	8.1411	1.1218	1035.8	19035 .356	1.5085	1.2861	1109.1	2018 .623
2900	1.0239-5	3453.6	11.8710	24.365	841	1.9930	-1.0483	8.5915	1.1230	1054.2	20346 .355	1.5114	1.2916	1130.6	2083 .610
2950	9.8908-6	3893.0	12.0213	23.943	849	2.0527	-1.0524	8.9709	1.1245	1073.3	21367 .356	1.5145	1.2975	1152.9	2152 .597
3000	9.5516-6	4349.0	12.1745	23.513	857	2.0971	-1.0558	9.2474	1.1265	1093.2	22018 .360	1.5177	1.3038	1176.0	2224 .585

TABLE 31.3B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.065046; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8403-4	-2463.9	8.3479	28.361	390	1.0000	-1.0000	1.2667	1.3011	585.9	661	.747	1.2667	1.3011	585.9	661	.747
950	3.6382-4	-2400.2	8.4168	28.361	405	1.0000	-1.0000	1.2812	1.2967	600.9	696	.745	1.2812	1.2967	600.9	696	.745
1000	3.4563-4	-2335.8	8.4829	28.361	420	1.0000	-1.0000	1.2950	1.2926	615.6	731	.744	1.2949	1.2926	615.6	731	.744
1050	3.2917-4	-2270.7	8.5463	28.361	435	1.0000	-1.0000	1.3078	1.2889	629.9	766	.743	1.3078	1.2889	629.9	766	.743
1100	3.1421-4	-2205.0	8.6075	28.361	449	1.0000	-1.0000	1.3201	1.2855	643.8	800	.742	1.3200	1.2855	643.8	800	.742
1150	3.0055-4	-2138.7	8.6664	28.361	464	1.0000	-1.0000	1.3320	1.2822	657.5	834	.741	1.3317	1.2823	657.5	833	.741
1200	2.8802-4	-2071.9	8.7234	28.361	478	1.0000	-1.0000	1.3434	1.2792	670.8	867	.740	1.3429	1.2793	670.9	867	.740
1250	2.7650-4	-2004.4	8.7784	28.361	491	1.0001	-1.0000	1.3545	1.2763	683.9	901	.739	1.3535	1.2765	683.9	900	.739
1300	2.6587-4	-1936.4	8.8317	28.361	505	1.0001	-1.0000	1.3655	1.2735	696.7	934	.738	1.3636	1.2739	696.8	932	.738
1350	2.5602-4	-1867.9	8.8835	28.361	518	1.0002	-1.0000	1.3765	1.2708	709.2	968	.737	1.3732	1.2714	709.4	965	.738
1400	2.4687-4	-1798.7	8.9338	28.361	531	1.0004	-1.0000	1.3878	1.2681	721.4	1002	.736	1.3824	1.2691	721.7	997	.737
1450	2.3836-4	-1729.1	8.9827	28.360	544	1.0006	-1.0000	1.3997	1.2653	733.4	1037	.735	1.3912	1.2670	733.9	1029	.736
1500	2.3040-4	-1658.8	9.0303	28.359	557	1.0010	-1.0000	1.4127	1.2625	745.1	1074	.733	1.3995	1.2650	745.9	1061	.735
1550	2.2296-4	-1587.8	9.0769	28.358	570	1.0015	-1.0000	1.4273	1.2595	756.5	1112	.731	1.4073	1.2632	757.7	1092	.734
1600	2.1598-4	-1516.0	9.1225	28.357	582	1.0023	-1.0001	1.4441	1.2562	767.7	1153	.729	1.4148	1.2614	769.3	1124	.733
1650	2.0942-4	-1443.3	9.1672	28.354	595	1.0034	-1.0001	1.4638	1.2525	778.5	1197	.727	1.4220	1.2598	780.7	1155	.732
1700	2.0324-4	-1369.6	9.2112	28.351	607	1.0049	-1.0001	1.4872	1.2485	788.9	1246	.724	1.4287	1.2583	792.0	1186	.731
1750	1.9740-4	-1294.5	9.2547	28.346	619	1.0069	-1.0002	1.5152	1.2439	799.1	1301	.721	1.4351	1.2569	803.2	1216	.730
1800	1.9187-4	-1217.9	9.2979	28.339	631	1.0095	-1.0003	1.5488	1.2389	808.8	1363	.717	1.4411	1.2556	814.3	1247	.729
1850	1.8663-4	-1139.5	9.3408	28.331	643	1.0129	-1.0004	1.5890	1.2333	818.3	1433	.713	1.4468	1.2545	825.3	1277	.728
1900	1.8164-4	-1058.9	9.3838	28.319	655	1.0173	-1.0005	1.6370	1.2272	827.4	1515	.707	1.4522	1.2534	836.2	1307	.727
1950	1.7689-4	-975.7	9.4271	28.305	666	1.0227	-1.0007	1.6937	1.2206	836.2	1609	.701	1.4573	1.2525	847.0	1337	.726
2000	1.7236-4	-889.4	9.4708	28.286	677	1.0293	-1.0009	1.7603	1.2137	844.7	1718	.694	1.4621	1.2516	857.8	1366	.725
2050	1.6802-4	-799.5	9.5152	28.263	689	1.0375	-1.0011	1.8378	1.2065	853.0	1844	.686	1.4666	1.2509	868.6	1395	.724
2100	1.6385-4	-705.4	9.5605	28.234	700	1.0472	-1.0015	1.9271	1.1992	861.1	1992	.677	1.4708	1.2503	879.3	1424	.723
2150	1.5984-4	-606.5	9.6070	28.199	711	1.0587	-1.0019	2.0290	1.1919	869.2	2163	.667	1.4747	1.2499	890.1	1453	.721
2200	1.5597-4	-502.3	9.6549	28.157	721	1.0721	-1.0024	2.1439	1.1848	877.3	2361	.655	1.4783	1.2496	901.0	1482	.720
2250	1.5223-4	-391.9	9.7045	28.107	732	1.0877	-1.0029	2.2722	1.1780	885.5	2590	.642	1.4817	1.2494	911.9	1510	.718
2300	1.4861-4	-274.8	9.7560	28.047	742	1.1054	-1.0036	2.4139	1.1715	893.7	2854	.628	1.4848	1.2495	923.0	1539	.716
2350	1.4509-4	-150.3	9.8095	27.978	752	1.1253	-1.0044	2.5690	1.1656	902.2	3156	.612	1.4877	1.2496	934.2	1567	.714
2400	1.4166-4	-17.7	9.8654	27.898	763	1.1476	-1.0053	2.7368	1.1602	911.0	3501	.596	1.4903	1.2500	945.6	1596	.712
2450	1.3831-4	123.6	9.9236	27.806	772	1.1722	-1.0064	2.9167	1.1554	920.0	3894	.579	1.4927	1.2505	957.1	1625	.710
2500	1.3504-4	274.1	9.9845	27.702	782	1.1991	-1.0076	3.1080	1.1511	929.4	4338	.560	1.4950	1.2512	968.9	1654	.707
2550	1.3183-4	434.5	10.0480	27.585	792	1.2282	-1.0089	3.3097	1.1475	939.1	4840	.541	1.4970	1.2521	981.0	1684	.704
2600	1.2869-4	605.3	10.1143	27.455	801	1.2597	-1.0104	3.5209	1.1443	949.2	5402	.522	1.4989	1.2532	993.3	1715	.700
2650	1.2560-4	786.8	10.1834	27.311	810	1.2933	-1.0120	3.7412	1.1417	959.7	6030	.503	1.5006	1.2545	1006.0	1746	.696
2700	1.2256-4	979.5	10.2555	27.153	819	1.3291	-1.0138	3.9699	1.1396	970.6	6726	.483	1.5023	1.2560	1019.0	1778	.692
2750	1.1956-4	1183.9	10.3305	26.980	828	1.3672	-1.0158	4.2069	1.1379	982.0	7491	.465	1.5039	1.2577	1032.4	1811	.687
2800	1.1661-4	1400.3	10.4085	26.792	837	1.4075	-1.0179	4.4521	1.1366	993.8	8328	.447	1.5054	1.2597	1046.2	1846	.682
2850	1.1370-4	1629.3	10.4895	26.590	845	1.4500	-1.0203	4.7057	1.1356	1006.0	9232	.431	1.5069	1.2618	1060.4	1882	.676
2900	1.1082-4	1871.0	10.5736	26.372	853	1.4947	-1.0229	4.9673	1.1350	1018.7	10197	.416	1.5085	1.2642	1075.1	1921	.670
2950	1.0799-4	2126.1	10.6608	26.140	862	1.5414	-1.0256	5.2364	1.1347	1031.8	11215	.402	1.5100	1.2668	1090.3	1961	.663
3000	1.0518-4	2394.8	10.7511	25.893	870	1.5899	-1.0286	5.5114	1.1347	1045.5	12270	.391	1.5117	1.2697	1106.0	2004	.656

TABLE 31.4B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.065046; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
900	3.8403-3	-2463.9	7.6729	28.361	390	1.0000	-1.0000	1.2667	1.3011	585.9	661	.747	1.2667	1.3011	585.9	661	.747
950	3.6382-3	-2400.2	7.7418	28.361	405	1.0000	-1.0000	1.2812	1.2967	600.9	696	.745	1.2812	1.2967	600.9	696	.745
1000	3.4563-3	-2335.8	7.8078	28.361	420	1.0000	-1.0000	1.2949	1.2926	615.6	731	.744	1.2949	1.2926	615.6	731	.744
1050	3.2917-3	-2270.7	7.8713	28.361	435	1.0000	-1.0000	1.3078	1.2889	629.9	766	.743	1.3078	1.2889	629.9	766	.743
1100	3.1421-3	-2205.0	7.9324	28.361	449	1.0000	-1.0000	1.3201	1.2855	643.8	800	.742	1.3200	1.2855	643.8	800	.742
1150	3.0055-3	-2138.7	7.9914	28.361	464	1.0000	-1.0000	1.3318	1.2823	657.5	833	.741	1.3317	1.2823	657.5	833	.741
1200	2.8802-3	-2071.9	8.0483	28.361	478	1.0000	-1.0000	1.3431	1.2792	670.8	867	.740	1.3429	1.2793	670.9	867	.740
1250	2.7650-3	-2004.4	8.1034	28.361	491	1.0000	-1.0000	1.3540	1.2764	683.9	900	.739	1.3535	1.2765	683.9	900	.739
1300	2.6587-3	-1936.5	8.1567	28.361	505	1.0001	-1.0000	1.3645	1.2737	696.7	933	.738	1.3636	1.2739	696.8	932	.738
1350	2.5602-3	-1868.0	8.2084	28.361	518	1.0001	-1.0000	1.3748	1.2711	709.3	966	.737	1.3732	1.2714	709.4	965	.738
1400	2.4688-3	-1799.0	8.2585	28.361	531	1.0002	-1.0000	1.3850	1.2686	721.6	999	.736	1.3824	1.2691	721.7	997	.737
1450	2.3836-3	-1729.5	8.3073	28.361	544	1.0003	-1.0000	1.3953	1.2662	733.7	1033	.735	1.3912	1.2670	733.9	1029	.736
1500	2.3041-3	-1659.5	8.3548	28.360	557	1.0005	-1.0000	1.4059	1.2638	745.5	1067	.734	1.3995	1.2650	745.8	1061	.735
1550	2.2298-3	-1588.9	8.4011	28.360	570	1.0007	-1.0000	1.4170	1.2613	757.1	1102	.733	1.4074	1.2631	757.6	1092	.734
1600	2.1600-3	-1517.7	8.4463	28.359	582	1.0011	-1.0000	1.4290	1.2588	768.4	1138	.732	1.4149	1.2614	769.2	1124	.733
1650	2.0945-3	-1446.0	8.4904	28.358	595	1.0016	-1.0000	1.4421	1.2562	779.5	1175	.730	1.4220	1.2597	780.7	1155	.732
1700	2.0328-3	-1373.5	8.5337	28.356	607	1.0023	-1.0001	1.4569	1.2533	790.4	1215	.728	1.4287	1.2582	791.9	1186	.732
1750	1.9745-3	-1300.3	8.5762	28.354	619	1.0033	-1.0001	1.4737	1.2503	801.0	1257	.726	1.4351	1.2568	803.1	1216	.731
1800	1.9195-3	-1226.1	8.6179	28.351	631	1.0045	-1.0001	1.4930	1.2470	811.3	1302	.724	1.4412	1.2555	814.1	1247	.730
1850	1.8673-3	-1150.9	8.6591	28.347	643	1.0061	-1.0002	1.5154	1.2434	821.4	1351	.722	1.4470	1.2542	825.0	1277	.729
1900	1.8178-3	-1074.5	8.6999	28.341	655	1.0082	-1.0002	1.5413	1.2395	831.2	1404	.719	1.4524	1.2531	835.7	1307	.728
1950	1.7708-3	-996.7	8.7403	28.335	666	1.0107	-1.0003	1.5713	1.2353	840.7	1464	.715	1.4576	1.2521	846.4	1337	.727
2000	1.7260-3	-917.3	8.7805	28.326	678	1.0139	-1.0004	1.6060	1.2307	850.0	1529	.712	1.4624	1.2511	857.0	1366	.726
2050	1.6832-3	-836.0	8.8206	28.315	689	1.0177	-1.0005	1.6458	1.2259	859.0	1603	.708	1.4670	1.2503	867.5	1395	.725
2100	1.6424-3	-752.6	8.8608	28.301	700	1.0223	-1.0007	1.6914	1.2208	867.8	1685	.703	1.4713	1.2495	878.0	1424	.723
2150	1.6032-3	-666.8	8.9012	28.285	711	1.0278	-1.0009	1.7431	1.2155	876.5	1777	.698	1.4754	1.2488	888.4	1453	.722
2200	1.5657-3	-578.2	8.9420	28.264	722	1.0343	-1.0011	1.8013	1.2101	884.9	1880	.692	1.4792	1.2482	898.8	1481	.721
2250	1.5296-3	-486.5	8.9832	28.240	733	1.0418	-1.0014	1.8665	1.2046	893.3	1995	.686	1.4827	1.2478	909.2	1509	.720
2300	1.4948-3	-391.4	9.0250	28.212	744	1.0504	-1.0017	1.9387	1.1991	901.5	2125	.678	1.4861	1.2474	919.5	1537	.719
2350	1.4613-3	-292.5	9.0675	28.178	754	1.0602	-1.0021	2.0180	1.1937	909.8	2270	.670	1.4892	1.2471	929.9	1566	.717
2400	1.4289-3	-189.5	9.1109	28.139	764	1.0712	-1.0025	2.1046	1.1885	918.0	2431	.662	1.4921	1.2469	940.3	1593	.716
2450	1.3975-3	-82.0	9.1552	28.095	775	1.0835	-1.0030	2.1981	1.1835	926.3	2610	.652	1.4948	1.2469	950.8	1621	.714
2500	1.3670-3	30.4	9.2006	28.044	785	1.0970	-1.0036	2.2983	1.1788	934.7	2809	.642	1.4973	1.2469	961.4	1649	.712
2550	1.3375-3	148.0	9.2472	27.986	795	1.1119	-1.0042	2.4047	1.1744	943.2	3029	.631	1.4996	1.2471	972.0	1677	.711
2600	1.3087-3	271.0	9.2949	27.921	804	1.1279	-1.0049	2.5169	1.1704	951.9	3270	.619	1.5017	1.2473	982.7	1705	.708
2650	1.2807-3	399.7	9.3440	27.848	814	1.1452	-1.0057	2.6340	1.1668	960.8	3536	.607	1.5037	1.2477	993.6	1733	.706
2700	1.2533-3	534.5	9.3944	27.768	824	1.1636	-1.0066	2.7556	1.1635	969.9	3826	.593	1.5055	1.2483	1004.6	1761	.704
2750	1.2266-3	675.4	9.4461	27.680	833	1.1832	-1.0076	2.8808	1.1606	979.1	4142	.579	1.5072	1.2489	1015.7	1790	.702
2800	1.2005-3	822.6	9.4991	27.584	842	1.2037	-1.0086	3.0089	1.1582	988.7	4486	.565	1.5087	1.2497	1027.0	1818	.699
2850	1.1750-3	976.3	9.5535	27.479	852	1.2252	-1.0097	3.1392	1.1560	998.4	4859	.550	1.5102	1.2506	1038.5	1847	.697
2900	1.1500-3	1136.5	9.6093	27.367	861	1.2476	-1.0109	3.2713	1.1543	1008.5	5262	.535	1.5115	1.2516	1050.1	1876	.694
2950	1.1255-3	1303.4	9.6663	27.246	870	1.2708	-1.0122	3.4047	1.1528	1018.7	5696	.520	1.5128	1.2527	1061.9	1905	.691
3000	1.1015-3	1477.0	9.7247	27.116	879	1.2948	-1.0136	3.5390	1.1516	1029.2	6161	.505	1.5140	1.2540	1074.0	1935	.687

TABLE 31.5B .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.065046; EQUIV. RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
900	1.9202-2	-2463.9	7.2011	28.361	390	1.0000	-1.0000	1.2667	1.3011	585.9	661 .747	1.2667	1.3011	585.9	661 .747
950	1.8191-2	-2400.2	7.2699	28.361	405	1.0000	-1.0000	1.2812	1.2967	600.9	696 .745	1.2812	1.2967	600.9	696 .745
1000	1.7282-2	-2335.8	7.3360	28.361	420	1.0000	-1.0000	1.2949	1.2926	615.6	731 .744	1.2949	1.2926	615.6	731 .744
1050	1.6459-2	-2270.7	7.3995	28.361	435	1.0000	-1.0000	1.3078	1.2889	629.9	766 .743	1.3078	1.2889	629.9	766 .743
1100	1.5711-2	-2205.0	7.4606	28.361	449	1.0000	-1.0000	1.3200	1.2855	643.8	800 .742	1.3200	1.2855	643.8	800 .742
1150	1.5027-2	-2138.7	7.5196	28.361	464	1.0000	-1.0000	1.3318	1.2823	657.5	833 .741	1.3317	1.2823	657.5	833 .741
1200	1.4401-2	-2071.9	7.5765	28.361	478	1.0000	-1.0000	1.3430	1.2793	670.8	867 .740	1.3429	1.2793	670.8	867 .740
1250	1.3825-2	-2004.5	7.6315	28.361	491	1.0000	-1.0000	1.3538	1.2764	683.9	900 .739	1.3535	1.2765	683.9	900 .739
1300	1.3293-2	-1936.5	7.6848	28.361	505	1.0000	-1.0000	1.3641	1.2738	696.7	933 .738	1.3636	1.2739	696.8	932 .738
1350	1.2801-2	-1868.1	7.7365	28.361	518	1.0001	-1.0000	1.3742	1.2712	709.3	966 .737	1.3733	1.2714	709.4	965 .738
1400	1.2344-2	-1799.1	7.7866	28.361	531	1.0001	-1.0000	1.3840	1.2688	721.6	999 .736	1.3824	1.2691	721.7	997 .737
1450	1.1918-2	-1729.6	7.8354	28.361	544	1.0002	-1.0000	1.3937	1.2665	733.7	1031 .736	1.3912	1.2670	733.9	1029 .736
1500	1.1521-2	-1659.7	7.8828	28.361	557	1.0003	-1.0000	1.4033	1.2642	745.6	1064 .735	1.3995	1.2650	745.8	1061 .735
1550	1.1149-2	-1589.3	7.9290	28.360	570	1.0004	-1.0000	1.4132	1.2620	757.3	1098 .734	1.4074	1.2631	757.6	1092 .734
1600	1.0800-2	-1518.4	7.9740	28.360	582	1.0007	-1.0000	1.4234	1.2598	768.7	1132 .732	1.4149	1.2614	769.2	1124 .733
1650	1.0473-2	-1447.0	8.0180	28.359	595	1.0010	-1.0000	1.4342	1.2575	780.0	1167 .731	1.4220	1.2597	780.6	1155 .732
1700	1.0165-2	-1375.0	8.0609	28.358	607	1.0014	-1.0000	1.4458	1.2552	791.0	1203 .730	1.4287	1.2582	791.9	1186 .732
1750	9.8736-3	-1302.4	8.1030	28.357	619	1.0019	-1.0000	1.4585	1.2528	801.7	1240 .728	1.4352	1.2568	803.0	1216 .731
1800	9.5987-3	-1229.1	8.1443	28.355	631	1.0027	-1.0001	1.4726	1.2502	812.3	1280 .726	1.4412	1.2554	814.0	1247 .730
1850	9.3385-3	-1155.1	8.1849	28.353	643	1.0036	-1.0001	1.4884	1.2474	822.7	1321 .725	1.4470	1.2542	824.9	1277 .729
1900	9.0917-3	-1080.2	8.2248	28.349	655	1.0049	-1.0001	1.5063	1.2445	832.8	1365 .722	1.4525	1.2530	835.6	1307 .728
1950	8.8573-3	-1004.4	8.2642	28.345	666	1.0064	-1.0002	1.5265	1.2414	842.6	1412 .720	1.4576	1.2519	846.2	1337 .727
2000	8.6343-3	-927.5	8.3031	28.340	678	1.0083	-1.0002	1.5494	1.2380	852.3	1463 .718	1.4625	1.2509	856.7	1366 .726
2050	8.4217-3	-849.4	8.3417	28.334	689	1.0106	-1.0003	1.5754	1.2344	861.7	1518 .715	1.4671	1.2500	867.2	1395 .725
2100	8.2189-3	-769.9	8.3800	28.325	700	1.0133	-1.0004	1.6047	1.2306	871.0	1579 .712	1.4715	1.2492	877.5	1424 .724
2150	8.0249-3	-688.9	8.4181	28.315	711	1.0166	-1.0005	1.6378	1.2267	880.0	1644 .709	1.4756	1.2484	887.8	1452 .723
2200	7.8392-3	-606.1	8.4562	28.303	722	1.0205	-1.0007	1.6749	1.2225	888.9	1716 .705	1.4795	1.2477	898.0	1481 .722
2250	7.6611-3	-521.3	8.4943	28.289	733	1.0250	-1.0008	1.7161	1.2182	897.5	1795 .701	1.4831	1.2471	908.1	1509 .721
2300	7.4900-3	-434.4	8.5325	28.272	744	1.0302	-1.0010	1.7618	1.2138	906.1	1882 .696	1.4866	1.2466	918.3	1537 .719
2350	7.3254-3	-345.1	8.5709	28.252	755	1.0361	-1.0012	1.8120	1.2094	914.5	1977 .691	1.4898	1.2462	928.4	1565 .718
2400	7.1669-3	-253.1	8.6096	28.228	765	1.0428	-1.0015	1.8669	1.2049	922.9	2082 .686	1.4928	1.2458	938.4	1593 .717
2450	7.0139-3	-158.3	8.6487	28.201	775	1.0504	-1.0018	1.9264	1.2006	931.2	2196 .680	1.4957	1.2455	948.5	1621 .716
2500	6.8660-3	-60.4	8.6883	28.170	786	1.0587	-1.0021	1.9904	1.1963	939.5	2321 .674	1.4983	1.2453	958.6	1648 .714
2550	6.7230-3	40.8	8.7284	28.135	796	1.0680	-1.0025	2.0588	1.1922	947.8	2457 .667	1.5008	1.2452	968.7	1676 .713
2600	6.5844-3	145.6	8.7691	28.095	806	1.0781	-1.0030	2.1315	1.1882	956.2	2605 .659	1.5031	1.2452	978.8	1704 .711
2650	6.4499-3	254.0	8.8104	28.051	816	1.0890	-1.0035	2.2080	1.1845	964.6	2765 .651	1.5052	1.2452	989.0	1731 .709
2700	6.3192-3	366.4	8.8524	28.001	825	1.1007	-1.0040	2.2879	1.1810	973.1	2938 .643	1.5072	1.2453	999.2	1759 .708
2750	6.1922-3	482.9	8.8951	27.946	835	1.1133	-1.0046	2.3710	1.1778	981.6	3124 .634	1.5091	1.2456	1009.5	1786 .706
2800	6.0685-3	603.6	8.9386	27.886	845	1.1266	-1.0052	2.4566	1.1748	990.4	3324 .624	1.5108	1.2459	1019.9	1813 .704
2850	5.9479-3	728.6	8.9829	27.820	854	1.1406	-1.0059	2.5443	1.1722	999.2	3538 .614	1.5124	1.2463	1030.3	1840 .702
2900	5.8304-3	858.0	9.0279	27.749	864	1.1552	-1.0067	2.6335	1.1698	1008.2	3767 .604	1.5139	1.2468	1040.8	1867 .700
2950	5.7156-3	991.9	9.0737	27.671	873	1.1704	-1.0075	2.7236	1.1677	1017.4	4011 .593	1.5153	1.2473	1051.5	1894 .698
3000	5.6036-3	1130.4	9.1202	27.589	882	1.1862	-1.0083	2.8144	1.1660	1026.7	4270 .581	1.5166	1.2480	1062.2	1921 .696

TABLE 31C .- LOW TEMPERATURE PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.065046; EQUIV.RATIO = 1.000; CHEM. EQUIV. RATIO = 1.0000;
WET AIR (W/A= 0.03)

	HETEROGENEOUS PHASE PROPERTIES					GAS PHASE PROPERTIES										
T	DENSITY	H	ENTROPY	MW	CP	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	T
K	G/CM3	J/G	J/G K		J/G K	G/CM3		POISE			J/G K		M/S	W/CM K		K
						PRESSURE = 0.01 ATM										
200	2.086-5	-3584.5	6.7517	28.361	1.0743	1.859-5	30.505	129	1.000	-1.000	0.9731	1.3890	275	170	.735	200
220	1.892-5	-3559.9	6.8686	28.361	1.5539	1.688-5	30.475	139	1.000	-1.000	0.9777	1.3871	289	186	.731	220
240	1.692-5	-3501.3	7.1210	28.361	5.5912	1.532-5	30.173	147	1.000	-1.000	0.9938	1.3837	303	199	.736	240
						PRESSURE = 0.10 ATM										
200	2.087-4	-3584.7	6.1915	28.361	1.0414	1.859-4	30.507	129	1.000	-1.000	0.9730	1.3891	275	170	.734	200
220	1.896-4	-3563.4	6.2930	28.361	1.1060	1.690-4	30.504	140	1.000	-1.000	0.9765	1.3872	288	187	.730	220
240	1.734-4	-3538.4	6.4013	28.361	1.5058	1.547-4	30.474	150	1.000	-1.000	0.9812	1.3851	301	203	.728	240
260	1.574-4	-3491.4	6.5882	28.361	3.8118	1.419-4	30.267	159	1.000	-1.000	0.9936	1.3821	314	216	.730	260
280	1.345-4	-3319.5	7.2208	28.361	11.9500	1.275-4	29.290	160	1.000	-1.000	1.0397	1.3755	331	221	.752	280
						PRESSURE = 1.00 ATM										
200	2.086-3	-3584.7	5.6323	28.361	1.0381	1.859-3	30.507	129	1.000	-1.000	0.9730	1.3891	275	170	.734	200
220	1.896-3	-3563.7	5.7323	28.361	1.0614	1.690-3	30.507	140	1.000	-1.000	0.9764	1.3872	288	187	.730	220
240	1.738-3	-3542.0	5.8266	28.361	1.1187	1.549-3	30.504	151	1.000	-1.000	0.9800	1.3853	301	203	.727	240
260	1.602-3	-3517.8	5.9233	28.361	1.3581	1.429-3	30.483	161	1.000	-1.000	0.9846	1.3832	313	219	.725	260
280	1.476-3	-3447.8	6.1809	28.361	2.2189	1.322-3	30.386	170	1.000	-1.000	0.9925	1.3806	325	233	.726	280
298	1.356-3	-3395.1	6.3628	28.361	3.8374	1.231-3	30.119	177	1.000	-1.000	1.0074	1.3775	337	243	.731	298
300	1.343-3	-3387.7	6.3873	28.361	4.1025	1.222-3	30.074	177	1.000	-1.000	1.0097	1.3771	338	244	.732	300
320	1.169-3	-3262.0	6.7912	28.361	9.3923	1.113-3	29.217	179	1.000	-1.000	1.0515	1.3710	353	250	.752	320
						PRESSURE = 10.00 ATM										
200	2.081-2	-3584.7	5.0732	28.361	1.0377	1.859-2	30.507	129	1.000	-1.000	0.9730	1.3891	275	170	.734	200
220	1.893-2	-3563.8	5.1730	28.361	1.0570	1.690-2	30.507	140	1.000	-1.000	0.9763	1.3872	288	187	.730	220
240	1.735-2	-3542.4	5.2659	28.361	1.0802	1.549-2	30.507	151	1.000	-1.000	0.9799	1.3853	301	203	.727	240
260	1.602-2	-3520.4	5.3538	28.361	1.1220	1.430-2	30.505	161	1.000	-1.000	0.9837	1.3833	313	219	.724	260
280	1.487-2	-3459.4	5.5783	28.361	1.4250	1.327-2	30.495	171	1.000	-1.000	0.9880	1.3812	325	234	.723	280
298	1.393-2	-3432.3	5.6718	28.361	1.5752	1.245-2	30.468	180	1.000	-1.000	0.9928	1.3791	335	247	.723	298
300	1.384-2	-3429.4	5.6816	28.361	1.5987	1.238-2	30.464	181	1.000	-1.000	0.9933	1.3788	336	248	.723	300
320	1.289-2	-3393.9	5.7960	28.361	2.0024	1.157-2	30.378	190	1.000	-1.000	1.0012	1.3762	347	261	.726	320
340	1.193-2	-3346.5	5.9396	28.361	2.8361	1.082-2	30.176	197	1.000	-1.000	1.0141	1.3731	359	273	.731	340
360	1.088-2	-3275.3	6.1426	28.361	4.4630	1.007-2	29.752	202	1.000	-1.000	1.0370	1.3689	371	283	.741	360
380	9.613-3	-3157.5	6.4601	28.361	7.6921	9.285-3	28.953	204	1.000	-1.000	1.0779	1.3632	386	291	.757	380
						PRESSURE = 50.00 ATM										
200	1.031-1	-3584.7	4.6825	28.361	1.0377	9.295-2	30.507	129	1.000	-1.000	0.9730	1.3891	275	170	.734	200
220	9.379-2	-3563.8	4.7823	28.361	1.0566	8.450-2	30.507	140	1.000	-1.000	0.9763	1.3872	288	187	.730	220
240	8.605-2	-3542.4	4.8750	28.361	1.0768	7.745-2	30.507	151	1.000	-1.000	0.9799	1.3853	301	203	.727	240
260	7.949-2	-3520.7	4.9621	28.361	1.1011	7.150-2	30.507	161	1.000	-1.000	0.9836	1.3833	313	219	.724	260
280	7.391-2	-3460.4	5.1837	28.361	1.3558	6.638-2	30.505	171	1.000	-1.000	0.9876	1.3812	325	234	.723	280
298	6.941-2	-3435.5	5.2697	28.361	1.3863	6.233-2	30.500	180	1.000	-1.000	0.9915	1.3792	335	247	.722	298
300	6.898-2	-3433.0	5.2782	28.361	1.3911	6.195-2	30.499	181	1.000	-1.000	0.9919	1.3790	336	249	.722	300
320	6.461-2	-3404.4	5.3703	28.361	1.4725	5.804-2	30.482	191	1.000	-1.000	0.9969	1.3767	347	263	.723	320
340	6.064-2	-3373.6	5.4639	28.361	1.6326	5.456-2	30.441	199	1.000	-1.000	1.0030	1.3742	357	276	.725	340
360	5.691-2	-3338.3	5.5645	28.361	1.9154	5.138-2	30.356	208	1.000	-1.000	1.0111	1.3715	368	289	.728	360
380	5.326-2	-3295.7	5.6795	28.361	2.3785	4.842-2	30.197	215	1.000	-1.000	1.0226	1.3685	378	301	.732	380
400	4.949-2	-3241.5	5.8186	28.361	3.1028	4.558-2	29.920	221	1.000	-1.000	1.0394	1.3649	390	312	.737	400
420	4.544-2	-3169.0	5.9950	28.361	4.2190	4.276-2	29.476	226	1.000	-1.000	1.0643	1.3606	401	323	.746	420

TABLE 32.1D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
200	1.7267-5	-3266.1	8.0230	28.338	110	1.0000	-1.0000	1.0699	1.3779	284.3	149	.792	1.0699	1.3779	284.3	149	.792
210	1.6445-5	-3255.4	8.0752	28.338	116	1.0000	-1.0000	1.0717	1.3770	291.3	158	.787	1.0717	1.3770	291.3	158	.787
220	1.5698-5	-3244.6	8.1251	28.338	121	1.0000	-1.0000	1.0736	1.3761	298.0	166	.783	1.0736	1.3761	298.0	166	.783
230	1.5015-5	-3233.9	8.1729	28.338	126	1.0000	-1.0000	1.0756	1.3751	304.6	175	.779	1.0756	1.3751	304.6	175	.779
240	1.4390-5	-3223.1	8.2187	28.338	132	1.0000	-1.0000	1.0777	1.3741	311.1	183	.776	1.0777	1.3741	311.1	183	.776
250	1.3814-5	-3212.3	8.2627	28.338	137	1.0000	-1.0000	1.0800	1.3730	317.3	191	.773	1.0798	1.3731	317.4	191	.773
260	1.3283-5	-3201.5	8.3051	28.338	142	1.0000	-1.0000	1.0823	1.3719	323.5	200	.770	1.0821	1.3720	323.5	199	.771
270	1.2791-5	-3190.7	8.3460	28.338	147	1.0000	-1.0000	1.0849	1.3707	329.5	208	.768	1.0844	1.3709	329.5	207	.769
280	1.2334-5	-3179.8	8.3855	28.338	152	1.0001	-1.0000	1.0877	1.3695	335.4	216	.766	1.0868	1.3698	335.5	215	.768
290	1.1909-5	-3168.9	8.4238	28.338	157	1.0001	-1.0000	1.0908	1.3681	341.2	224	.764	1.0893	1.3686	341.3	223	.767
298	1.1583-5	-3160.0	8.4540	28.338	161	1.0002	-1.0000	1.0936	1.3669	345.8	231	.762	1.0914	1.3677	345.9	229	.766
300	1.1512-5	-3158.0	8.4608	28.338	162	1.0002	-1.0000	1.0943	1.3666	346.8	233	.762	1.0919	1.3675	346.9	231	.766
310	1.1140-5	-3147.1	8.4967	28.338	167	1.0004	-1.0000	1.0984	1.3649	352.3	241	.759	1.0945	1.3663	352.5	238	.766
320	1.0792-5	-3136.0	8.5317	28.337	171	1.0007	-1.0000	1.1032	1.3629	357.7	250	.756	1.0972	1.3650	358.0	246	.766
330	1.0464-5	-3125.0	8.5657	28.336	176	1.0010	-1.0000	1.1091	1.3607	363.0	260	.751	1.0999	1.3638	363.4	253	.766
340	1.0156-5	-3113.9	8.5989	28.335	181	1.0016	-1.0001	1.1164	1.3580	368.1	271	.744	1.1028	1.3626	368.7	260	.766
350	9.8656-6	-3102.7	8.6314	28.334	185	1.0023	-1.0001	1.1254	1.3548	373.0	284	.735	1.1057	1.3613	373.9	268	.766
360	9.5908-6	-3091.3	8.6633	28.332	190	1.0034	-1.0001	1.1366	1.3510	377.8	299	.723	1.1087	1.3600	379.1	275	.765
370	9.3305-6	-3079.9	8.6946	28.328	195	1.0048	-1.0002	1.1505	1.3466	382.4	316	.708	1.1117	1.3587	384.1	283	.764
380	9.0836-6	-3068.3	8.7255	28.324	199	1.0067	-1.0003	1.1678	1.3414	386.8	337	.690	1.1149	1.3574	389.1	291	.763
390	8.8489-6	-3056.5	8.7561	28.318	204	1.0092	-1.0004	1.1891	1.3354	391.0	362	.669	1.1181	1.3561	394.1	299	.761
400	8.6253-6	-3044.5	8.7865	28.311	208	1.0125	-1.0005	1.2152	1.3285	395.0	391	.647	1.1215	1.3548	398.9	307	.760
410	8.4119-6	-3032.2	8.8169	28.300	212	1.0166	-1.0007	1.2469	1.3207	398.9	425	.623	1.1249	1.3535	403.8	315	.759
420	8.2079-6	-3019.6	8.8474	28.287	217	1.0217	-1.0009	1.2848	1.3122	402.5	464	.599	1.1285	1.3522	408.6	323	.757
430	8.0123-6	-3006.5	8.8781	28.271	221	1.0279	-1.0012	1.3297	1.3030	405.9	510	.575	1.1322	1.3509	413.3	331	.756
440	7.8246-6	-2993.0	8.9093	28.251	225	1.0354	-1.0015	1.3821	1.2933	409.2	563	.553	1.1361	1.3496	418.1	339	.754
450	7.6438-6	-2978.8	8.9410	28.225	229	1.0444	-1.0019	1.4426	1.2833	412.5	621	.532	1.1401	1.3484	422.8	347	.752
460	7.4696-6	-2964.1	8.9735	28.195	233	1.0547	-1.0024	1.5113	1.2733	415.6	686	.514	1.1444	1.3471	427.5	356	.749
470	7.3011-6	-2948.6	9.0068	28.158	237	1.0666	-1.0030	1.5878	1.2635	418.7	754	.500	1.1488	1.3460	432.2	365	.747
480	7.1380-6	-2932.3	9.0411	28.115	241	1.0798	-1.0036	1.6716	1.2541	421.9	826	.489	1.1534	1.3448	436.9	374	.744
490	6.9798-6	-2915.1	9.0765	28.064	245	1.0942	-1.0044	1.7614	1.2453	425.2	898	.482	1.1582	1.3437	441.7	384	.740
500	6.8262-6	-2897.0	9.1130	28.007	250	1.1094	-1.0052	1.8553	1.2373	428.6	967	.479	1.1632	1.3427	446.4	394	.736
510	6.6768-6	-2878.0	9.1507	27.942	254	1.1251	-1.0060	1.9505	1.2302	432.1	1032	.479	1.1685	1.3417	451.2	405	.731
520	6.5316-6	-2858.0	9.1894	27.870	258	1.1405	-1.0068	2.0433	1.2241	435.8	1087	.484	1.1739	1.3407	456.1	416	.726
530	6.3903-6	-2837.2	9.2292	27.792	262	1.1549	-1.0076	2.1291	1.2192	439.7	1129	.493	1.1794	1.3399	460.9	428	.721
540	6.2531-6	-2815.5	9.2697	27.708	265	1.1670	-1.0084	2.2022	1.2154	443.8	1155	.506	1.1850	1.3391	465.8	440	.716
550	6.1201-6	-2793.2	9.3106	27.621	269	1.1757	-1.0089	2.2554	1.2130	448.1	1162	.523	1.1908	1.3383	470.7	452	.710
560	5.9916-6	-2770.5	9.3515	27.532	273	1.1794	-1.0092	2.2804	1.2121	452.8	1146	.544	1.1964	1.3376	475.6	464	.705
570	5.8679-6	-2747.7	9.3919	27.445	277	1.1765	-1.0091	2.2683	1.2132	457.7	1106	.568	1.2020	1.3370	480.5	476	.700
580	5.7495-6	-2725.3	9.4309	27.364	281	1.1656	-1.0086	2.2112	1.2166	463.0	1042	.596	1.2074	1.3363	485.3	488	.695
590	5.6369-6	-2703.7	9.4678	27.290	285	1.1462	-1.0077	2.1064	1.2230	468.9	960	.624	1.2124	1.3356	490.0	499	.691

TABLE 32.1D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	VS	COND MICRO PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
600	5.5306-6	-2683.3	9.5021	27.229	288	1.1199	-1.0064	1.9624	1.2327	475.2	870	.650	1.2171	1.3349	494.5	510 .688
610	5.4304-6	-2664.5	9.5332	27.182	292	1.0904	-1.0048	1.8011	1.2455	482.1	785	.670	1.2214	1.3341	498.9	520 .686
620	5.3362-6	-2647.2	9.5612	27.148	295	1.0627	-1.0034	1.6512	1.2596	489.1	715	.682	1.2253	1.3332	503.1	529 .684
630	5.2472-6	-2631.3	9.5867	27.126	299	1.0407	-1.0022	1.5333	1.2727	495.7	667	.687	1.2289	1.3323	507.2	537 .683
640	5.1626-6	-2616.4	9.6101	27.112	302	1.0251	-1.0014	1.4528	1.2828	501.8	638	.688	1.2322	1.3313	511.2	545 .683
650	5.0816-6	-2602.2	9.6322	27.104	306	1.0151	-1.0008	1.4033	1.2893	507.0	624	.688	1.2354	1.3303	515.0	553 .683
660	5.0037-6	-2588.3	9.6534	27.099	309	1.0089	-1.0005	1.3756	1.2929	511.7	619	.687	1.2385	1.3293	518.8	561 .683
670	4.9285-6	-2574.6	9.6740	27.096	313	1.0053	-1.0003	1.3616	1.2944	515.9	620	.687	1.2415	1.3283	522.6	568 .683
680	4.8558-6	-2561.0	9.6941	27.094	316	1.0031	-1.0002	1.3556	1.2947	519.8	624	.687	1.2445	1.3273	526.3	575 .684
690	4.7852-6	-2547.5	9.7139	27.094	319	1.0019	-1.0001	1.3543	1.2942	523.5	630	.687	1.2474	1.3263	529.9	582 .684
700	4.7168-6	-2533.9	9.7334	27.093	323	1.0011	-1.0001	1.3555	1.2934	527.1	637	.687	1.2504	1.3253	533.6	589 .685
710	4.6503-6	-2520.4	9.7526	27.093	326	1.0007	-1.0000	1.3580	1.2924	530.7	644	.687	1.2533	1.3243	537.2	596 .685
720	4.5856-6	-2506.8	9.7717	27.092	329	1.0004	-1.0000	1.3612	1.2914	534.2	652	.687	1.2562	1.3233	540.7	603 .686
730	4.5228-6	-2493.1	9.7905	27.092	333	1.0003	-1.0000	1.3647	1.2903	537.6	660	.687	1.2591	1.3223	544.3	610 .686
740	4.4617-6	-2479.5	9.8090	27.092	336	1.0002	-1.0000	1.3683	1.2893	541.1	668	.688	1.2620	1.3213	547.8	617 .687
750	4.4022-6	-2465.8	9.8274	27.092	339	1.0001	-1.0000	1.3717	1.2883	544.5	676	.688	1.2649	1.3203	551.3	624 .687
760	4.3442-6	-2452.0	9.8456	27.092	342	1.0001	-1.0000	1.3750	1.2874	548.0	684	.688	1.2678	1.3194	554.7	631 .688
770	4.2878-6	-2438.3	9.8636	27.092	346	1.0000	-1.0000	1.3782	1.2865	551.4	692	.688	1.2706	1.3184	558.2	638 .688
780	4.2329-6	-2424.5	9.8814	27.092	349	1.0000	-1.0000	1.3811	1.2857	554.8	700	.688	1.2735	1.3175	561.6	645 .689
790	4.1793-6	-2410.7	9.8990	27.092	352	1.0000	-1.0000	1.3839	1.2850	558.2	707	.689	1.2763	1.3166	565.0	652 .689
800	4.1270-6	-2396.8	9.9165	27.092	355	1.0000	-1.0000	1.3865	1.2843	561.5	715	.689	1.2791	1.3157	568.3	659 .689
810	4.0761-6	-2382.9	9.9337	27.092	358	1.0000	-1.0000	1.3889	1.2837	564.9	722	.689	1.2819	1.3148	571.7	665 .690
820	4.0264-6	-2369.0	9.9508	27.092	361	1.0000	-1.0000	1.3911	1.2831	568.2	729	.689	1.2847	1.3139	575.0	672 .691
830	3.9779-6	-2355.1	9.9676	27.092	364	1.0000	-1.0000	1.3932	1.2825	571.6	736	.689	1.2875	1.3130	578.3	679 .691
840	3.9305-6	-2341.2	9.9843	27.092	368	1.0000	-1.0000	1.3951	1.2820	574.9	743	.690	1.2902	1.3121	581.6	686 .692
850	3.8843-6	-2327.2	10.0008	27.092	371	1.0000	-1.0000	1.3969	1.2816	578.2	750	.690	1.2930	1.3112	584.8	692 .692
860	3.8391-6	-2313.2	10.0172	27.092	374	1.0000	-1.0000	1.3985	1.2811	581.5	757	.690	1.2957	1.3104	588.1	699 .693
870	3.7950-6	-2299.2	10.0334	27.092	377	1.0000	-1.0000	1.4001	1.2807	584.8	764	.691	1.2984	1.3095	591.3	705 .693
880	3.7518-6	-2285.2	10.0494	27.092	380	1.0000	-1.0000	1.4015	1.2804	588.0	770	.691	1.3011	1.3087	594.5	712 .694
890	3.7097-6	-2271.2	10.0652	27.092	383	1.0000	-1.0000	1.4029	1.2800	591.3	777	.691	1.3037	1.3079	597.7	719 .694
900	3.6685-6	-2257.2	10.0809	27.092	386	1.0000	-1.0000	1.4041	1.2797	594.5	783	.691	1.3064	1.3070	600.8	725 .695
910	3.6282-6	-2243.1	10.0964	27.092	389	1.0000	-1.0000	1.4053	1.2794	597.7	790	.692	1.3090	1.3062	604.0	732 .695
920	3.5887-6	-2229.1	10.1118	27.092	392	1.0000	-1.0000	1.4064	1.2791	601.0	796	.692	1.3116	1.3055	607.1	739 .696
930	3.5501-6	-2215.0	10.1270	27.092	395	1.0000	-1.0000	1.4075	1.2788	604.1	803	.692	1.3142	1.3047	610.2	745 .696
940	3.5124-6	-2200.9	10.1421	27.092	398	1.0000	-1.0000	1.4085	1.2786	607.3	809	.693	1.3168	1.3039	613.3	752 .697
950	3.4754-6	-2186.8	10.1570	27.092	401	1.0000	-1.0000	1.4095	1.2783	610.5	815	.693	1.3193	1.3031	616.4	758 .697
960	3.4392-6	-2172.7	10.1717	27.092	404	1.0000	-1.0000	1.4104	1.2781	613.6	821	.693	1.3218	1.3024	619.4	765 .698
970	3.4037-6	-2158.6	10.1864	27.092	407	1.0000	-1.0000	1.4113	1.2779	616.8	827	.693	1.3243	1.3016	622.5	771 .698
980	3.3690-6	-2144.5	10.2008	27.092	409	1.0000	-1.0000	1.4121	1.2777	619.9	833	.694	1.3267	1.3009	625.5	778 .699
990	3.3350-6	-2130.4	10.2152	27.092	412	1.0000	-1.0000	1.4129	1.2775	623.0	839	.694	1.3292	1.3002	628.5	784 .699

TABLE 32.1D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3016-6	-2116.2	10.2294	27.092	415	1.0000	-1.0000	1.4137	1.2773	626.1	845	.694	1.3316	1.2995	631.5	791	.699
1050	3.1444-6	-2045.5	10.2984	27.092	429	1.0000	-1.0000	1.4173	1.2764	641.3	875	.696	1.3431	1.2962	646.3	823	.701
1100	3.0015-6	-1974.5	10.3645	27.092	443	1.0000	-1.0000	1.4210	1.2755	656.2	904	.697	1.3543	1.2930	660.7	855	.703
1150	2.8710-6	-1903.4	10.4277	27.092	457	1.0000	-1.0000	1.4248	1.2745	670.7	933	.698	1.3650	1.2900	674.8	887	.704
1200	2.7513-6	-1832.0	10.4884	27.092	471	1.0000	-1.0000	1.4289	1.2735	684.8	962	.699	1.3753	1.2872	688.5	918	.705
1250	2.6413-6	-1760.5	10.5468	27.092	484	1.0000	-1.0000	1.4332	1.2725	698.7	991	.700	1.3852	1.2846	702.0	950	.706
1300	2.5397-6	-1688.7	10.6031	27.092	497	1.0000	-1.0000	1.4378	1.2714	712.2	1020	.701	1.3947	1.2821	715.2	981	.707
1350	2.4456-6	-1616.7	10.6575	27.092	510	1.0000	-1.0000	1.4428	1.2702	725.4	1050	.701	1.4038	1.2798	728.2	1013	.707
1400	2.3583-6	-1544.4	10.7101	27.092	523	1.0001	-1.0000	1.4481	1.2690	738.4	1081	.701	1.4126	1.2776	740.9	1044	.708
1450	2.2770-6	-1471.9	10.7610	27.092	536	1.0002	-1.0000	1.4540	1.2677	751.1	1113	.700	1.4209	1.2755	753.4	1075	.708
1500	2.2010-6	-1399.0	10.8104	27.092	549	1.0003	-1.0000	1.4606	1.2662	763.5	1147	.698	1.4289	1.2735	765.7	1106	.709
1550	2.1300-6	-1325.8	10.8584	27.091	561	1.0006	-1.0000	1.4683	1.2646	775.6	1185	.695	1.4365	1.2717	777.8	1137	.709
1600	2.0634-6	-1252.1	10.9052	27.090	573	1.0010	-1.0000	1.4778	1.2628	787.5	1229	.690	1.4438	1.2700	789.7	1168	.709
1650	2.0008-6	-1178.0	10.9508	27.089	586	1.0017	-1.0001	1.4900	1.2605	799.0	1280	.682	1.4508	1.2683	801.4	1199	.709
1700	1.9418-6	-1103.1	10.9955	27.087	598	1.0029	-1.0001	1.5065	1.2576	810.1	1343	.671	1.4574	1.2668	813.0	1230	.708
1750	1.8861-6	-1027.2	11.0395	27.085	610	1.0047	-1.0001	1.5293	1.2539	820.7	1422	.656	1.4637	1.2654	824.5	1261	.708
1800	1.8334-6	-950.0	11.0830	27.080	622	1.0075	-1.0002	1.5622	1.2488	830.8	1524	.637	1.4698	1.2641	835.8	1291	.708
1850	1.7834-6	-870.7	11.1265	27.073	633	1.0119	-1.0004	1.6108	1.2420	840.0	1660	.615	1.4755	1.2628	847.0	1322	.707
1900	1.7358-6	-788.5	11.1703	27.062	645	1.0189	-1.0006	1.6845	1.2327	848.3	1842	.590	1.4810	1.2617	858.2	1353	.706
1950	1.6902-6	-701.6	11.2154	27.045	657	1.0302	-1.0010	1.7978	1.2203	855.3	2094	.564	1.4862	1.2608	869.4	1385	.705
2000	1.6463-6	-607.7	11.2630	27.019	668	1.0482	-1.0015	1.9731	1.2045	861.0	2447	.539	1.4912	1.2600	880.6	1417	.703
2050	1.6038-6	-502.8	11.3148	26.978	679	1.0764	-1.0025	2.2400	1.1861	865.7	2949	.516	1.4960	1.2595	892.0	1449	.701
2100	1.5620-6	-381.6	11.3731	26.916	690	1.1187	-1.0040	2.6279	1.1671	870.1	3657	.496	1.5004	1.2593	903.8	1482	.699
2150	1.5204-6	-237.7	11.4408	26.823	701	1.1775	-1.0061	3.1511	1.1499	875.4	4631	.477	1.5046	1.2595	916.2	1516	.695
2200	1.4785-6	-64.5	11.5205	26.691	711	1.2525	-1.0088	3.7965	1.1362	882.4	5909	.457	1.5085	1.2602	929.3	1552	.691
2250	1.4361-6	143.4	11.6139	26.515	721	1.3409	-1.0123	4.5334	1.1263	891.4	7504	.435	1.5121	1.2616	943.5	1591	.685
2300	1.3929-6	389.9	11.7222	26.289	730	1.4399	-1.0163	5.3350	1.1194	902.4	9408	.414	1.5156	1.2637	958.8	1633	.677
2350	1.3489-6	677.8	11.8460	26.011	739	1.5481	-1.0209	6.1885	1.1147	915.1	11605	.394	1.5190	1.2665	975.4	1679	.668
2400	1.3041-6	1009.6	11.9857	25.682	747	1.6646	-1.0261	7.0901	1.1117	929.4	14063	.377	1.5224	1.2701	993.4	1730	.657
2450	1.2585-6	1387.5	12.1415	25.301	755	1.7881	-1.0318	8.0347	1.1099	945.3	16718	.363	1.5259	1.2745	1013.0	1788	.645
2500	1.2123-6	1813.5	12.3136	24.869	763	1.9158	-1.0380	9.0068	1.1090	962.8	19463	.353	1.5296	1.2797	1034.2	1852	.630
2550	1.1657-6	2288.1	12.5015	24.391	770	2.0425	-1.0444	9.9725	1.1089	981.8	22135	.347	1.5337	1.2858	1057.2	1924	.614
2600	1.1191-6	2809.7	12.7041	23.875	778	2.1602	-1.0508	10.8750	1.1095	1002.3	24517	.345	1.5380	1.2927	1081.9	2002	.597
2650	1.0729-6	3373.2	12.9187	23.330	785	2.2581	-1.0565	11.6340	1.1108	1024.2	26360	.346	1.5426	1.3004	1108.2	2087	.580
2700	1.0279-6	3969.1	13.1415	22.773	792	2.3242	-1.0610	12.1544	1.1127	1047.3	27424	.351	1.5475	1.3088	1135.9	2177	.563
2750	9.8467-7	4583.2	13.3668	22.220	799	2.3475	-1.0635	12.3457	1.1154	1071.4	27536	.358	1.5525	1.3176	1164.4	2269	.547
2800	9.4404-7	5197.2	13.5881	21.690	807	2.3219	-1.0638	12.1492	1.1189	1095.9	26652	.368	1.5576	1.3264	1193.2	2360	.533
2850	9.0655-7	5791.6	13.7985	21.201	815	2.2485	-1.0617	11.5641	1.1233	1120.5	24886	.379	1.5625	1.3351	1221.6	2449	.520
2900	8.7260-7	6348.2	13.9922	20.765	823	2.1362	-1.0574	10.6565	1.1288	1144.9	22486	.390	1.5672	1.3432	1248.9	2534	.509
2950	8.4227-7	6853.8	14.1650	20.389	832	1.9994	-1.0516	9.5414	1.1354	1168.7	19766	.401	1.5715	1.3504	1274.6	2612	.500
3000	8.1543-7	7301.1	14.3154	20.073	841	1.8537	-1.0450	8.3493	1.1435	1192.0	17024	.412	1.5752	1.3567	1298.4	2683	.493

TABLE 32.2D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
200	1.7268-4	-3266.1	7.3474	28.338	110	1.0000	-1.0000	1.0699	1.3779	284.3	149 .792	1.0699	1.3779	284.3	149 .792
210	1.6445-4	-3255.4	7.3996	28.338	116	1.0000	-1.0000	1.0717	1.3770	291.3	158 .787	1.0717	1.3770	291.3	158 .787
220	1.5698-4	-3244.6	7.4495	28.338	121	1.0000	-1.0000	1.0736	1.3761	298.0	166 .783	1.0736	1.3761	298.0	166 .783
230	1.5015-4	-3233.9	7.4973	28.338	126	1.0000	-1.0000	1.0756	1.3751	304.6	175 .779	1.0756	1.3751	304.6	175 .779
240	1.4390-4	-3223.1	7.5431	28.338	132	1.0000	-1.0000	1.0777	1.3741	311.1	183 .776	1.0777	1.3741	311.1	183 .776
250	1.3814-4	-3212.3	7.5872	28.338	137	1.0000	-1.0000	1.0799	1.3730	317.4	191 .773	1.0798	1.3731	317.4	191 .773
260	1.3283-4	-3201.5	7.6296	28.338	142	1.0000	-1.0000	1.0822	1.3720	323.5	199 .771	1.0821	1.3720	323.5	199 .771
270	1.2791-4	-3190.7	7.6705	28.338	147	1.0000	-1.0000	1.0846	1.3708	329.5	208 .769	1.0844	1.3709	329.5	207 .769
280	1.2334-4	-3179.8	7.7099	28.338	152	1.0000	-1.0000	1.0871	1.3697	335.4	216 .767	1.0868	1.3698	335.5	215 .768
290	1.1909-4	-3169.0	7.7481	28.338	157	1.0000	-1.0000	1.0898	1.3685	341.2	223 .766	1.0893	1.3686	341.2	223 .767
298	1.1583-4	-3160.1	7.7784	28.338	161	1.0001	-1.0000	1.0921	1.3674	345.9	230 .765	1.0914	1.3677	345.9	229 .766
300	1.1512-4	-3158.0	7.7851	28.338	162	1.0001	-1.0000	1.0926	1.3672	346.9	231 .765	1.0918	1.3675	346.9	231 .766
310	1.1140-4	-3147.1	7.8210	28.338	167	1.0001	-1.0000	1.0957	1.3658	352.5	239 .764	1.0945	1.3663	352.5	238 .766
320	1.0792-4	-3136.1	7.8558	28.338	171	1.0002	-1.0000	1.0991	1.3644	357.9	247 .763	1.0971	1.3650	358.0	246 .766
330	1.0465-4	-3125.1	7.8897	28.338	176	1.0003	-1.0000	1.1028	1.3628	363.2	255 .761	1.0999	1.3638	363.4	253 .766
340	1.0157-4	-3114.1	7.9227	28.337	181	1.0005	-1.0000	1.1070	1.3611	368.5	264 .759	1.1027	1.3625	368.7	260 .766
350	9.8667-5	-3103.0	7.9549	28.337	185	1.0007	-1.0000	1.1118	1.3592	373.6	273 .756	1.1056	1.3613	373.9	268 .766
360	9.5923-5	-3091.8	7.9863	28.336	190	1.0011	-1.0000	1.1174	1.3571	378.6	283 .751	1.1085	1.3600	379.0	275 .766
370	9.3328-5	-3080.6	8.0170	28.335	195	1.0015	-1.0001	1.1239	1.3547	383.5	293 .745	1.1115	1.3587	384.1	283 .765
380	9.0867-5	-3069.4	8.0470	28.334	199	1.0021	-1.0001	1.1315	1.3520	388.3	305 .738	1.1146	1.3574	389.0	291 .764
390	8.8532-5	-3058.0	8.0765	28.332	204	1.0029	-1.0001	1.1404	1.3490	392.9	319 .729	1.1177	1.3560	394.0	298 .763
400	8.6311-5	-3046.5	8.1055	28.330	208	1.0040	-1.0002	1.1510	1.3457	397.5	333 .718	1.1209	1.3547	398.8	306 .761
410	8.4196-5	-3035.0	8.1341	28.326	212	1.0053	-1.0002	1.1634	1.3419	401.9	350 .706	1.1241	1.3534	403.6	314 .761
420	8.2179-5	-3023.3	8.1623	28.322	216	1.0070	-1.0003	1.1781	1.3376	406.1	368 .693	1.1275	1.3520	408.3	321 .760
430	8.0253-5	-3011.4	8.1902	28.317	221	1.0091	-1.0004	1.1953	1.3329	410.2	389 .677	1.1309	1.3507	413.0	329 .759
440	7.8410-5	-2999.4	8.2179	28.310	225	1.0117	-1.0005	1.2153	1.3277	414.2	413 .661	1.1343	1.3494	417.6	336 .759
450	7.6645-5	-2987.1	8.2455	28.302	229	1.0148	-1.0006	1.2386	1.3221	418.1	441 .644	1.1379	1.3480	422.1	344 .758
460	7.4952-5	-2974.6	8.2730	28.291	233	1.0185	-1.0008	1.2655	1.3160	421.8	471 .626	1.1415	1.3467	426.7	351 .757
470	7.3324-5	-2961.8	8.3005	28.279	237	1.0230	-1.0010	1.2963	1.3095	425.4	506 .608	1.1453	1.3454	431.2	359 .756
480	7.1758-5	-2948.6	8.3282	28.264	241	1.0282	-1.0013	1.3312	1.3026	428.9	544 .590	1.1491	1.3441	435.6	367 .755
490	7.0249-5	-2935.1	8.3560	28.245	245	1.0342	-1.0016	1.3706	1.2955	432.3	586 .573	1.1530	1.3428	440.1	375 .754
500	6.8791-5	-2921.2	8.3842	28.224	249	1.0411	-1.0019	1.4146	1.2883	435.6	632 .557	1.1571	1.3415	444.5	383 .752
510	6.7383-5	-2906.8	8.4126	28.199	253	1.0489	-1.0024	1.4633	1.2809	438.9	682 .543	1.1612	1.3403	448.9	392 .750
520	6.6019-5	-2891.9	8.4416	28.170	257	1.0576	-1.0028	1.5166	1.2737	442.1	734 .531	1.1655	1.3391	453.4	401 .748
530	6.4696-5	-2876.5	8.4710	28.136	261	1.0671	-1.0033	1.5744	1.2665	445.4	789 .521	1.1699	1.3379	457.8	410 .745
540	6.3412-5	-2860.4	8.5010	28.098	265	1.0775	-1.0039	1.6363	1.2596	448.6	845 .513	1.1744	1.3368	462.2	419 .742
550	6.2165-5	-2843.7	8.5316	28.056	269	1.0886	-1.0045	1.7018	1.2529	451.9	901 .508	1.1790	1.3357	466.6	429 .739
560	6.0951-5	-2826.4	8.5629	28.008	273	1.1003	-1.0052	1.7701	1.2467	455.2	955 .505	1.1838	1.3347	471.0	439 .736
570	5.9769-5	-2808.3	8.5948	27.955	276	1.1123	-1.0059	1.8402	1.2408	458.6	1007 .505	1.1886	1.3337	475.5	449 .732
580	5.8618-5	-2789.6	8.6275	27.898	280	1.1243	-1.0066	1.9107	1.2355	462.1	1054 .508	1.1935	1.3328	480.0	459 .728
590	5.7496-5	-2770.1	8.6607	27.836	284	1.1360	-1.0073	1.9798	1.2307	465.7	1096 .513	1.1985	1.3319	484.5	470 .724

TABLE 32.2D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO		CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
600	5.6403-5	-2750.0	8.6945	27.770	288	1.1470	-1.0079	2.0451	1.2265	469.4	1129	.521	1.2036	1.3311	489.0	481 .720
610	5.5340-5	-2729.2	8.7288	27.700	291	1.1565	-1.0085	2.1038	1.2230	473.2	1152	.532	1.2086	1.3304	493.5	492 .715
620	5.4305-5	-2707.9	8.7635	27.628	295	1.1640	-1.0090	2.1518	1.2203	477.2	1164	.545	1.2137	1.3297	498.1	503 .711
630	5.3301-5	-2686.2	8.7982	27.554	299	1.1684	-1.0093	2.1844	1.2185	481.3	1161	.562	1.2187	1.3291	502.6	515 .707
640	5.2329-5	-2664.3	8.8327	27.481	302	1.1687	-1.0094	2.1960	1.2178	485.6	1143	.580	1.2237	1.3284	507.2	526 .703
650	5.1391-5	-2642.4	8.8667	27.410	306	1.1640	-1.0091	2.1808	1.2185	490.2	1108	.601	1.2285	1.3279	511.7	537 .699
660	5.0489-5	-2620.8	8.8996	27.344	309	1.1535	-1.0086	2.1342	1.2210	495.0	1058	.623	1.2331	1.3273	516.1	548 .696
670	4.9627-5	-2599.8	8.9312	27.284	313	1.1371	-1.0077	2.0553	1.2255	500.2	996	.645	1.2375	1.3267	520.5	558 .693
680	4.8805-5	-2579.8	8.9609	27.233	316	1.1159	-1.0065	1.9497	1.2322	505.8	928	.664	1.2416	1.3261	524.7	568 .691
690	4.8025-5	-2560.9	8.9885	27.191	319	1.0922	-1.0052	1.8302	1.2408	511.7	861	.679	1.2455	1.3254	528.8	577 .689
700	4.7284-5	-2543.2	9.0140	27.160	323	1.0692	-1.0040	1.7132	1.2505	517.7	804	.688	1.2491	1.3246	532.8	586 .688
710	4.6579-5	-2526.6	9.0375	27.137	326	1.0492	-1.0028	1.6124	1.2600	523.5	760	.692	1.2525	1.3238	536.6	594 .687
720	4.5905-5	-2510.9	9.0595	27.121	329	1.0337	-1.0019	1.5347	1.2682	529.1	729	.693	1.2557	1.3230	540.4	602 .687
730	4.5259-5	-2495.8	9.0803	27.111	333	1.0224	-1.0013	1.4796	1.2745	534.2	711	.692	1.2588	1.3221	544.0	609 .687
740	4.4637-5	-2481.2	9.1001	27.104	336	1.0146	-1.0009	1.4430	1.2788	538.8	701	.691	1.2618	1.3212	547.6	617 .687
750	4.4034-5	-2466.9	9.1193	27.100	339	1.0095	-1.0006	1.4199	1.2815	543.0	697	.690	1.2648	1.3203	551.2	624 .687
760	4.3451-5	-2452.8	9.1380	27.097	342	1.0062	-1.0004	1.4061	1.2830	547.0	698	.690	1.2677	1.3193	554.7	631 .688
770	4.2884-5	-2438.8	9.1564	27.095	346	1.0040	-1.0002	1.3982	1.2837	550.7	701	.689	1.2706	1.3184	558.1	638 .688
780	4.2332-5	-2424.8	9.1744	27.094	349	1.0026	-1.0002	1.3941	1.2839	554.4	705	.689	1.2734	1.3175	561.6	645 .689
790	4.1795-5	-2410.9	9.1921	27.094	352	1.0017	-1.0001	1.3923	1.2838	557.9	711	.689	1.2763	1.3166	565.0	652 .689
800	4.1272-5	-2396.9	9.2096	27.093	355	1.0011	-1.0001	1.3920	1.2835	561.3	717	.689	1.2791	1.3157	568.3	659 .690
810	4.0762-5	-2383.0	9.2269	27.093	358	1.0008	-1.0000	1.3925	1.2832	564.8	724	.689	1.2819	1.3148	571.7	665 .690
820	4.0264-5	-2369.1	9.2440	27.093	361	1.0005	-1.0000	1.3935	1.2827	568.2	730	.689	1.2847	1.3139	575.0	672 .691
830	3.9779-5	-2355.2	9.2609	27.092	364	1.0004	-1.0000	1.3948	1.2823	571.5	737	.690	1.2875	1.3130	578.3	679 .691
840	3.9305-5	-2341.2	9.2776	27.092	368	1.0002	-1.0000	1.3962	1.2819	574.9	744	.690	1.2902	1.3121	581.6	685 .692
850	3.8843-5	-2327.2	9.2942	27.092	371	1.0002	-1.0000	1.3976	1.2815	578.2	751	.690	1.2929	1.3112	584.8	692 .692
860	3.8391-5	-2313.2	9.3105	27.092	374	1.0001	-1.0000	1.3990	1.2811	581.5	757	.690	1.2957	1.3104	588.1	699 .693
870	3.7950-5	-2299.3	9.3267	27.092	377	1.0001	-1.0000	1.4004	1.2807	584.8	764	.691	1.2984	1.3095	591.3	705 .693
880	3.7519-5	-2285.2	9.3427	27.092	380	1.0001	-1.0000	1.4018	1.2803	588.0	771	.691	1.3011	1.3087	594.5	712 .694
890	3.7097-5	-2271.2	9.3586	27.092	383	1.0000	-1.0000	1.4031	1.2800	591.3	777	.691	1.3037	1.3079	597.7	719 .694
900	3.6685-5	-2257.2	9.3742	27.092	386	1.0000	-1.0000	1.4043	1.2797	594.5	784	.691	1.3064	1.3070	600.8	725 .695
910	3.6282-5	-2243.1	9.3898	27.092	389	1.0000	-1.0000	1.4054	1.2794	597.7	790	.692	1.3090	1.3062	604.0	732 .695
920	3.5887-5	-2229.1	9.4051	27.092	392	1.0000	-1.0000	1.4065	1.2791	601.0	796	.692	1.3116	1.3055	607.1	739 .696
930	3.5501-5	-2215.0	9.4203	27.092	395	1.0000	-1.0000	1.4076	1.2788	604.1	803	.692	1.3142	1.3047	610.2	745 .696
940	3.5124-5	-2200.9	9.4354	27.092	398	1.0000	-1.0000	1.4086	1.2786	607.3	809	.693	1.3168	1.3039	613.3	752 .697
950	3.4754-5	-2186.8	9.4503	27.092	401	1.0000	-1.0000	1.4095	1.2783	610.5	815	.693	1.3193	1.3031	616.4	758 .697
960	3.4392-5	-2172.7	9.4651	27.092	404	1.0000	-1.0000	1.4104	1.2781	613.6	821	.693	1.3218	1.3024	619.4	765 .698
970	3.4037-5	-2158.6	9.4797	27.092	407	1.0000	-1.0000	1.4113	1.2779	616.8	827	.693	1.3243	1.3016	622.5	771 .698
980	3.3690-5	-2144.5	9.4942	27.092	409	1.0000	-1.0000	1.4121	1.2777	619.9	833	.694	1.3267	1.3009	625.5	778 .699
990	3.3350-5	-2130.4	9.5085	27.092	412	1.0000	-1.0000	1.4129	1.2775	623.0	839	.694	1.3292	1.3002	628.5	784 .699

TABLE 32.2D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3016-5	-2116.2	9.5227	27.092	415	1.0000	-1.0000	1.4137	1.2773	626.1	845	.694	1.3316	1.2995	631.5	791	.699
1050	3.1444-5	-2045.5	9.5918	27.092	429	1.0000	-1.0000	1.4173	1.2764	641.3	875	.696	1.3431	1.2962	646.3	823	.701
1100	3.0015-5	-1974.5	9.6578	27.092	443	1.0000	-1.0000	1.4210	1.2755	656.2	904	.697	1.3543	1.2930	660.7	855	.703
1150	2.8710-5	-1903.4	9.7211	27.092	457	1.0000	-1.0000	1.4248	1.2745	670.7	933	.698	1.3650	1.2900	674.8	887	.704
1200	2.7513-5	-1832.0	9.7818	27.092	471	1.0000	-1.0000	1.4288	1.2735	684.8	962	.699	1.3753	1.2872	688.5	918	.705
1250	2.6413-5	-1760.5	9.8402	27.092	484	1.0000	-1.0000	1.4331	1.2725	698.7	990	.700	1.3852	1.2846	702.0	950	.706
1300	2.5397-5	-1688.7	9.8965	27.092	497	1.0000	-1.0000	1.4376	1.2714	712.2	1019	.701	1.3947	1.2821	715.2	981	.707
1350	2.4456-5	-1616.7	9.9508	27.092	510	1.0000	-1.0000	1.4424	1.2703	725.5	1048	.702	1.4038	1.2798	728.2	1013	.707
1400	2.3583-5	-1544.5	10.0034	27.092	523	1.0000	-1.0000	1.4473	1.2691	738.4	1078	.703	1.4126	1.2776	740.9	1044	.708
1450	2.2770-5	-1472.0	10.0543	27.092	536	1.0001	-1.0000	1.4525	1.2679	751.2	1108	.703	1.4209	1.2755	753.4	1075	.708
1500	2.2011-5	-1399.2	10.1036	27.092	549	1.0001	-1.0000	1.4579	1.2667	763.6	1139	.703	1.4289	1.2735	765.7	1106	.709
1550	2.1301-5	-1326.2	10.1515	27.092	561	1.0002	-1.0000	1.4637	1.2654	775.9	1170	.702	1.4365	1.2717	777.8	1137	.709
1600	2.0635-5	-1252.8	10.1981	27.092	573	1.0003	-1.0000	1.4700	1.2641	787.8	1204	.700	1.4438	1.2699	789.7	1168	.709
1650	2.0009-5	-1179.2	10.2434	27.091	586	1.0005	-1.0000	1.4771	1.2626	799.6	1240	.698	1.4507	1.2683	801.4	1199	.709
1700	1.9420-5	-1105.1	10.2876	27.091	598	1.0009	-1.0000	1.4854	1.2610	811.1	1280	.694	1.4574	1.2668	813.0	1230	.709
1750	1.8865-5	-1030.6	10.3308	27.090	610	1.0014	-1.0000	1.4956	1.2591	822.4	1325	.689	1.4637	1.2653	824.4	1260	.708
1800	1.8340-5	-955.5	10.3731	27.088	622	1.0023	-1.0001	1.5084	1.2568	833.3	1376	.681	1.4697	1.2640	835.7	1291	.708
1850	1.7843-5	-879.7	10.4147	27.086	634	1.0035	-1.0001	1.5253	1.2540	843.9	1438	.672	1.4754	1.2627	846.8	1321	.708
1900	1.7371-5	-802.9	10.4556	27.083	645	1.0054	-1.0002	1.5481	1.2505	854.0	1513	.660	1.4809	1.2615	857.8	1352	.707
1950	1.6923-5	-724.7	10.4962	27.078	657	1.0083	-1.0003	1.5797	1.2459	863.7	1606	.646	1.4861	1.2604	868.7	1382	.706
2000	1.6495-5	-644.7	10.5367	27.071	668	1.0126	-1.0004	1.6244	1.2398	872.7	1724	.630	1.4910	1.2594	879.6	1412	.705
2050	1.6087-5	-562.0	10.5776	27.061	679	1.0190	-1.0006	1.6884	1.2320	880.9	1876	.611	1.4957	1.2585	890.3	1443	.705
2100	1.5695-5	-475.4	10.6193	27.046	691	1.0286	-1.0009	1.7807	1.2221	888.2	2077	.592	1.5002	1.2577	901.1	1473	.703
2150	1.5317-5	-383.2	10.6627	27.023	702	1.0430	-1.0014	1.9134	1.2099	894.6	2344	.573	1.5044	1.2571	911.9	1504	.702
2200	1.4951-5	-283.1	10.7087	26.990	713	1.0639	-1.0022	2.1009	1.1958	900.2	2702	.554	1.5084	1.2566	922.8	1535	.700
2250	1.4593-5	-172.0	10.7586	26.943	723	1.0933	-1.0033	2.3564	1.1810	905.5	3179	.536	1.5122	1.2564	934.0	1566	.698
2300	1.4241-5	-46.2	10.8139	26.877	734	1.1325	-1.0048	2.6865	1.1668	911.1	3803	.518	1.5157	1.2564	945.5	1599	.696
2350	1.3891-5	97.8	10.8759	26.787	744	1.1815	-1.0067	3.0861	1.1544	917.6	4592	.500	1.5190	1.2568	957.5	1632	.692
2400	1.3542-5	263.3	10.9455	26.669	754	1.2390	-1.0090	3.5400	1.1444	925.4	5555	.480	1.5220	1.2576	970.0	1667	.688
2450	1.3192-5	452.4	11.0235	26.521	763	1.3032	-1.0117	4.0306	1.1369	934.5	6690	.460	1.5248	1.2588	983.3	1704	.683
2500	1.2840-5	666.7	11.1101	26.340	773	1.3726	-1.0148	4.5447	1.1313	944.9	7990	.439	1.5275	1.2605	997.3	1742	.677
2550	1.2487-5	907.2	11.2053	26.128	782	1.4463	-1.0182	5.0755	1.1273	956.4	9448	.420	1.5300	1.2626	1012.2	1784	.670
2600	1.2132-5	1174.5	11.3091	25.883	790	1.5238	-1.0219	5.6213	1.1246	969.1	11052	.402	1.5325	1.2652	1027.9	1829	.662
2650	1.1776-5	1469.5	11.4215	25.607	798	1.6049	-1.0260	6.1814	1.1227	982.9	12781	.386	1.5350	1.2683	1044.6	1878	.653
2700	1.1419-5	1792.9	11.5423	25.299	807	1.6890	-1.0304	6.7534	1.1216	997.6	14605	.373	1.5376	1.2718	1062.3	1930	.643
2750	1.1062-5	2145.0	11.6715	24.962	814	1.7747	-1.0351	7.3310	1.1211	1013.4	16474	.362	1.5403	1.2759	1081.1	1987	.631
2800	1.0705-5	2525.9	11.8088	24.597	822	1.8602	-1.0399	7.9026	1.1212	1030.1	18322	.355	1.5431	1.2805	1100.9	2049	.619
2850	1.0351-5	2934.8	11.9535	24.207	830	1.9424	-1.0448	8.4496	1.1218	1047.9	20065	.349	1.5461	1.2856	1121.8	2115	.607
2900	1.0001-5	3370.0	12.1049	23.798	837	2.0174	-1.0495	8.9472	1.1228	1066.6	21607	.347	1.5493	1.2912	1143.8	2186	.594
2950	9.6562-6	3828.2	12.2615	23.375	845	2.0808	-1.0539	9.3649	1.1243	1086.2	22843	.346	1.5526	1.2972	1166.7	2260	.580
3000	9.3204-6	4304.6	12.4217	22.944	853	2.1277	-1.0575	9.6701	1.1263	1106.6	23680	.348	1.5561	1.3036	1190.4	2339	.567

TABLE 32.3D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
200	1.7267-3	-3266.1	6.6718	28.338	110	1.0000	-1.0000	1.0699	1.3779	284.3	149	.792	1.0699	1.3779	284.3	149	.792
210	1.6445-3	-3255.4	6.7241	28.338	116	1.0000	-1.0000	1.0717	1.3770	291.3	158	.787	1.0717	1.3770	291.3	158	.787
220	1.5698-3	-3244.6	6.7740	28.338	121	1.0000	-1.0000	1.0736	1.3761	298.0	166	.783	1.0736	1.3761	298.0	166	.783
230	1.5015-3	-3233.9	6.8217	28.338	126	1.0000	-1.0000	1.0756	1.3751	304.6	175	.779	1.0756	1.3751	304.6	175	.779
240	1.4390-3	-3223.1	6.8676	28.338	132	1.0000	-1.0000	1.0777	1.3741	311.1	183	.776	1.0777	1.3741	311.1	183	.776
250	1.3814-3	-3212.3	6.9116	28.338	137	1.0000	-1.0000	1.0799	1.3731	317.4	191	.773	1.0798	1.3731	317.4	191	.773
260	1.3283-3	-3201.5	6.9540	28.338	142	1.0000	-1.0000	1.0821	1.3720	323.5	199	.771	1.0821	1.3720	323.5	199	.771
270	1.2791-3	-3190.7	6.9949	28.338	147	1.0000	-1.0000	1.0845	1.3709	329.5	207	.769	1.0844	1.3709	329.5	207	.769
280	1.2334-3	-3179.8	7.0344	28.338	152	1.0000	-1.0000	1.0869	1.3697	335.4	215	.768	1.0868	1.3698	335.5	215	.768
290	1.1909-3	-3169.0	7.0725	28.338	157	1.0000	-1.0000	1.0895	1.3686	341.2	223	.767	1.0893	1.3686	341.2	223	.767
298	1.1583-3	-3160.1	7.1028	28.338	161	1.0000	-1.0000	1.0916	1.3676	345.9	230	.766	1.0914	1.3677	345.9	229	.766
300	1.1512-3	-3158.1	7.1095	28.338	162	1.0000	-1.0000	1.0921	1.3674	346.9	231	.766	1.0918	1.3675	346.9	231	.766
310	1.1140-3	-3147.1	7.1454	28.338	167	1.0000	-1.0000	1.0949	1.3661	352.5	239	.765	1.0945	1.3663	352.5	238	.766
320	1.0792-3	-3136.2	7.1802	28.338	171	1.0001	-1.0000	1.0978	1.3648	358.0	246	.765	1.0971	1.3650	358.0	246	.766
330	1.0465-3	-3125.2	7.2140	28.338	176	1.0001	-1.0000	1.1008	1.3635	363.3	254	.765	1.0999	1.3638	363.4	253	.766
340	1.0157-3	-3114.1	7.2469	28.338	181	1.0001	-1.0000	1.1041	1.3620	368.6	261	.764	1.1027	1.3625	368.7	260	.766
350	9.8670-4	-3103.1	7.2790	28.338	185	1.0002	-1.0000	1.1076	1.3606	373.8	269	.763	1.1055	1.3613	373.9	268	.766
360	9.5929-4	-3092.0	7.3102	28.338	190	1.0003	-1.0000	1.1113	1.3590	378.9	277	.761	1.1085	1.3600	379.0	275	.766
370	9.3335-4	-3080.9	7.3407	28.337	195	1.0005	-1.0000	1.1154	1.3574	383.9	286	.759	1.1114	1.3587	384.1	283	.765
380	9.0877-4	-3069.7	7.3705	28.337	199	1.0007	-1.0000	1.1199	1.3556	388.8	295	.755	1.1145	1.3574	389.0	290	.764
390	8.8545-4	-3058.5	7.3997	28.336	204	1.0009	-1.0000	1.1248	1.3537	393.6	305	.752	1.1176	1.3560	393.9	298	.763
400	8.6329-4	-3047.2	7.4282	28.336	208	1.0013	-1.0000	1.1303	1.3517	398.3	314	.747	1.1207	1.3547	398.7	306	.762
410	8.4221-4	-3035.8	7.4562	28.335	212	1.0017	-1.0001	1.1365	1.3495	402.9	325	.743	1.1239	1.3533	403.5	313	.761
420	8.2212-4	-3024.4	7.4837	28.333	216	1.0022	-1.0001	1.1433	1.3472	407.5	336	.737	1.1271	1.3520	408.2	321	.761
430	8.0295-4	-3013.0	7.5107	28.332	221	1.0029	-1.0001	1.1511	1.3446	411.9	348	.731	1.1304	1.3506	412.8	328	.761
440	7.8464-4	-3001.4	7.5372	28.329	225	1.0037	-1.0002	1.1598	1.3419	416.3	360	.723	1.1338	1.3493	417.4	335	.760
450	7.6713-4	-2989.8	7.5634	28.327	229	1.0047	-1.0002	1.1696	1.3389	420.5	374	.715	1.1372	1.3479	421.9	343	.760
460	7.5037-4	-2978.0	7.5892	28.323	233	1.0060	-1.0003	1.1807	1.3357	424.7	390	.706	1.1406	1.3466	426.4	350	.760
470	7.3430-4	-2966.2	7.6148	28.319	237	1.0075	-1.0003	1.1932	1.3322	428.8	406	.696	1.1441	1.3452	430.8	357	.759
480	7.1887-4	-2954.2	7.6400	28.314	241	1.0092	-1.0004	1.2073	1.3285	432.7	425	.685	1.1477	1.3438	435.2	365	.759
490	7.0405-4	-2942.0	7.6651	28.308	245	1.0113	-1.0005	1.2231	1.3246	436.6	445	.673	1.1513	1.3425	439.6	372	.759
500	6.8980-4	-2929.7	7.6900	28.301	249	1.0137	-1.0007	1.2407	1.3204	440.4	467	.661	1.1549	1.3412	443.8	379	.758
510	6.7607-4	-2917.2	7.7147	28.293	253	1.0165	-1.0008	1.2604	1.3160	444.1	492	.648	1.1586	1.3398	448.1	387	.757
520	6.6284-4	-2904.5	7.7394	28.283	257	1.0197	-1.0010	1.2823	1.3113	447.7	519	.635	1.1624	1.3385	452.3	395	.756
530	6.5007-4	-2891.5	7.7641	28.271	261	1.0234	-1.0012	1.3065	1.3065	451.3	548	.622	1.1663	1.3372	456.5	403	.755
540	6.3772-4	-2878.3	7.7887	28.258	265	1.0275	-1.0014	1.3332	1.3015	454.7	579	.609	1.1701	1.3359	460.7	411	.754
550	6.2579-4	-2864.9	7.8135	28.243	268	1.0322	-1.0016	1.3625	1.2963	458.1	613	.597	1.1741	1.3347	464.9	419	.752
560	6.1423-4	-2851.1	7.8383	28.225	272	1.0374	-1.0019	1.3945	1.2910	461.5	649	.585	1.1781	1.3334	469.0	427	.751
570	6.0302-4	-2837.0	7.8633	28.205	276	1.0432	-1.0023	1.4294	1.2856	464.8	687	.574	1.1822	1.3322	473.1	436	.749
580	5.9215-4	-2822.5	7.8885	28.182	280	1.0495	-1.0026	1.4671	1.2802	468.0	727	.565	1.1863	1.3310	477.2	444	.747
590	5.8159-4	-2807.6	7.9139	28.157	283	1.0564	-1.0030	1.5077	1.2748	471.3	769	.556	1.1905	1.3299	481.3	453	.745

TABLE 32.3D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN MICRO	CP	GAM	VS	COND	PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
600	5.7131-4	-2792.3	7.9396	28.128	287	1.0639	-1.0035	1.5513	1.2694	474.5	811	.549	1.1948	1.3287	485.4	462	.743
610	5.6132-4	-2776.6	7.9656	28.097	291	1.0719	-1.0039	1.5977	1.2640	477.7	855	.543	1.1991	1.3277	489.5	471	.740
620	5.5158-4	-2760.4	7.9920	28.062	294	1.0804	-1.0045	1.6468	1.2587	480.9	899	.539	1.2034	1.3266	493.7	480	.738
630	5.4209-4	-2743.6	8.0187	28.024	298	1.0894	-1.0050	1.6985	1.2536	484.1	943	.537	1.2078	1.3256	497.8	490	.735
640	5.3283-4	-2726.4	8.0459	27.982	302	1.0987	-1.0056	1.7524	1.2486	487.3	987	.536	1.2123	1.3247	501.9	500	.732
650	5.2379-4	-2708.6	8.0735	27.938	305	1.1083	-1.0061	1.8079	1.2439	490.5	1028	.537	1.2167	1.3238	506.0	509	.729
660	5.1497-4	-2690.2	8.1015	27.889	309	1.1180	-1.0067	1.8645	1.2393	493.8	1068	.539	1.2212	1.3230	510.2	519	.726
670	5.0634-4	-2671.3	8.1300	27.838	312	1.1276	-1.0073	1.9212	1.2351	497.1	1104	.544	1.2258	1.3222	514.4	529	.723
680	4.9792-4	-2651.8	8.1589	27.783	316	1.1368	-1.0079	1.9767	1.2311	500.5	1135	.550	1.2303	1.3214	518.6	540	.720
690	4.8970-4	-2631.8	8.1881	27.726	319	1.1454	-1.0084	2.0292	1.2276	504.0	1162	.558	1.2348	1.3208	522.8	550	.717
700	4.8166-4	-2611.2	8.2177	27.667	323	1.1528	-1.0089	2.0765	1.2246	507.6	1181	.567	1.2392	1.3201	527.0	560	.713
710	4.7383-4	-2590.3	8.2474	27.606	326	1.1585	-1.0093	2.1156	1.2222	511.2	1191	.579	1.2437	1.3196	531.2	571	.710
720	4.6620-4	-2569.0	8.2772	27.544	329	1.1620	-1.0095	2.1433	1.2205	515.0	1192	.592	1.2480	1.3190	535.4	581	.707
730	4.5879-4	-2547.4	8.3069	27.482	333	1.1624	-1.0096	2.1556	1.2196	519.0	1181	.607	1.2523	1.3186	539.6	591	.704
740	4.5160-4	-2525.9	8.3362	27.422	336	1.1592	-1.0094	2.1489	1.2198	523.1	1159	.623	1.2564	1.3181	543.8	601	.702
750	4.4464-4	-2504.5	8.3648	27.365	339	1.1518	-1.0090	2.1201	1.2212	527.5	1125	.639	1.2604	1.3176	548.0	611	.699
760	4.3794-4	-2483.6	8.3926	27.312	342	1.1402	-1.0084	2.0683	1.2240	532.1	1080	.656	1.2643	1.3172	552.0	621	.697
770	4.3151-4	-2463.2	8.4192	27.264	346	1.1246	-1.0075	1.9957	1.2282	537.0	1029	.670	1.2680	1.3167	556.0	630	.696
780	4.2534-4	-2443.7	8.4444	27.224	349	1.1063	-1.0064	1.9082	1.2338	542.1	976	.682	1.2715	1.3161	559.9	639	.694
790	4.1944-4	-2425.1	8.4681	27.190	352	1.0870	-1.0053	1.8146	1.2405	547.4	925	.691	1.2749	1.3155	563.7	647	.693
800	4.1379-4	-2407.4	8.4904	27.164	355	1.0683	-1.0042	1.7240	1.2476	552.7	880	.696	1.2781	1.3149	567.4	655	.692
810	4.0838-4	-2390.6	8.5113	27.143	358	1.0518	-1.0032	1.6440	1.2547	557.9	844	.698	1.2812	1.3142	571.0	663	.692
820	4.0318-4	-2374.5	8.5310	27.128	361	1.0382	-1.0024	1.5783	1.2610	562.9	817	.698	1.2842	1.3135	574.5	671	.692
830	3.9816-4	-2359.0	8.5498	27.118	364	1.0276	-1.0017	1.5276	1.2662	567.6	799	.697	1.2872	1.3127	578.0	678	.692
840	3.9331-4	-2343.9	8.5679	27.110	368	1.0197	-1.0012	1.4903	1.2702	572.0	787	.696	1.2900	1.3119	581.4	685	.692
850	3.8861-4	-2329.1	8.5854	27.105	371	1.0139	-1.0009	1.4637	1.2732	576.2	781	.695	1.2928	1.3111	584.7	692	.693
860	3.8404-4	-2314.6	8.6024	27.101	374	1.0098	-1.0006	1.4452	1.2752	580.1	779	.694	1.2956	1.3103	588.0	698	.693
870	3.7959-4	-2300.2	8.6190	27.098	377	1.0069	-1.0004	1.4327	1.2766	583.8	779	.693	1.2983	1.3095	591.2	705	.694
880	3.7525-4	-2285.9	8.6353	27.097	380	1.0049	-1.0003	1.4243	1.2775	587.3	781	.693	1.3010	1.3086	594.4	712	.694
890	3.7101-4	-2271.7	8.6514	27.095	383	1.0035	-1.0002	1.4189	1.2780	590.8	784	.692	1.3037	1.3078	597.6	719	.694
900	3.6688-4	-2257.5	8.6672	27.095	386	1.0025	-1.0002	1.4155	1.2783	594.2	789	.692	1.3064	1.3070	600.8	725	.695
910	3.6284-4	-2243.4	8.6828	27.094	389	1.0018	-1.0001	1.4134	1.2784	597.5	794	.692	1.3090	1.3062	604.0	732	.695
920	3.5889-4	-2229.3	8.6983	27.093	392	1.0013	-1.0001	1.4122	1.2784	600.8	799	.692	1.3116	1.3054	607.1	738	.696
930	3.5503-4	-2215.1	8.7135	27.093	395	1.0009	-1.0001	1.4117	1.2783	604.0	805	.693	1.3142	1.3047	610.2	745	.696
940	3.5125-4	-2201.0	8.7286	27.093	398	1.0007	-1.0001	1.4115	1.2782	607.2	810	.693	1.3168	1.3039	613.3	752	.697
950	3.4755-4	-2186.9	8.7436	27.093	401	1.0005	-1.0000	1.4117	1.2781	610.4	816	.693	1.3193	1.3031	616.4	758	.697
960	3.4393-4	-2172.8	8.7584	27.093	404	1.0004	-1.0000	1.4120	1.2779	613.6	822	.693	1.3218	1.3024	619.4	765	.698
970	3.4038-4	-2158.7	8.7730	27.092	407	1.0003	-1.0000	1.4125	1.2778	616.7	828	.694	1.3243	1.3016	622.5	771	.698
980	3.3690-4	-2144.5	8.7875	27.092	409	1.0002	-1.0000	1.4130	1.2776	619.9	834	.694	1.3267	1.3009	625.5	778	.699
990	3.3350-4	-2130.4	8.8018	27.092	412	1.0002	-1.0000	1.4136	1.2774	623.0	840	.694	1.3292	1.3002	628.5	784	.699

TABLE 32.3D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K					J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
1000	3.3017-4	-2116.3	8.8160	27.092	415	1.0001	-1.0000	1.4143	1.2772	626.1	846 .694	1.3316	1.2995	631.5	791 .699
1050	3.1444-4	-2045.5	8.8851	27.092	429	1.0001	-1.0000	1.4175	1.2764	641.3	875 .696	1.3431	1.2962	646.3	823 .701
1100	3.0015-4	-1974.5	8.9512	27.092	443	1.0000	-1.0000	1.4210	1.2755	656.2	904 .697	1.3543	1.2930	660.7	855 .703
1150	2.8710-4	-1903.4	9.0144	27.092	457	1.0000	-1.0000	1.4248	1.2745	670.7	933 .698	1.3650	1.2900	674.8	887 .704
1200	2.7514-4	-1832.0	9.0751	27.092	471	1.0000	-1.0000	1.4288	1.2735	684.8	962 .699	1.3753	1.2872	688.5	918 .705
1250	2.6413-4	-1760.5	9.1335	27.092	484	1.0000	-1.0000	1.4331	1.2725	698.7	990 .701	1.3852	1.2846	702.0	950 .706
1300	2.5397-4	-1688.7	9.1898	27.092	497	1.0000	-1.0000	1.4376	1.2714	712.2	1019 .701	1.3947	1.2821	715.2	981 .707
1350	2.4456-4	-1616.7	9.2442	27.092	510	1.0000	-1.0000	1.4422	1.2703	725.5	1048 .702	1.4038	1.2798	728.2	1013 .707
1400	2.3583-4	-1544.5	9.2967	27.092	523	1.0000	-1.0000	1.4471	1.2692	738.4	1077 .703	1.4126	1.2776	740.9	1044 .708
1450	2.2770-4	-1472.0	9.3476	27.092	536	1.0000	-1.0000	1.4520	1.2680	751.2	1106 .704	1.4209	1.2755	753.4	1075 .708
1500	2.2011-4	-1399.3	9.3969	27.092	549	1.0000	-1.0000	1.4571	1.2668	763.7	1136 .704	1.4289	1.2735	765.7	1106 .709
1550	2.1301-4	-1326.3	9.4448	27.092	561	1.0001	-1.0000	1.4622	1.2657	775.9	1166 .704	1.4365	1.2717	777.8	1137 .709
1600	2.0635-4	-1253.1	9.4913	27.092	573	1.0001	-1.0000	1.4676	1.2645	788.0	1196 .704	1.4438	1.2699	789.7	1168 .709
1650	2.0010-4	-1179.5	9.5365	27.092	586	1.0002	-1.0000	1.4731	1.2633	799.8	1228 .703	1.4507	1.2683	801.4	1199 .709
1700	1.9421-4	-1105.7	9.5806	27.092	598	1.0003	-1.0000	1.4789	1.2620	811.4	1260 .702	1.4573	1.2668	813.0	1229 .709
1750	1.8866-4	-1031.6	9.6235	27.091	610	1.0005	-1.0000	1.4852	1.2607	822.9	1294 .700	1.4636	1.2653	824.4	1260 .708
1800	1.8342-4	-957.2	9.6655	27.091	622	1.0007	-1.0000	1.4923	1.2593	834.1	1330 .698	1.4697	1.2640	835.6	1290 .708
1850	1.7845-4	-882.4	9.7065	27.090	634	1.0011	-1.0000	1.5005	1.2578	845.1	1369 .694	1.4754	1.2627	846.7	1321 .708
1900	1.7375-4	-807.1	9.7466	27.089	645	1.0017	-1.0001	1.5102	1.2561	855.9	1413 .690	1.4808	1.2615	857.7	1351 .707
1950	1.6929-4	-731.3	9.7860	27.088	657	1.0025	-1.0001	1.5223	1.2540	866.4	1461 .684	1.4860	1.2603	868.5	1381 .707
2000	1.6504-4	-654.9	9.8247	27.086	668	1.0037	-1.0001	1.5376	1.2516	876.6	1517 .677	1.4909	1.2593	879.3	1411 .706
2050	1.6100-4	-577.5	9.8629	27.083	680	1.0054	-1.0002	1.5575	1.2485	886.4	1582 .669	1.4956	1.2583	889.9	1441 .705
2100	1.5714-4	-499.0	9.9007	27.078	691	1.0079	-1.0003	1.5839	1.2448	895.9	1659 .659	1.5001	1.2574	900.4	1470 .705
2150	1.5345-4	-419.0	9.9384	27.072	702	1.0114	-1.0004	1.6192	1.2401	904.9	1753 .648	1.5043	1.2565	910.9	1500 .704
2200	1.4992-4	-336.9	9.9761	27.064	713	1.0163	-1.0006	1.6669	1.2343	913.4	1869 .636	1.5083	1.2558	921.3	1530 .703
2250	1.4652-4	-252.0	10.0143	27.052	724	1.0233	-1.0008	1.7314	1.2271	921.2	2014 .622	1.5122	1.2551	931.6	1560 .702
2300	1.4325-4	-163.4	10.0532	27.035	735	1.0331	-1.0012	1.8183	1.2186	928.4	2196 .608	1.5158	1.2545	942.0	1590 .701
2350	1.4008-4	-69.7	10.0935	27.012	745	1.0466	-1.0017	1.9341	1.2087	935.0	2427 .594	1.5192	1.2541	952.4	1620 .699
2400	1.3700-4	30.6	10.1358	26.981	756	1.0647	-1.0024	2.0846	1.1979	941.2	2719 .580	1.5224	1.2538	962.9	1650 .697
2450	1.3400-4	139.4	10.1806	26.939	766	1.0882	-1.0033	2.2742	1.1868	947.3	3085 .565	1.5254	1.2537	973.6	1681 .695
2500	1.3105-4	258.7	10.2288	26.883	777	1.1175	-1.0045	2.5029	1.1762	953.7	3536 .550	1.5282	1.2537	984.6	1713 .693
2550	1.2814-4	390.3	10.2809	26.812	787	1.1523	-1.0060	2.7662	1.1667	960.5	4077 .534	1.5309	1.2540	995.8	1745 .690
2600	1.2525-4	535.8	10.3374	26.722	796	1.1917	-1.0077	3.0558	1.1587	968.1	4710 .517	1.5333	1.2546	1007.4	1778 .687
2650	1.2239-4	696.2	10.3985	26.614	806	1.2349	-1.0096	3.3622	1.1521	976.6	5433 .499	1.5355	1.2554	1019.5	1812 .683
2700	1.1955-4	872.1	10.4643	26.486	815	1.2807	-1.0118	3.6777	1.1471	986.0	6240 .480	1.5376	1.2565	1032.0	1847 .678
2750	1.1672-4	1064.0	10.5347	26.339	824	1.3285	-1.0141	3.9971	1.1432	996.2	7128 .462	1.5396	1.2579	1045.0	1884 .674
2800	1.1391-4	1271.9	10.6096	26.172	833	1.3780	-1.0167	4.3182	1.1403	1007.1	8094 .444	1.5415	1.2596	1058.5	1921 .668
2850	1.1112-4	1495.8	10.6889	25.986	842	1.4290	-1.0194	4.6402	1.1382	1018.8	9131 .428	1.5434	1.2615	1072.6	1961 .662
2900	1.0834-4	1735.9	10.7724	25.781	850	1.4813	-1.0223	4.9633	1.1367	1031.1	10233 .412	1.5452	1.2638	1087.2	2003 .656
2950	1.0558-4	1992.2	10.8600	25.558	858	1.5349	-1.0254	5.2872	1.1358	1044.0	11391 .398	1.5470	1.2663	1102.4	2047 .649
3000	1.0285-4	2264.6	10.9515	25.318	867	1.5894	-1.0286	5.6113	1.1354	1057.6	12590 .386	1.5489	1.2691	1118.2	2094 .641

TABLE 32.4D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K					J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
200	1.7268-2	-3266.1	5.9963	28.338	110	1.0000	-1.0000	1.0699	1.3779	284.3	149	.792	1.0699	1.3779	284.3	149	.792
210	1.6445-2	-3255.4	6.0485	28.338	116	1.0000	-1.0000	1.0717	1.3770	291.3	158	.787	1.0717	1.3770	291.3	158	.787
220	1.5698-2	-3244.6	6.0984	28.338	121	1.0000	-1.0000	1.0736	1.3761	298.0	166	.783	1.0736	1.3761	298.0	166	.783
230	1.5015-2	-3233.9	6.1462	28.338	126	1.0000	-1.0000	1.0756	1.3751	304.6	175	.779	1.0756	1.3751	304.6	175	.779
240	1.4390-2	-3223.1	6.1920	28.338	132	1.0000	-1.0000	1.0777	1.3741	311.1	183	.776	1.0777	1.3741	311.1	183	.776
250	1.3814-2	-3212.3	6.2360	28.338	137	1.0000	-1.0000	1.0799	1.3731	317.4	191	.773	1.0798	1.3731	317.4	191	.773
260	1.3283-2	-3201.5	6.2784	28.338	142	1.0000	-1.0000	1.0821	1.3720	323.5	199	.771	1.0821	1.3720	323.5	199	.771
270	1.2791-2	-3190.7	6.3193	28.338	147	1.0000	-1.0000	1.0845	1.3709	329.5	207	.769	1.0844	1.3709	329.5	207	.769
280	1.2334-2	-3179.8	6.3588	28.338	152	1.0000	-1.0000	1.0869	1.3697	335.4	215	.768	1.0868	1.3698	335.5	215	.768
290	1.1909-2	-3169.0	6.3970	28.338	157	1.0000	-1.0000	1.0894	1.3686	341.2	223	.767	1.0893	1.3686	341.2	223	.767
298	1.1583-2	-3160.1	6.4272	28.338	161	1.0000	-1.0000	1.0915	1.3676	345.9	229	.766	1.0914	1.3677	345.9	229	.766
300	1.1512-2	-3158.1	6.4339	28.338	162	1.0000	-1.0000	1.0920	1.3674	346.9	231	.766	1.0918	1.3675	346.9	231	.766
310	1.1140-2	-3147.1	6.4698	28.338	167	1.0000	-1.0000	1.0946	1.3662	352.5	238	.766	1.0945	1.3663	352.5	238	.766
320	1.0792-2	-3136.2	6.5046	28.338	171	1.0000	-1.0000	1.0974	1.3649	358.0	246	.766	1.0971	1.3650	358.0	246	.766
330	1.0465-2	-3125.2	6.5384	28.338	176	1.0000	-1.0000	1.1002	1.3637	363.4	253	.766	1.0999	1.3638	363.4	253	.766
340	1.0157-2	-3114.2	6.5713	28.338	181	1.0000	-1.0000	1.1032	1.3623	368.6	261	.766	1.1027	1.3625	368.7	260	.766
350	9.8671-3	-3103.1	6.6033	28.338	185	1.0001	-1.0000	1.1063	1.3610	373.8	268	.765	1.1055	1.3613	373.9	267	.766
360	9.5930-3	-3092.0	6.6345	28.338	190	1.0001	-1.0000	1.1095	1.3596	379.0	276	.764	1.1084	1.3600	379.0	275	.766
370	9.3337-3	-3080.9	6.6650	28.338	195	1.0001	-1.0000	1.1128	1.3582	384.0	284	.763	1.1114	1.3587	384.0	283	.765
380	9.0881-3	-3069.8	6.6947	28.338	199	1.0002	-1.0000	1.1163	1.3567	388.9	292	.761	1.1144	1.3574	389.0	290	.764
390	8.8550-3	-3058.6	6.7237	28.338	204	1.0003	-1.0000	1.1199	1.3552	393.8	300	.759	1.1175	1.3560	393.9	298	.763
400	8.6335-3	-3047.4	6.7521	28.338	208	1.0004	-1.0000	1.1238	1.3536	398.6	308	.757	1.1206	1.3547	398.7	306	.762
410	8.4229-3	-3036.1	6.7799	28.337	212	1.0005	-1.0000	1.1279	1.3520	403.3	317	.756	1.1238	1.3533	403.5	313	.762
420	8.2222-3	-3024.8	6.8072	28.337	216	1.0007	-1.0000	1.1323	1.3503	407.9	325	.753	1.1270	1.3520	408.2	320	.761
430	8.0309-3	-3013.5	6.8339	28.336	221	1.0009	-1.0000	1.1370	1.3486	412.5	334	.751	1.1303	1.3506	412.8	328	.761
440	7.8482-3	-3002.1	6.8601	28.336	225	1.0011	-1.0001	1.1420	1.3468	417.0	343	.748	1.1336	1.3492	417.4	335	.761
450	7.6735-3	-2990.6	6.8858	28.335	229	1.0015	-1.0001	1.1474	1.3448	421.4	352	.745	1.1369	1.3479	421.9	342	.761
460	7.5064-3	-2979.1	6.9111	28.334	233	1.0019	-1.0001	1.1533	1.3428	425.7	362	.742	1.1403	1.3465	426.3	349	.760
470	7.3464-3	-2967.6	6.9359	28.333	237	1.0023	-1.0001	1.1596	1.3407	430.0	372	.738	1.1437	1.3451	430.7	357	.760
480	7.1930-3	-2955.9	6.9604	28.331	241	1.0029	-1.0001	1.1665	1.3385	434.2	383	.734	1.1472	1.3438	435.1	364	.760
490	7.0457-3	-2944.2	6.9845	28.329	245	1.0036	-1.0002	1.1739	1.3362	438.4	395	.729	1.1507	1.3424	439.4	371	.760
500	6.9042-3	-2932.5	7.0083	28.327	249	1.0044	-1.0002	1.1820	1.3338	442.4	407	.723	1.1542	1.3410	443.6	378	.760
510	6.7682-3	-2920.6	7.0318	28.324	253	1.0053	-1.0003	1.1908	1.3313	446.4	420	.717	1.1578	1.3397	447.8	385	.760
520	6.6373-3	-2908.6	7.0550	28.321	257	1.0063	-1.0003	1.2004	1.3286	450.4	434	.710	1.1614	1.3383	452.0	393	.759
530	6.5112-3	-2896.6	7.0780	28.317	261	1.0076	-1.0004	1.2109	1.3259	454.2	449	.702	1.1650	1.3369	456.1	400	.758
540	6.3896-3	-2884.4	7.1007	28.313	264	1.0090	-1.0005	1.2223	1.3230	458.0	465	.695	1.1687	1.3356	460.2	408	.758
550	6.2723-3	-2872.1	7.1233	28.308	268	1.0106	-1.0005	1.2347	1.3200	461.8	483	.686	1.1724	1.3343	464.3	416	.757
560	6.1591-3	-2859.7	7.1457	28.302	272	1.0124	-1.0007	1.2482	1.3168	465.4	501	.678	1.1761	1.3329	468.3	423	.756
570	6.0496-3	-2847.2	7.1679	28.295	276	1.0145	-1.0008	1.2628	1.3135	469.0	521	.669	1.1799	1.3316	472.3	431	.755
580	5.9437-3	-2834.5	7.1900	28.288	280	1.0168	-1.0009	1.2787	1.3101	472.6	542	.660	1.1837	1.3303	476.2	439	.754
590	5.8411-3	-2821.6	7.2120	28.279	283	1.0193	-1.0010	1.2960	1.3066	476.1	564	.651	1.1875	1.3291	480.2	447	.753

TABLE 32.4D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO POISE	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO W/CM K	CP	GAM	VS	COND PRAN MICRO W/CM K
K	G/CM3	J/G	J/G K					J/G K		M/S		J/G K		M/S	
600	5.7418-3	-2808.5	7.2339	28.269	287	1.0222	-1.0012	1.3147	1.3030	479.5	588 .642	1.1913	1.3278	484.1	455 .752
610	5.6454-3	-2795.3	7.2558	28.258	291	1.0254	-1.0014	1.3349	1.2992	482.9	613 .633	1.1952	1.3266	487.9	463 .751
620	5.5519-3	-2781.8	7.2777	28.246	294	1.0288	-1.0016	1.3568	1.2954	486.2	639 .625	1.1991	1.3253	491.8	471 .750
630	5.4611-3	-2768.1	7.2996	28.232	298	1.0327	-1.0018	1.3803	1.2915	489.5	667 .616	1.2031	1.3242	495.7	479 .748
640	5.3728-3	-2754.2	7.3215	28.216	301	1.0369	-1.0021	1.4057	1.2874	492.7	696 .609	1.2070	1.3230	499.5	487 .747
650	5.2870-3	-2740.0	7.3435	28.199	305	1.0414	-1.0024	1.4329	1.2833	495.9	727 .602	1.2110	1.3218	503.3	496 .745
660	5.2034-3	-2725.6	7.3656	28.180	309	1.0464	-1.0027	1.4621	1.2792	499.1	758 .595	1.2150	1.3207	507.1	504 .744
670	5.1219-3	-2710.8	7.3878	28.160	312	1.0517	-1.0030	1.4934	1.2750	502.2	791 .589	1.2190	1.3196	510.9	513 .742
680	5.0426-3	-2695.7	7.4102	28.137	316	1.0574	-1.0034	1.5267	1.2707	505.3	825 .584	1.2230	1.3186	514.7	521 .740
690	4.9651-3	-2680.2	7.4327	28.112	319	1.0636	-1.0038	1.5621	1.2665	508.4	860 .580	1.2270	1.3176	518.5	530 .738
700	4.8895-3	-2664.4	7.4555	28.085	323	1.0701	-1.0042	1.5996	1.2622	511.4	895 .576	1.2311	1.3166	522.3	539 .737
710	4.8156-3	-2648.2	7.4785	28.056	326	1.0770	-1.0046	1.6392	1.2580	514.5	931 .574	1.2351	1.3157	526.1	548 .735
720	4.7433-3	-2631.6	7.5017	28.024	329	1.0842	-1.0051	1.6807	1.2538	517.5	967 .572	1.2392	1.3148	530.0	557 .733
730	4.6727-3	-2614.6	7.5252	27.990	333	1.0918	-1.0055	1.7239	1.2498	520.6	1003 .572	1.2432	1.3139	533.8	566 .731
740	4.6035-3	-2597.2	7.5489	27.954	336	1.0996	-1.0060	1.7686	1.2458	523.6	1039 .572	1.2473	1.3131	537.6	575 .728
750	4.5359-3	-2579.2	7.5730	27.915	339	1.1076	-1.0066	1.8144	1.2420	526.7	1073 .574	1.2513	1.3124	541.5	585 .726
760	4.4696-3	-2560.9	7.5973	27.874	343	1.1156	-1.0071	1.8606	1.2383	529.8	1106 .576	1.2553	1.3117	545.3	594 .724
770	4.4046-3	-2542.0	7.6219	27.830	346	1.1236	-1.0076	1.9066	1.2349	533.0	1138 .580	1.2593	1.3110	549.2	603 .722
780	4.3410-3	-2522.7	7.6468	27.784	349	1.1313	-1.0081	1.9514	1.2318	536.2	1166 .584	1.2632	1.3104	553.1	613 .720
790	4.2787-3	-2503.0	7.6719	27.737	352	1.1385	-1.0086	1.9939	1.2290	539.5	1190 .590	1.2671	1.3099	557.0	622 .717
800	4.2177-3	-2482.9	7.6973	27.687	356	1.1449	-1.0090	2.0325	1.2265	542.8	1210 .597	1.2710	1.3094	560.9	632 .715
810	4.1580-3	-2462.4	7.7227	27.636	359	1.1503	-1.0093	2.0656	1.2245	546.3	1225 .605	1.2748	1.3089	564.8	641 .713
820	4.0996-3	-2441.6	7.7482	27.585	362	1.1542	-1.0096	2.0913	1.2230	549.8	1233 .614	1.2785	1.3085	568.7	650 .711
830	4.0426-3	-2420.6	7.7737	27.533	365	1.1562	-1.0098	2.1077	1.2221	553.5	1233 .624	1.2822	1.3081	572.6	660 .709
840	3.9870-3	-2399.5	7.7990	27.481	368	1.1560	-1.0098	2.1126	1.2218	557.2	1226 .634	1.2858	1.3077	576.5	669 .707
850	3.9329-3	-2378.4	7.8239	27.431	371	1.1532	-1.0097	2.1044	1.2223	561.2	1210 .645	1.2893	1.3074	580.4	678 .706
860	3.8803-3	-2357.4	7.8484	27.383	374	1.1476	-1.0094	2.0819	1.2235	565.2	1186 .657	1.2927	1.3070	584.2	687 .704
870	3.8293-3	-2336.8	7.8723	27.337	377	1.1391	-1.0089	2.0450	1.2257	569.5	1155 .668	1.2960	1.3066	588.0	695 .703
880	3.7800-3	-2316.6	7.8954	27.296	380	1.1280	-1.0082	1.9948	1.2286	573.9	1118 .678	1.2992	1.3063	591.7	704 .701
890	3.7324-3	-2296.9	7.9176	27.258	383	1.1147	-1.0074	1.9339	1.2324	578.4	1079 .687	1.3023	1.3059	595.4	712 .700
900	3.6865-3	-2277.9	7.9389	27.225	386	1.1001	-1.0065	1.8663	1.2369	583.1	1038 .694	1.3053	1.3054	599.0	720 .700
910	3.6423-3	-2259.6	7.9591	27.198	389	1.0850	-1.0056	1.7964	1.2419	587.8	1000 .699	1.3082	1.3049	602.5	728 .699
920	3.5997-3	-2242.0	7.9783	27.175	392	1.0703	-1.0046	1.7287	1.2471	592.5	966 .702	1.3110	1.3044	606.0	735 .699
930	3.5585-3	-2225.0	7.9967	27.156	395	1.0569	-1.0038	1.6668	1.2522	597.1	936 .703	1.3138	1.3039	609.3	743 .699
940	3.5187-3	-2208.6	8.0142	27.141	398	1.0452	-1.0030	1.6131	1.2570	601.6	913 .703	1.3164	1.3033	612.6	750 .698
950	3.4802-3	-2192.7	8.0311	27.130	401	1.0353	-1.0024	1.5683	1.2611	606.0	895 .702	1.3191	1.3027	615.8	757 .698
960	3.4428-3	-2177.2	8.0473	27.121	404	1.0273	-1.0019	1.5322	1.2647	610.1	882 .701	1.3217	1.3020	619.0	764 .699
970	3.4065-3	-2162.1	8.0630	27.114	407	1.0209	-1.0014	1.5040	1.2675	614.0	873 .700	1.3242	1.3014	622.2	770 .699
980	3.3711-3	-2147.1	8.0783	27.109	409	1.0160	-1.0011	1.4823	1.2698	617.8	868 .699	1.3267	1.3007	625.3	777 .699
990	3.3366-3	-2132.4	8.0933	27.105	412	1.0122	-1.0009	1.4659	1.2715	621.4	866 .698	1.3291	1.3000	628.3	784 .699

TABLE 32.4D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K	
1000	3.3029-3	-2117.8	8.1079	27.102	415	1.0093	-1.0007	1.4537	1.2728	624.9	865	.698	1.3315	1.2994	631.4	790	.700
1050	3.1448-3	-2045.9	8.1781	27.095	429	1.0025	-1.0002	1.4275	1.2753	641.0	880	.697	1.3431	1.2961	646.2	823	.701
1100	3.0016-3	-1974.7	8.2444	27.093	443	1.0008	-1.0001	1.4240	1.2752	656.1	906	.697	1.3543	1.2930	660.7	855	.703
1150	2.8711-3	-1903.5	8.3077	27.093	457	1.0003	-1.0000	1.4258	1.2744	670.7	933	.698	1.3650	1.2900	674.7	887	.704
1200	2.7514-3	-1832.1	8.3684	27.093	471	1.0002	-1.0000	1.4293	1.2735	684.8	962	.699	1.3753	1.2872	688.5	918	.705
1250	2.6413-3	-1760.5	8.4269	27.092	484	1.0001	-1.0000	1.4333	1.2725	698.7	990	.701	1.3852	1.2846	702.0	950	.706
1300	2.5397-3	-1688.7	8.4832	27.092	497	1.0001	-1.0000	1.4377	1.2714	712.2	1019	.702	1.3947	1.2821	715.2	981	.707
1350	2.4457-3	-1616.7	8.5375	27.092	510	1.0000	-1.0000	1.4423	1.2703	725.5	1048	.702	1.4038	1.2798	728.2	1013	.707
1400	2.3583-3	-1544.5	8.5900	27.092	523	1.0000	-1.0000	1.4471	1.2692	738.4	1077	.703	1.4126	1.2776	740.9	1044	.708
1450	2.2770-3	-1472.0	8.6409	27.092	536	1.0000	-1.0000	1.4519	1.2680	751.2	1106	.704	1.4209	1.2755	753.4	1075	.708
1500	2.2011-3	-1399.3	8.6902	27.092	549	1.0000	-1.0000	1.4568	1.2669	763.7	1135	.704	1.4289	1.2735	765.7	1106	.709
1550	2.1301-3	-1326.4	8.7381	27.092	561	1.0000	-1.0000	1.4618	1.2657	775.9	1164	.705	1.4365	1.2717	777.8	1137	.709
1600	2.0635-3	-1253.1	8.7846	27.092	573	1.0000	-1.0000	1.4668	1.2646	788.0	1194	.705	1.4438	1.2699	789.7	1168	.709
1650	2.0010-3	-1179.7	8.8298	27.092	586	1.0001	-1.0000	1.4718	1.2635	799.9	1224	.705	1.4507	1.2683	801.4	1199	.709
1700	1.9421-3	-1106.0	8.8738	27.092	598	1.0001	-1.0000	1.4769	1.2624	811.5	1254	.704	1.4573	1.2668	813.0	1229	.709
1750	1.8866-3	-1032.0	8.9167	27.092	610	1.0001	-1.0000	1.4820	1.2613	823.0	1284	.704	1.4636	1.2653	824.4	1260	.708
1800	1.8342-3	-957.7	8.9585	27.092	622	1.0002	-1.0000	1.4873	1.2601	834.3	1316	.703	1.4696	1.2639	835.6	1290	.708
1850	1.7846-3	-883.2	8.9993	27.092	634	1.0003	-1.0000	1.4928	1.2590	845.5	1348	.702	1.4754	1.2627	846.7	1321	.708
1900	1.7376-3	-808.5	9.0392	27.091	645	1.0005	-1.0000	1.4988	1.2578	856.4	1381	.700	1.4808	1.2614	857.7	1351	.707
1950	1.6931-3	-733.4	9.0782	27.091	657	1.0008	-1.0000	1.5053	1.2566	867.2	1416	.698	1.4860	1.2603	868.5	1381	.707
2000	1.6507-3	-657.9	9.1164	27.090	668	1.0011	-1.0000	1.5127	1.2552	877.8	1454	.695	1.4909	1.2592	879.2	1411	.706
2050	1.6104-3	-582.1	9.1539	27.089	680	1.0016	-1.0001	1.5213	1.2537	888.2	1494	.692	1.4956	1.2582	889.8	1440	.706
2100	1.5720-3	-505.8	9.1907	27.088	691	1.0024	-1.0001	1.5315	1.2520	898.3	1537	.688	1.5000	1.2573	900.2	1470	.705
2150	1.5353-3	-428.9	9.2268	27.086	702	1.0034	-1.0001	1.5440	1.2500	908.3	1585	.684	1.5043	1.2564	910.6	1499	.704
2200	1.5003-3	-351.3	9.2625	27.084	713	1.0047	-1.0002	1.5596	1.2477	918.0	1639	.678	1.5083	1.2555	920.9	1528	.704
2250	1.4667-3	-272.8	9.2978	27.080	724	1.0066	-1.0002	1.5792	1.2450	927.4	1701	.672	1.5121	1.2548	931.0	1558	.703
2300	1.4346-3	-193.3	9.3327	27.076	735	1.0091	-1.0003	1.6040	1.2416	936.5	1773	.665	1.5158	1.2541	941.1	1587	.702
2350	1.4038-3	-112.3	9.3676	27.069	746	1.0125	-1.0004	1.6358	1.2377	945.2	1856	.657	1.5192	1.2534	951.2	1616	.701
2400	1.3741-3	-29.6	9.4024	27.061	756	1.0170	-1.0006	1.6765	1.2329	953.5	1956	.648	1.5225	1.2528	961.2	1646	.700
2450	1.3455-3	55.5	9.4375	27.050	767	1.0230	-1.0008	1.7283	1.2274	961.4	2074	.639	1.5256	1.2523	971.1	1675	.699
2500	1.3179-3	143.5	9.4730	27.035	778	1.0308	-1.0012	1.7939	1.2210	968.9	2216	.629	1.5286	1.2519	981.1	1705	.697
2550	1.2911-3	235.2	9.5093	27.016	788	1.0410	-1.0016	1.8759	1.2139	976.0	2388	.619	1.5314	1.2515	991.0	1735	.696
2600	1.2651-3	331.4	9.5467	26.992	798	1.0539	-1.0021	1.9767	1.2063	982.9	2594	.608	1.5340	1.2513	1001.1	1765	.694
2650	1.2398-3	433.2	9.5855	26.960	808	1.0698	-1.0028	2.0974	1.1984	989.6	2839	.597	1.5365	1.2511	1011.2	1795	.692
2700	1.2151-3	541.5	9.6260	26.920	818	1.0889	-1.0036	2.2382	1.1905	996.4	3127	.586	1.5388	1.2511	1021.4	1825	.690
2750	1.1908-3	657.3	9.6685	26.871	828	1.1112	-1.0046	2.3971	1.1832	1003.4	3461	.574	1.5410	1.2512	1031.8	1856	.688
2800	1.1669-3	781.4	9.7132	26.811	838	1.1362	-1.0057	2.5706	1.1765	1010.7	3842	.561	1.5430	1.2515	1042.5	1886	.685
2850	1.1434-3	914.5	9.7603	26.740	847	1.1635	-1.0070	2.7542	1.1707	1018.5	4269	.547	1.5449	1.2520	1053.3	1917	.683
2900	1.1202-3	1057.0	9.8098	26.658	857	1.1926	-1.0085	2.9436	1.1658	1026.9	4738	.532	1.5467	1.2526	1064.4	1948	.680
2950	1.0973-3	1208.9	9.8618	26.563	866	1.2229	-1.0100	3.1349	1.1618	1035.8	5248	.517	1.5483	1.2534	1075.8	1980	.677
3000	1.0747-3	1370.4	9.9161	26.457	875	1.2540	-1.0117	3.3254	1.1587	1045.2	5796	.502	1.5499	1.2543	1087.5	2013	.674

TABLE 32.5D .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND	PRAN
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	MICRO W/CM K		J/G K		M/S	MICRO W/CM K	
200	8.6337-2	-3266.1	5.5240	28.338	110	1.0000	-1.0000	1.0699	1.3779	284.3	149	.792	1.0699	1.3779	284.3	149	.792
210	8.2226-2	-3255.4	5.5763	28.338	116	1.0000	-1.0000	1.0717	1.3770	291.3	158	.787	1.0717	1.3770	291.3	158	.787
220	7.8488-2	-3244.6	5.6262	28.338	121	1.0000	-1.0000	1.0736	1.3760	298.0	166	.783	1.0736	1.3761	298.0	166	.783
230	7.5076-2	-3233.9	5.6740	28.338	126	1.0000	-1.0000	1.0756	1.3751	304.6	175	.779	1.0756	1.3751	304.6	175	.779
240	7.1948-2	-3223.1	5.7198	28.338	132	1.0000	-1.0000	1.0777	1.3741	311.1	183	.776	1.0777	1.3741	311.1	183	.776
250	6.9070-2	-3212.3	5.7638	28.338	137	1.0000	-1.0000	1.0799	1.3730	317.4	191	.773	1.0798	1.3731	317.4	191	.773
260	6.6413-2	-3201.5	5.8062	28.338	142	1.0000	-1.0000	1.0821	1.3720	323.5	199	.771	1.0821	1.3720	323.5	199	.771
270	6.3954-2	-3190.7	5.8471	28.338	147	1.0000	-1.0000	1.0845	1.3709	329.5	207	.769	1.0844	1.3709	329.5	207	.769
280	6.1670-2	-3179.8	5.8866	28.338	152	1.0000	-1.0000	1.0869	1.3697	335.4	215	.768	1.0868	1.3698	335.5	215	.768
290	5.9543-2	-3169.0	5.9248	28.338	157	1.0000	-1.0000	1.0894	1.3686	341.2	223	.767	1.0893	1.3686	341.2	223	.767
298	5.7916-2	-3160.1	5.9550	28.338	161	1.0000	-1.0000	1.0915	1.3676	345.9	229	.766	1.0914	1.3677	345.9	229	.766
300	5.7559-2	-3158.1	5.9617	28.338	162	1.0000	-1.0000	1.0920	1.3674	346.9	231	.766	1.0918	1.3675	346.9	231	.766
310	5.5702-2	-3147.1	5.9976	28.338	167	1.0000	-1.0000	1.0946	1.3662	352.5	238	.766	1.0944	1.3663	352.5	238	.766
320	5.3961-2	-3136.2	6.0324	28.338	171	1.0000	-1.0000	1.0973	1.3649	358.0	246	.766	1.0971	1.3650	358.0	246	.766
330	5.2326-2	-3125.2	6.0662	28.338	176	1.0000	-1.0000	1.1001	1.3637	363.4	253	.766	1.0999	1.3638	363.4	253	.766
340	5.0787-2	-3114.2	6.0991	28.338	181	1.0000	-1.0000	1.1030	1.3624	368.7	260	.766	1.1027	1.3625	368.7	260	.766
350	4.9336-2	-3103.1	6.1311	28.338	185	1.0000	-1.0000	1.1060	1.3611	373.9	268	.766	1.1055	1.3613	373.9	267	.766
360	4.7965-2	-3092.0	6.1623	28.338	190	1.0000	-1.0000	1.1090	1.3597	379.0	275	.765	1.1084	1.3600	379.0	275	.766
370	4.6669-2	-3080.9	6.1927	28.338	195	1.0000	-1.0000	1.1122	1.3584	384.0	283	.764	1.1114	1.3587	384.0	283	.765
380	4.5441-2	-3069.8	6.2224	28.338	199	1.0001	-1.0000	1.1154	1.3570	389.0	291	.763	1.1144	1.3574	389.0	290	.764
390	4.4276-2	-3058.6	6.2514	28.338	204	1.0001	-1.0000	1.1187	1.3556	393.8	299	.762	1.1175	1.3560	393.9	298	.763
400	4.3169-2	-3047.4	6.2798	28.338	208	1.0001	-1.0000	1.1222	1.3541	398.6	307	.760	1.1206	1.3547	398.7	306	.762
410	4.2116-2	-3036.2	6.3076	28.338	212	1.0002	-1.0000	1.1258	1.3526	403.4	315	.759	1.1238	1.3533	403.5	313	.762
420	4.1113-2	-3024.9	6.3347	28.338	216	1.0003	-1.0000	1.1296	1.3511	408.0	323	.758	1.1270	1.3520	408.2	320	.761
430	4.0156-2	-3013.6	6.3614	28.338	221	1.0004	-1.0000	1.1335	1.3496	412.6	331	.757	1.1302	1.3506	412.8	328	.761
440	3.9243-2	-3002.2	6.3875	28.337	225	1.0005	-1.0000	1.1375	1.3480	417.2	339	.755	1.1335	1.3492	417.4	335	.761
450	3.8371-2	-2990.8	6.4131	28.337	229	1.0006	-1.0000	1.1418	1.3464	421.6	347	.754	1.1369	1.3479	421.9	342	.761
460	3.7536-2	-2979.4	6.4382	28.337	233	1.0008	-1.0000	1.1463	1.3447	426.0	355	.752	1.1402	1.3465	426.3	349	.761
470	3.6737-2	-2967.9	6.4629	28.336	237	1.0010	-1.0001	1.1510	1.3430	430.4	364	.750	1.1436	1.3451	430.7	356	.761
480	3.5970-2	-2956.4	6.4872	28.336	241	1.0012	-1.0001	1.1560	1.3412	434.6	372	.748	1.1471	1.3437	435.0	363	.761
490	3.5235-2	-2944.8	6.5111	28.335	245	1.0015	-1.0001	1.1612	1.3394	438.8	381	.746	1.1505	1.3424	439.3	371	.761
500	3.4529-2	-2933.2	6.5346	28.334	249	1.0019	-1.0001	1.1668	1.3375	443.0	391	.743	1.1540	1.3410	443.6	378	.760
510	3.3851-2	-2921.5	6.5578	28.333	253	1.0023	-1.0001	1.1727	1.3356	447.1	401	.740	1.1576	1.3396	447.8	385	.760
520	3.3198-2	-2909.7	6.5806	28.331	257	1.0028	-1.0001	1.1790	1.3336	451.1	411	.736	1.1611	1.3382	451.9	392	.760
530	3.2570-2	-2897.9	6.6031	28.329	261	1.0033	-1.0002	1.1857	1.3316	455.1	422	.732	1.1647	1.3369	456.0	400	.759
540	3.1965-2	-2886.0	6.6254	28.328	264	1.0040	-1.0002	1.1928	1.3295	459.0	433	.728	1.1683	1.3355	460.1	407	.759
550	3.1381-2	-2874.0	6.6473	28.325	268	1.0047	-1.0003	1.2004	1.3273	462.9	445	.723	1.1719	1.3342	464.1	415	.758
560	3.0818-2	-2862.0	6.6690	28.323	272	1.0055	-1.0003	1.2085	1.3250	466.7	458	.718	1.1756	1.3328	468.1	422	.758
570	3.0274-2	-2849.8	6.6905	28.320	276	1.0065	-1.0004	1.2172	1.3227	470.5	471	.712	1.1793	1.3315	472.0	430	.757
580	2.9748-2	-2837.6	6.7117	28.316	280	1.0075	-1.0004	1.2265	1.3203	474.2	485	.707	1.1830	1.3302	476.0	437	.756
590	2.9240-2	-2825.3	6.7328	28.312	283	1.0087	-1.0005	1.2365	1.3178	477.8	500	.701	1.1867	1.3288	479.8	445	.756

TABLE 32.5D CONTINUED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS							FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K		J/G K		M/S	W/CM K
600	2.8748-2	-2812.9	6.7536	28.308	287	1.0101	-1.0006	1.2472	1.3153	481.4	515	.695	1.1904	1.3275	483.7	453 .755
610	2.8272-2	-2800.4	6.7744	28.303	291	1.0116	-1.0007	1.2586	1.3126	485.0	531	.688	1.1942	1.3263	487.5	460 .754
620	2.7810-2	-2787.7	6.7949	28.297	294	1.0132	-1.0008	1.2708	1.3099	488.5	549	.682	1.1979	1.3250	491.3	468 .753
630	2.7363-2	-2774.9	6.8154	28.291	298	1.0151	-1.0009	1.2840	1.3071	492.0	567	.675	1.2017	1.3237	495.1	476 .752
640	2.6928-2	-2762.0	6.8357	28.284	301	1.0171	-1.0010	1.2981	1.3043	495.4	585	.668	1.2055	1.3225	498.8	484 .751
650	2.6507-2	-2749.0	6.8559	28.276	305	1.0193	-1.0011	1.3132	1.3013	498.7	605	.662	1.2093	1.3213	502.5	492 .750
660	2.6097-2	-2735.8	6.8761	28.267	309	1.0218	-1.0013	1.3293	1.2982	502.0	626	.655	1.2131	1.3201	506.2	500 .749
670	2.5698-2	-2722.4	6.8962	28.257	312	1.0244	-1.0014	1.3466	1.2951	505.3	648	.649	1.2170	1.3189	509.9	508 .748
680	2.5311-2	-2708.8	6.9163	28.246	316	1.0274	-1.0016	1.3652	1.2919	508.5	670	.643	1.2208	1.3177	513.6	516 .747
690	2.4933-2	-2695.1	6.9364	28.234	319	1.0306	-1.0018	1.3850	1.2886	511.7	694	.637	1.2246	1.3166	517.2	524 .746
700	2.4566-2	-2681.1	6.9564	28.221	322	1.0340	-1.0021	1.4061	1.2853	514.8	719	.631	1.2285	1.3155	520.9	532 .744
710	2.4207-2	-2667.0	6.9766	28.207	326	1.0377	-1.0023	1.4287	1.2819	518.0	744	.625	1.2323	1.3144	524.5	540 .743
720	2.3858-2	-2652.6	6.9967	28.191	329	1.0418	-1.0025	1.4527	1.2784	521.0	771	.620	1.2361	1.3134	528.1	549 .742
730	2.3517-2	-2637.9	7.0169	28.174	333	1.0461	-1.0028	1.4783	1.2749	524.1	799	.616	1.2400	1.3123	531.7	557 .741
740	2.3184-2	-2623.0	7.0372	28.155	336	1.0507	-1.0031	1.5054	1.2714	527.1	827	.612	1.2438	1.3113	535.3	565 .739
750	2.2858-2	-2607.8	7.0576	28.135	339	1.0557	-1.0034	1.5340	1.2678	530.1	856	.608	1.2476	1.3104	538.9	574 .738
760	2.2540-2	-2592.3	7.0781	28.114	343	1.0610	-1.0038	1.5643	1.2643	533.1	886	.605	1.2515	1.3094	542.5	582 .736
770	2.2229-2	-2576.5	7.0988	28.090	346	1.0665	-1.0041	1.5961	1.2607	536.0	917	.603	1.2553	1.3086	546.1	591 .735
780	2.1924-2	-2560.4	7.1196	28.065	349	1.0724	-1.0045	1.6293	1.2572	539.0	948	.601	1.2590	1.3077	549.7	600 .733
790	2.1626-2	-2543.9	7.1406	28.038	352	1.0786	-1.0049	1.6640	1.2537	541.9	979	.599	1.2628	1.3069	553.3	608 .732
800	2.1334-2	-2527.1	7.1617	28.009	356	1.0850	-1.0054	1.6998	1.2503	544.9	1010	.599	1.2666	1.3061	556.9	617 .730
810	2.1047-2	-2509.9	7.1831	27.979	359	1.0916	-1.0058	1.7367	1.2470	547.9	1042	.598	1.2703	1.3054	560.5	626 .729
820	2.0766-2	-2492.4	7.2046	27.946	362	1.0984	-1.0062	1.7743	1.2439	550.9	1072	.599	1.2740	1.3047	564.2	634 .727
830	2.0491-2	-2474.4	7.2263	27.912	365	1.1052	-1.0067	1.8122	1.2408	553.9	1103	.600	1.2776	1.3040	567.8	643 .726
840	2.0221-2	-2456.1	7.2483	27.875	368	1.1121	-1.0072	1.8501	1.2380	556.9	1132	.602	1.2812	1.3034	571.5	652 .724
850	1.9955-2	-2437.4	7.2704	27.837	371	1.1189	-1.0076	1.8874	1.2353	560.0	1159	.605	1.2848	1.3029	575.1	661 .722
860	1.9695-2	-2418.4	7.2927	27.797	375	1.1254	-1.0081	1.9233	1.2329	563.2	1184	.608	1.2883	1.3024	578.8	669 .721
870	1.9440-2	-2399.0	7.3151	27.756	378	1.1316	-1.0085	1.9572	1.2307	566.3	1207	.612	1.2918	1.3019	582.5	678 .719
880	1.9190-2	-2379.2	7.3376	27.714	381	1.1372	-1.0089	1.9881	1.2289	569.6	1227	.617	1.2952	1.3015	586.2	687 .718
890	1.8944-2	-2359.2	7.3603	27.670	384	1.1420	-1.0093	2.0151	1.2273	572.9	1242	.622	1.2986	1.3011	589.9	696 .716
900	1.8703-2	-2338.9	7.3829	27.625	387	1.1459	-1.0096	2.0372	1.2262	576.3	1254	.628	1.3019	1.3007	593.6	704 .715
910	1.8468-2	-2318.5	7.4055	27.580	390	1.1486	-1.0098	2.0532	1.2254	579.8	1260	.635	1.3051	1.3004	597.3	713 .713
920	1.8237-2	-2297.9	7.4280	27.535	393	1.1498	-1.0099	2.0620	1.2250	583.4	1261	.642	1.3083	1.3000	601.0	722 .712
930	1.8012-2	-2277.3	7.4503	27.491	395	1.1494	-1.0099	2.0628	1.2251	587.0	1255	.650	1.3114	1.2998	604.6	730 .710
940	1.7792-2	-2256.7	7.4723	27.447	398	1.1472	-1.0098	2.0547	1.2257	590.8	1244	.658	1.3144	1.2995	608.3	738 .709
950	1.7578-2	-2236.2	7.4940	27.405	401	1.1430	-1.0096	2.0373	1.2269	594.7	1228	.666	1.3174	1.2992	611.9	747 .708
960	1.7369-2	-2216.0	7.5152	27.365	404	1.1368	-1.0093	2.0106	1.2285	598.6	1206	.674	1.3203	1.2989	615.5	755 .707
970	1.7166-2	-2196.0	7.5359	27.327	407	1.1288	-1.0088	1.9751	1.2308	602.7	1179	.682	1.3231	1.2986	619.1	763 .706
980	1.6970-2	-2176.5	7.5559	27.293	410	1.1191	-1.0082	1.9321	1.2335	606.8	1150	.689	1.3258	1.2983	622.6	771 .705
990	1.6779-2	-2157.4	7.5753	27.261	413	1.1081	-1.0075	1.8833	1.2367	611.1	1119	.695	1.3284	1.2980	626.0	778 .704

TABLE 32.5D CONCLUDED .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS
(ONLY GAS PHASE PERMITTED)

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

						REACTING COMPOSITIONS						FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND PRAN MICRO	CP	GAM	VS	COND PRAN MICRO
K	G/CM3	J/G	J/G K		POISE			J/G K		M/S	W/CM K	J/G K		M/S	W/CM K
1000	1.6594-2	-2138.8	7.5939	27.233	416	1.0963	-1.0067	1.8309	1.2402	615.3	1088 .699	1.3310	1.2977	629.4	786 .704
1050	1.5752-2	-2053.6	7.6772	27.143	430	1.0421	-1.0031	1.5937	1.2589	636.3	970 .706	1.3430	1.2955	645.5	821 .703
1100	1.5017-2	-1977.3	7.7482	27.110	443	1.0145	-1.0011	1.4790	1.2695	654.4	935 .702	1.3543	1.2928	660.4	854 .703
1150	1.4359-2	-1904.4	7.8130	27.099	457	1.0050	-1.0004	1.4435	1.2727	670.1	943 .700	1.3650	1.2899	674.6	886 .704
1200	1.3759-2	-1832.5	7.8742	27.096	471	1.0019	-1.0002	1.4354	1.2730	684.6	965 .700	1.3753	1.2872	688.5	918 .705
1250	1.3207-2	-1760.7	7.9328	27.094	484	1.0009	-1.0001	1.4357	1.2723	698.6	992 .701	1.3852	1.2846	702.0	950 .706
1300	1.2699-2	-1688.9	7.9891	27.093	497	1.0005	-1.0001	1.4388	1.2713	712.2	1020 .702	1.3947	1.2821	715.2	981 .707
1350	1.2229-2	-1616.8	8.0435	27.093	510	1.0003	-1.0000	1.4429	1.2703	725.4	1048 .703	1.4038	1.2798	728.1	1013 .707
1400	1.1792-2	-1544.6	8.0961	27.093	523	1.0002	-1.0000	1.4474	1.2692	738.4	1077 .703	1.4126	1.2776	740.9	1044 .708
1450	1.1385-2	-1472.1	8.1470	27.093	536	1.0001	-1.0000	1.4521	1.2680	751.2	1106 .704	1.4209	1.2755	753.4	1075 .708
1500	1.1006-2	-1399.4	8.1963	27.093	549	1.0001	-1.0000	1.4570	1.2669	763.7	1135 .704	1.4289	1.2735	765.7	1106 .709
1550	1.0651-2	-1326.4	8.2441	27.092	561	1.0001	-1.0000	1.4618	1.2658	775.9	1164 .705	1.4365	1.2717	777.8	1137 .709
1600	1.0318-2	-1253.2	8.2906	27.092	573	1.0001	-1.0000	1.4667	1.2646	788.0	1193 .705	1.4438	1.2699	789.7	1168 .709
1650	1.0005-2	-1179.7	8.3358	27.092	586	1.0001	-1.0000	1.4716	1.2635	799.9	1223 .705	1.4507	1.2683	801.4	1199 .709
1700	9.7107-3	-1106.0	8.3798	27.092	598	1.0001	-1.0000	1.4764	1.2625	811.6	1252 .705	1.4573	1.2668	813.0	1229 .709
1750	9.4332-3	-1032.1	8.4227	27.092	610	1.0001	-1.0000	1.4812	1.2614	823.1	1282 .705	1.4636	1.2653	824.3	1260 .708
1800	9.1712-3	-957.9	8.4645	27.092	622	1.0001	-1.0000	1.4861	1.2603	834.4	1312 .704	1.4696	1.2639	835.6	1290 .708
1850	8.9233-3	-883.5	8.5053	27.092	634	1.0002	-1.0000	1.4909	1.2593	845.6	1342 .704	1.4754	1.2626	846.7	1321 .708
1900	8.6884-3	-808.8	8.5451	27.092	645	1.0003	-1.0000	1.4959	1.2583	856.6	1373 .703	1.4808	1.2614	857.6	1351 .707
1950	8.4655-3	-733.9	8.5840	27.092	657	1.0004	-1.0000	1.5011	1.2572	867.4	1405 .702	1.4860	1.2603	868.5	1381 .707
2000	8.2538-3	-658.7	8.6221	27.091	668	1.0005	-1.0000	1.5065	1.2561	878.1	1438 .700	1.4909	1.2592	879.2	1411 .706
2050	8.0524-3	-583.2	8.6594	27.091	680	1.0007	-1.0000	1.5124	1.2550	888.6	1471 .699	1.4956	1.2582	889.7	1440 .706
2100	7.8605-3	-507.4	8.6959	27.090	691	1.0011	-1.0000	1.5190	1.2538	899.0	1506 .697	1.5000	1.2572	900.2	1469 .705
2150	7.6775-3	-431.3	8.7317	27.089	702	1.0015	-1.0001	1.5264	1.2525	909.1	1544 .694	1.5043	1.2563	910.5	1499 .705
2200	7.5027-3	-354.8	8.7669	27.088	713	1.0021	-1.0001	1.5350	1.2511	919.1	1583 .691	1.5083	1.2555	920.8	1528 .704
2250	7.3355-3	-277.8	8.8015	27.087	724	1.0028	-1.0001	1.5451	1.2495	929.0	1626 .688	1.5121	1.2547	930.9	1557 .703
2300	7.1755-3	-200.2	8.8356	27.085	735	1.0039	-1.0001	1.5574	1.2477	938.6	1673 .684	1.5157	1.2540	940.9	1586 .702
2350	7.0222-3	-122.0	8.8692	27.082	746	1.0053	-1.0002	1.5722	1.2456	948.0	1725 .680	1.5192	1.2533	950.9	1616 .701
2400	6.8750-3	-42.9	8.9025	27.079	757	1.0071	-1.0003	1.5904	1.2431	957.1	1784 .675	1.5225	1.2526	960.8	1645 .700
2450	6.7335-3	37.1	8.9355	27.074	767	1.0095	-1.0003	1.6129	1.2402	966.0	1849 .669	1.5256	1.2520	970.6	1674 .699
2500	6.5974-3	118.4	8.9684	27.068	778	1.0126	-1.0005	1.6406	1.2369	974.6	1925 .663	1.5286	1.2515	980.3	1703 .698
2550	6.4662-3	201.3	9.0012	27.060	788	1.0165	-1.0006	1.6748	1.2330	982.9	2012 .656	1.5315	1.2510	990.0	1733 .697
2600	6.3395-3	286.0	9.0341	27.050	799	1.0216	-1.0008	1.7167	1.2286	990.9	2112 .649	1.5342	1.2505	999.7	1762 .695
2650	6.2170-3	373.1	9.0673	27.038	809	1.0280	-1.0011	1.7679	1.2236	998.6	2228 .642	1.5367	1.2502	1009.3	1791 .694
2700	6.0982-3	463.0	9.1009	27.022	819	1.0360	-1.0014	1.8296	1.2181	1006.0	2364 .634	1.5391	1.2499	1019.0	1821 .692
2750	5.9829-3	556.3	9.1351	27.001	829	1.0457	-1.0018	1.9029	1.2123	1013.2	2521 .626	1.5414	1.2496	1028.7	1850 .691
2800	5.8706-3	653.5	9.1701	26.976	839	1.0575	-1.0024	1.9884	1.2062	1020.3	2702 .617	1.5436	1.2495	1038.4	1879 .690
2850	5.7611-3	755.3	9.2062	26.946	849	1.0713	-1.0030	2.0861	1.2001	1027.3	2910 .609	1.5457	1.2494	1048.2	1908 .688
2900	5.6540-3	862.3	9.2434	26.909	859	1.0871	-1.0037	2.1952	1.1942	1034.4	3146 .599	1.5476	1.2495	1058.1	1937 .686
2950	5.5490-3	975.0	9.2819	26.865	868	1.1049	-1.0046	2.3138	1.1887	1041.7	3410 .589	1.5495	1.2496	1068.1	1966 .685
3000	5.4461-3	1093.8	9.3219	26.813	878	1.1243	-1.0055	2.4398	1.1836	1049.3	3702 .579	1.5512	1.2498	1078.3	1995 .683

TABLE 32.1E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1.01325 KPA (0.01 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS									GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.160-5	-3640.8	6.5477	27.092	1.079	1.043	1.842-5	30.238	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	1.959-5	-3616.2	6.6647	27.092	1.546	1.066	1.673-5	30.208	140	1.0000	-1.000	0.984	1.388	290	188	.731	0.984	1.388	188	.731
240	1.752-5	-3558.7	6.9127	27.092	5.458	1.088	1.519-5	29.912	147	1.0000	-1.000	1.000	1.385	304	200	.736	1.000	1.385	200	.736
260	1.338-5	-3227.3	8.2220	27.1484	1.284	1.092	1.307-5	27.886	139	1.0000	-1.000	1.097	1.373	326	196	.782	1.097	1.373	196	.782
280	1.233-5	-3191.4	8.3570	27.191	1.119	1.095	1.211-5	27.832	149	1.0001	-1.000	1.104	1.371	339	211	.779	1.103	1.371	211	.780
298	1.158-5	-3170.9	8.4277	27.237	1.130	1.100	1.138-5	27.852	158	1.0002	-1.000	1.108	1.369	349	226	.774	1.106	1.370	225	.777
300	1.151-5	-3168.8	8.4347	27.242	1.131	1.100	1.132-5	27.855	159	1.0002	-1.000	1.108	1.369	350	228	.774	1.107	1.369	226	.777
320	1.079-5	-3146.1	8.5080	27.304	1.144	1.105	1.062-5	27.883	169	1.0005	-1.000	1.115	1.366	361	245	.768	1.110	1.367	241	.776
340	1.016-5	-3123.1	8.5778	27.375	1.159	1.110	1.001-5	27.914	178	1.0013	-1.000	1.125	1.361	371	265	.757	1.114	1.365	256	.775
360	9.591-6	-3099.7	8.6446	27.453	1.180	1.115	9.461-6	27.948	188	1.0028	-1.000	1.142	1.355	381	291	.736	1.118	1.363	271	.773
380	9.084-6	-3075.8	8.7092	27.534	1.212	1.120	8.973-6	27.981	197	1.0059	-1.000	1.169	1.346	390	328	.703	1.122	1.360	287	.770
400	8.626-6	-3051.1	8.7725	27.615	1.258	1.126	8.534-6	28.010	206	1.0112	-1.000	1.213	1.333	398	379	.660	1.127	1.357	304	.766
420	8.209-6	-3025.3	8.8355	27.691	1.327	1.132	8.133-6	28.031	215	1.0199	-1.001	1.278	1.317	405	449	.612	1.133	1.355	320	.762
440	7.826-6	-2997.9	8.8993	27.757	1.423	1.139	7.766-6	28.040	224	1.0331	-1.001	1.371	1.298	411	543	.565	1.139	1.352	336	.758
460	7.471-6	-2968.2	8.9653	27.807	1.553	1.147	7.426-6	28.031	232	1.0517	-1.002	1.495	1.277	417	661	.526	1.147	1.349	354	.753
480	7.140-6	-2935.5	9.0347	27.835	1.716	1.155	7.108-6	27.998	241	1.0762	-1.003	1.651	1.258	423	797	.499	1.155	1.346	373	.746
500	6.828-6	-2899.3	9.1086	27.837	1.909	1.164	6.809-6	27.938	249	1.1057	-1.005	1.834	1.240	430	939	.487	1.164	1.344	393	.738
520	6.532-6	-2859.0	9.1875	27.810	2.122	1.174	6.526-6	27.846	257	1.1383	-1.007	2.030	1.225	436	1070	.488	1.174	1.341	416	.727
540	6.253-6	-2815.5	9.2697	27.708	2.202	1.185	6.253-6	27.708	265	1.1670	-1.008	2.202	1.215	444	1155	.506	1.185	1.339	440	.716
560	5.992-6	-2770.5	9.3515	27.532	2.280	1.196	5.992-6	27.532	273	1.1794	-1.009	2.280	1.212	453	1146	.544	1.196	1.338	464	.705
580	5.749-6	-2725.3	9.4309	27.364	2.211	1.207	5.749-6	27.364	281	1.1656	-1.009	2.211	1.217	463	1042	.596	1.207	1.336	488	.695
600	5.531-6	-2683.3	9.5021	27.229	1.962	1.217	5.531-6	27.229	288	1.1199	-1.006	1.962	1.233	475	870	.650	1.217	1.335	510	.688
620	5.336-6	-2647.2	9.5612	27.148	1.651	1.225	5.336-6	27.148	295	1.0627	-1.003	1.651	1.260	489	715	.682	1.225	1.333	529	.684
640	5.163-6	-2616.4	9.6101	27.112	1.453	1.232	5.163-6	27.112	302	1.0251	-1.001	1.453	1.283	502	638	.688	1.232	1.331	545	.683
660	5.004-6	-2588.3	9.6534	27.099	1.376	1.238	5.004-6	27.099	309	1.0089	-1.000	1.376	1.293	512	619	.687	1.238	1.329	561	.683
680	4.856-6	-2561.0	9.6941	27.095	1.356	1.244	4.856-6	27.094	316	1.0031	-1.000	1.356	1.295	520	624	.687	1.244	1.327	575	.684
700	4.717-6	-2533.9	9.7334	27.093	1.355	1.250	4.717-6	27.093	323	1.0011	-1.000	1.355	1.293	527	637	.687	1.250	1.325	589	.685
720	4.586-6	-2506.8	9.7717	27.092	1.361	1.256	4.586-6	27.092	329	1.0004	-1.000	1.361	1.291	534	652	.687	1.256	1.323	603	.686
740	4.462-6	-2479.5	9.8090	27.092	1.368	1.262	4.462-6	27.092	336	1.0002	-1.000	1.368	1.289	541	668	.688	1.262	1.321	617	.687
760	4.344-6	-2452.0	9.8456	27.092	1.375	1.268	4.344-6	27.092	342	1.0001	-1.000	1.375	1.287	548	684	.688	1.268	1.319	631	.688
780	4.233-6	-2424.5	9.8814	27.092	1.381	1.273	4.233-6	27.092	349	1.0000	-1.000	1.381	1.286	555	700	.688	1.273	1.318	645	.689
800	4.127-6	-2396.8	9.9165	27.092	1.386	1.279	4.127-6	27.092	355	1.0000	-1.000	1.386	1.284	562	715	.689	1.279	1.316	659	.689

TABLE 32.2E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 10.1325 KPA (0.10 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.160-4	-3641.0	6.0066	27.092	1.047	1.043	1.843-4	30.240	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	1.963-4	-3619.6	6.1088	27.092	1.113	1.066	1.675-4	30.237	140	1.0000	-1.000	0.983	1.389	290	188	.731	0.983	1.389	188	.731
240	1.795-4	-3594.6	6.2175	27.092	1.504	1.088	1.534-4	30.207	150	1.0000	-1.000	0.987	1.387	303	204	.728	0.987	1.387	204	.728
260	1.630-4	-3548.1	6.4022	27.092	3.742	1.110	1.406-4	30.005	159	1.0000	-1.000	0.999	1.384	316	217	.730	0.999	1.384	217	.730
280	1.391-4	-3371.7	7.0509	27.11111	.918	1.265	1.264-4	29.048	160	1.0000	-1.000	1.045	1.377	332	222	.752	1.045	1.377	222	.752
298	1.158-4	-3171.0	7.7520	27.237	1.129	1.100	1.138-4	27.853	158	1.0000	-1.000	1.107	1.369	349	225	.776	1.106	1.370	225	.777
300	1.151-4	-3168.9	7.7590	27.242	1.130	1.100	1.132-4	27.855	159	1.0001	-1.000	1.107	1.369	350	227	.776	1.107	1.369	226	.777
320	1.079-4	-3146.2	7.8322	27.304	1.140	1.105	1.062-4	27.883	169	1.0002	-1.000	1.112	1.367	361	242	.774	1.110	1.367	241	.776
340	1.016-4	-3123.3	7.9017	27.375	1.151	1.110	1.001-4	27.915	178	1.0004	-1.000	1.117	1.364	372	259	.770	1.114	1.365	256	.776
360	9.592-5	-3100.1	7.9678	27.454	1.163	1.115	9.462-5	27.951	188	1.0009	-1.000	1.125	1.360	382	278	.761	1.118	1.363	271	.774
380	9.087-5	-3076.7	8.0310	27.538	1.177	1.120	8.975-5	27.987	197	1.0019	-1.000	1.137	1.355	391	300	.747	1.122	1.360	287	.771
400	8.631-5	-3053.0	8.0918	27.623	1.196	1.126	8.538-5	28.023	206	1.0036	-1.000	1.154	1.349	400	328	.727	1.127	1.357	303	.767
420	8.218-5	-3028.9	8.1508	27.708	1.222	1.131	8.141-5	28.056	215	1.0065	-1.000	1.179	1.341	409	362	.701	1.132	1.355	318	.765
440	7.841-5	-3004.1	8.2084	27.788	1.257	1.138	7.779-5	28.086	224	1.0110	-1.000	1.215	1.331	416	406	.669	1.138	1.352	334	.763
460	7.496-5	-2978.5	8.2653	27.863	1.306	1.144	7.446-5	28.108	232	1.0177	-1.001	1.263	1.319	424	463	.633	1.144	1.349	349	.760
480	7.176-5	-2951.8	8.3222	27.927	1.370	1.151	7.139-5	28.120	240	1.0272	-1.001	1.327	1.305	430	535	.596	1.151	1.346	365	.758
500	6.880-5	-2923.6	8.3797	27.978	1.453	1.158	6.854-5	28.120	249	1.0400	-1.002	1.410	1.290	437	623	.562	1.158	1.343	382	.754
520	6.602-5	-2893.5	8.4386	28.013	1.556	1.166	6.586-5	28.104	257	1.0565	-1.003	1.511	1.275	443	726	.535	1.166	1.340	400	.749
540	6.342-5	-2861.2	8.4996	28.028	1.679	1.175	6.335-5	28.069	265	1.0768	-1.004	1.632	1.260	449	839	.515	1.175	1.337	419	.743
560	6.095-5	-2826.4	8.5629	28.008	1.770	1.184	6.095-5	28.008	273	1.1003	-1.005	1.770	1.247	455	955	.505	1.184	1.335	439	.736
580	5.862-5	-2789.6	8.6275	27.898	1.911	1.194	5.862-5	27.898	280	1.1243	-1.007	1.911	1.235	462	1054	.508	1.194	1.333	459	.728
600	5.640-5	-2750.0	8.6945	27.770	2.045	1.204	5.640-5	27.770	288	1.1470	-1.008	2.045	1.227	469	1129	.521	1.204	1.331	481	.720
620	5.431-5	-2707.9	8.7635	27.628	2.152	1.214	5.431-5	27.628	295	1.1640	-1.009	2.152	1.220	477	1164	.545	1.214	1.330	503	.711
640	5.233-5	-2664.3	8.8327	27.481	2.196	1.224	5.233-5	27.481	302	1.1687	-1.009	2.196	1.218	486	1143	.580	1.224	1.328	526	.703
660	5.049-5	-2620.8	8.8996	27.344	2.134	1.233	5.049-5	27.344	309	1.1535	-1.009	2.134	1.221	495	1058	.623	1.233	1.327	548	.696
680	4.881-5	-2579.8	8.9609	27.233	1.950	1.242	4.881-5	27.233	316	1.1159	-1.007	1.950	1.232	506	928	.664	1.242	1.326	568	.691
700	4.728-5	-2543.2	9.0140	27.160	1.713	1.249	4.728-5	27.160	323	1.0692	-1.004	1.713	1.250	518	804	.688	1.249	1.325	586	.688
720	4.591-5	-2510.9	9.0595	27.121	1.535	1.256	4.591-5	27.121	329	1.0337	-1.002	1.535	1.268	529	729	.693	1.256	1.323	602	.687
740	4.464-5	-2481.2	9.1001	27.104	1.443	1.262	4.464-5	27.104	336	1.0146	-1.001	1.443	1.279	539	701	.691	1.262	1.321	617	.687
760	4.345-5	-2452.8	9.1380	27.097	1.406	1.268	4.345-5	27.097	342	1.0062	-1.000	1.406	1.283	547	698	.690	1.268	1.319	631	.688
780	4.233-5	-2424.8	9.1744	27.094	1.394	1.273	4.233-5	27.094	349	1.0026	-1.000	1.394	1.284	554	705	.689	1.273	1.317	645	.689
800	4.127-5	-2396.9	9.2096	27.093	1.392	1.279	4.127-5	27.093	355	1.0011	-1.000	1.392	1.284	561	717	.689	1.279	1.316	659	.690

TABLE 32.3E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 101.325 KPA (1.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	2.160-3	-3641.1	5.4666	27.092	1.044	1.043	1.843-3	30.240	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	1.963-3	-3619.9	5.5672	27.092	1.070	1.066	1.675-3	30.240	140	1.0000	-1.000	0.983	1.389	290	188	.731	0.983	1.389	188	.731
240	1.799-3	-3598.0	5.6624	27.092	1.130	1.088	1.535-3	30.237	151	1.0000	-1.000	0.986	1.387	303	204	.727	0.986	1.387	204	.727
260	1.658-3	-3573.6	5.7599	27.092	1.365	1.112	1.416-3	30.216	161	1.0000	-1.000	0.990	1.385	315	220	.725	0.990	1.385	220	.725
280	1.528-3	-3497.1	6.0412	27.092	2.248	1.384	1.311-3	30.121	170	1.0000	-1.000	0.997	1.383	327	234	.725	0.997	1.383	234	.725
298	1.404-3	-3444.2	6.2239	27.095	3.836	1.358	1.220-3	29.859	177	1.0000	-1.000	1.012	1.380	338	244	.731	1.012	1.380	244	.731
300	1.390-3	-3436.8	6.2484	27.095	4.100	1.354	1.211-3	29.815	177	1.0000	-1.000	1.014	1.379	340	245	.732	1.014	1.379	245	.732
320	1.208-3	-3309.8	6.6564	27.142	9.681	1.262	1.104-3	28.976	179	1.0000	-1.000	1.056	1.373	355	251	.752	1.056	1.373	251	.752
340	1.016-3	-3123.3	7.2259	27.376	1.148	1.110	1.001-3	27.916	178	1.0001	-1.000	1.115	1.365	372	257	.774	1.114	1.365	256	.776
360	9.593-4	-3100.3	7.2918	27.455	1.157	1.115	9.462-4	27.951	188	1.0003	-1.000	1.120	1.362	382	273	.770	1.118	1.363	271	.774
380	9.088-4	-3077.0	7.3546	27.539	1.166	1.120	8.976-4	27.989	197	1.0006	-1.000	1.127	1.358	392	291	.763	1.122	1.360	287	.771
400	8.633-4	-3053.6	7.4146	27.626	1.176	1.125	8.539-4	28.027	206	1.0011	-1.000	1.136	1.355	401	311	.754	1.127	1.357	303	.768
420	8.221-4	-3030.0	7.4723	27.713	1.187	1.131	8.143-4	28.065	215	1.0021	-1.000	1.147	1.350	410	332	.743	1.132	1.354	318	.766
440	7.847-4	-3006.1	7.5278	27.799	1.202	1.137	7.783-4	28.101	224	1.0035	-1.000	1.162	1.344	418	357	.729	1.137	1.352	333	.764
460	7.504-4	-2981.9	7.5817	27.882	1.221	1.143	7.453-4	28.134	232	1.0057	-1.000	1.182	1.338	427	386	.711	1.143	1.349	348	.763
480	7.189-4	-2957.2	7.6341	27.960	1.245	1.150	7.150-4	28.162	240	1.0089	-1.000	1.208	1.331	434	421	.689	1.150	1.346	363	.762
500	6.898-4	-2932.0	7.6856	28.031	1.277	1.156	6.870-4	28.186	248	1.0134	-1.001	1.240	1.322	442	464	.664	1.156	1.343	378	.760
520	6.629-4	-2906.1	7.7364	28.094	1.317	1.163	6.610-4	28.203	256	1.0194	-1.001	1.281	1.313	449	515	.637	1.163	1.340	394	.758
540	6.377-4	-2879.3	7.7870	28.148	1.366	1.171	6.367-4	28.211	264	1.0273	-1.001	1.332	1.302	455	577	.611	1.170	1.337	410	.754
560	6.142-4	-2851.4	7.8377	28.190	1.427	1.178	6.139-4	28.210	272	1.0373	-1.002	1.394	1.291	462	648	.586	1.178	1.334	427	.751
580	5.921-4	-2822.5	7.8885	28.182	1.467	1.186	5.921-4	28.182	280	1.0495	-1.003	1.467	1.280	468	727	.565	1.186	1.331	444	.747
600	5.713-4	-2792.3	7.9396	28.128	1.551	1.195	5.713-4	28.128	287	1.0639	-1.003	1.551	1.269	474	811	.549	1.195	1.329	462	.743
620	5.516-4	-2760.4	7.9920	28.062	1.647	1.203	5.516-4	28.062	294	1.0804	-1.004	1.647	1.259	481	899	.539	1.203	1.327	480	.738
640	5.328-4	-2726.4	8.0459	27.982	1.752	1.212	5.328-4	27.982	302	1.0987	-1.006	1.752	1.249	487	987	.536	1.212	1.325	500	.732
660	5.150-4	-2690.2	8.1015	27.889	1.865	1.221	5.150-4	27.889	309	1.1180	-1.007	1.865	1.239	494	1068	.539	1.221	1.323	519	.726
680	4.979-4	-2651.8	8.1589	27.783	1.977	1.230	4.979-4	27.783	316	1.1368	-1.008	1.977	1.231	501	1135	.550	1.230	1.321	540	.720
700	4.817-4	-2611.2	8.2177	27.667	2.076	1.239	4.817-4	27.667	323	1.1528	-1.009	2.076	1.225	508	1181	.567	1.239	1.320	560	.713
720	4.662-4	-2569.0	8.2772	27.544	2.143	1.248	4.662-4	27.544	329	1.1620	-1.010	2.143	1.220	515	1192	.592	1.248	1.319	581	.707
740	4.516-4	-2525.9	8.3362	27.422	2.149	1.256	4.516-4	27.422	336	1.1592	-1.009	2.149	1.220	523	1159	.623	1.256	1.318	601	.702
760	4.379-4	-2483.6	8.3926	27.312	2.068	1.264	4.379-4	27.312	342	1.1402	-1.008	2.068	1.224	532	1080	.656	1.264	1.317	621	.697
780	4.253-4	-2443.7	8.4444	27.224	1.908	1.272	4.253-4	27.224	349	1.1063	-1.006	1.908	1.234	542	976	.682	1.272	1.316	639	.694
800	4.138-4	-2407.4	8.4904	27.164	1.724	1.278	4.138-4	27.164	355	1.0683	-1.004	1.724	1.248	553	880	.696	1.278	1.315	655	.692

TABLE 32.4E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 1013.25 KPA (10.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS										GAS PHASE PROPERTIES FROZEN COMPOSITIONS				
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND	PRAN	CP	GAM	COND	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		MICRO POISE			J/G K		M/S	MICRO W/ CM K		J/G K		MICRO W/ CM K	
200	2.154-2	-3641.1	4.9266	27.092	1.043	1.043	1.843-2	30.240	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	1.958-2	-3620.0	5.0271	27.092	1.066	1.066	1.675-2	30.240	140	1.0000	-1.000	0.983	1.389	290	188	.731	0.983	1.389	188	.731
240	1.796-2	-3598.4	5.1209	27.092	1.092	1.088	1.535-2	30.240	151	1.0000	-1.000	0.986	1.387	303	204	.727	0.986	1.387	204	.727
260	1.657-2	-3576.2	5.2099	27.092	1.137	1.112	1.417-2	30.237	161	1.0000	-1.000	0.989	1.385	315	220	.724	0.989	1.385	220	.724
280	1.538-2	-3508.3	5.4591	27.092	1.479	1.394	1.316-2	30.228	171	1.0000	-1.000	0.993	1.383	326	235	.723	0.993	1.383	235	.723
298	1.442-2	-3480.4	5.5559	27.092	1.624	1.393	1.234-2	30.202	180	1.0000	-1.000	0.997	1.381	337	248	.723	0.997	1.381	248	.723
300	1.433-2	-3477.3	5.5660	27.092	1.647	1.393	1.227-2	30.197	181	1.0000	-1.000	0.998	1.381	338	250	.723	0.998	1.381	250	.723
320	1.334-2	-3441.0	5.6832	27.092	2.041	1.388	1.147-2	30.114	189	1.0000	-1.000	1.005	1.379	349	263	.725	1.005	1.379	263	.725
340	1.235-2	-3392.8	5.8289	27.096	2.872	1.374	1.072-2	29.915	197	1.0000	-1.000	1.018	1.376	361	274	.731	1.018	1.376	274	.731
360	1.125-2	-3320.2	6.0360	27.121	4.612	1.335	9.986-3	29.500	202	1.0000	-1.000	1.041	1.371	373	284	.740	1.040	1.372	284	.741
380	9.865-3	-3193.3	6.3781	27.272	8.730	1.239	9.210-3	28.717	204	1.0001	-1.000	1.084	1.364	387	293	.755	1.083	1.365	292	.756
400	8.633-3	-3053.8	6.7386	27.627	1.169	1.125	8.539-3	28.029	206	1.0003	-1.000	1.130	1.356	401	305	.763	1.127	1.357	303	.768
420	8.222-3	-3030.4	6.7958	27.715	1.176	1.131	8.144-3	28.067	215	1.0006	-1.000	1.137	1.353	410	322	.759	1.132	1.354	318	.766
440	7.848-3	-3006.7	6.8507	27.802	1.184	1.137	7.784-3	28.105	224	1.0011	-1.000	1.145	1.349	419	340	.753	1.137	1.352	332	.765
460	7.506-3	-2983.0	6.9035	27.888	1.193	1.143	7.456-3	28.142	232	1.0018	-1.000	1.156	1.345	428	359	.746	1.143	1.349	347	.764
480	7.193-3	-2959.0	6.9546	27.971	1.204	1.149	7.154-3	28.176	240	1.0028	-1.000	1.168	1.340	436	381	.737	1.149	1.346	362	.763
500	6.904-3	-2934.8	7.0040	28.049	1.217	1.156	6.875-3	28.208	248	1.0043	-1.000	1.183	1.335	444	405	.726	1.155	1.342	376	.762
520	6.637-3	-2910.3	7.0520	28.123	1.234	1.162	6.617-3	28.236	256	1.0062	-1.000	1.201	1.330	451	432	.712	1.162	1.339	392	.760
540	6.390-3	-2885.4	7.0989	28.190	1.253	1.169	6.378-3	28.261	264	1.0089	-1.000	1.222	1.324	459	464	.696	1.169	1.336	407	.759
560	6.159-3	-2860.1	7.1449	28.252	1.277	1.176	6.154-3	28.281	272	1.0124	-1.001	1.248	1.317	466	500	.678	1.176	1.333	423	.756
580	5.944-3	-2834.5	7.1900	28.288	1.279	1.184	5.944-3	28.288	280	1.0168	-1.001	1.279	1.310	473	542	.660	1.184	1.330	439	.754
600	5.742-3	-2808.5	7.2339	28.269	1.315	1.191	5.742-3	28.269	287	1.0222	-1.001	1.315	1.303	480	588	.642	1.191	1.328	455	.752
620	5.552-3	-2781.8	7.2777	28.246	1.357	1.199	5.552-3	28.246	294	1.0288	-1.002	1.357	1.295	486	639	.625	1.199	1.325	471	.750
640	5.373-3	-2754.2	7.3215	28.216	1.406	1.207	5.373-3	28.216	301	1.0369	-1.002	1.406	1.287	493	696	.609	1.207	1.323	487	.747
660	5.203-3	-2725.6	7.3656	28.180	1.462	1.215	5.203-3	28.180	309	1.0464	-1.003	1.462	1.279	499	758	.595	1.215	1.321	504	.744
680	5.043-3	-2695.7	7.4102	28.137	1.527	1.223	5.043-3	28.137	316	1.0574	-1.003	1.527	1.271	505	825	.584	1.223	1.319	521	.740
700	4.889-3	-2664.4	7.4555	28.085	1.600	1.231	4.889-3	28.085	323	1.0701	-1.004	1.600	1.262	511	895	.576	1.231	1.317	539	.737
720	4.743-3	-2631.6	7.5017	28.024	1.681	1.239	4.743-3	28.024	329	1.0842	-1.005	1.681	1.254	518	967	.572	1.239	1.315	557	.733
740	4.604-3	-2597.2	7.5489	27.954	1.769	1.247	4.604-3	27.954	336	1.0996	-1.006	1.769	1.246	524	1039	.572	1.247	1.313	575	.728
760	4.470-3	-2560.9	7.5973	27.874	1.861	1.255	4.470-3	27.874	343	1.1156	-1.007	1.861	1.238	530	1106	.576	1.255	1.312	594	.724
780	4.341-3	-2522.7	7.6468	27.784	1.951	1.263	4.341-3	27.784	349	1.1313	-1.008	1.951	1.232	536	1166	.584	1.263	1.310	613	.720
800	4.218-3	-2482.9	7.6973	27.687	2.032	1.271	4.218-3	27.687	356	1.1449	-1.009	2.032	1.227	543	1210	.597	1.271	1.309	632	.715

TABLE 32.5E .- PROPERTIES BASED ON EQUILIBRIUM COMPOSITIONS

FUEL H/C ATOM RATIO = 2.100; F/A = 0.081307; EQUIV. RATIO = 1.250; CHEM. EQUIV. RATIO = 1.2239; P = 5066.25 KPA (50.00 ATM)
WET AIR (W/A= 0.03)

	HETEROGENEOUS PROPERTIES						GAS PHASE PROPERTIES REACTING COMPOSITIONS									GAS PHASE PROPERTIES FROZEN COMPOSITIONS			
T	DENSITY	H	ENTROPY	MW	CP REACT	CP FROZ	DENSITY	MW	VIS MICRO	DLVDLT	DLVDLP	CP	(GAM)S	VS	COND MICRO	PRAN	CP	GAM	COND MICRO	PRAN
K	G/CM3	J/G	J/G K		J/G K	J/G K	G/CM3		POISE			J/G K		M/S	W/ CM K		J/G K		W/ CM K	
200	1.063-1	-3641.1	4.5492	27.092	1.043	1.043	9.213-2	30.240	129	1.0000	-1.000	0.980	1.390	276	172	.735	0.980	1.390	172	.735
220	9.680-2	-3620.0	4.6497	27.092	1.066	1.066	8.376-2	30.240	140	1.0000	-1.000	0.983	1.389	290	188	.731	0.983	1.389	188	.731
240	8.884-2	-3598.4	4.7434	27.092	1.089	1.088	7.678-2	30.240	151	1.0000	-1.000	0.986	1.387	303	204	.727	0.986	1.387	204	.727
260	8.208-2	-3576.4	4.8316	27.092	1.117	1.112	7.087-2	30.239	161	1.0000	-1.000	0.989	1.385	315	220	.724	0.989	1.385	220	.724
280	7.634-2	-3509.3	5.0780	27.092	1.412	1.395	6.580-2	30.237	171	1.0000	-1.000	0.992	1.383	326	235	.722	0.992	1.383	235	.722
298	7.171-2	-3483.5	5.1675	27.092	1.442	1.396	6.179-2	30.232	180	1.0000	-1.000	0.996	1.382	337	249	.722	0.996	1.382	249	.722
300	7.127-2	-3480.8	5.1764	27.092	1.446	1.396	6.140-2	30.231	181	1.0000	-1.000	0.996	1.381	338	250	.722	0.996	1.381	250	.722
320	6.676-2	-3451.2	5.2720	27.092	1.526	1.398	5.753-2	30.215	190	1.0000	-1.000	1.001	1.379	349	264	.723	1.001	1.379	264	.723
340	6.267-2	-3419.2	5.3687	27.092	1.682	1.400	5.408-2	30.175	199	1.0000	-1.000	1.006	1.377	359	277	.725	1.006	1.377	277	.725
360	5.882-2	-3383.1	5.4720	27.093	1.962	1.398	5.093-2	30.092	208	1.0000	-1.000	1.014	1.375	370	290	.727	1.014	1.375	290	.727
380	5.503-2	-3339.5	5.5897	27.098	2.436	1.390	4.800-2	29.936	215	1.0000	-1.000	1.025	1.371	380	302	.731	1.025	1.372	302	.731
400	5.110-2	-3283.5	5.7332	27.120	3.240	1.369	4.519-2	29.665	221	1.0000	-1.000	1.043	1.368	392	313	.736	1.042	1.368	313	.737
420	4.673-2	-3205.7	5.9227	27.203	4.693	1.323	4.241-2	29.229	226	1.0001	-1.000	1.069	1.363	403	325	.743	1.068	1.363	324	.745
440	4.153-2	-3086.0	6.2005	27.496	7.648	1.227	3.957-2	28.570	228	1.0004	-1.000	1.113	1.354	416	337	.753	1.110	1.355	334	.757
460	3.753-2	-2983.2	6.4307	27.890	1.186	1.143	3.728-2	28.144	232	1.0008	-1.000	1.149	1.347	428	353	.756	1.143	1.349	347	.764
480	3.597-2	-2959.4	6.4814	27.974	1.194	1.149	3.577-2	28.180	240	1.0012	-1.000	1.158	1.343	436	370	.751	1.149	1.346	362	.763
500	3.453-2	-2935.5	6.5302	28.054	1.202	1.156	3.438-2	28.214	248	1.0019	-1.000	1.168	1.339	444	389	.745	1.155	1.342	376	.763
520	3.320-2	-2911.4	6.5776	28.130	1.212	1.162	3.310-2	28.245	256	1.0027	-1.000	1.180	1.335	452	410	.738	1.162	1.339	391	.761
540	3.196-2	-2887.0	6.6235	28.202	1.223	1.169	3.190-2	28.274	264	1.0039	-1.000	1.193	1.330	460	433	.729	1.169	1.336	406	.760
560	3.082-2	-2862.4	6.6683	28.269	1.237	1.176	3.079-2	28.300	272	1.0055	-1.000	1.209	1.325	467	458	.718	1.176	1.333	422	.758
580	2.975-2	-2837.6	6.7117	28.316	1.227	1.183	2.975-2	28.316	280	1.0075	-1.000	1.227	1.320	474	485	.707	1.183	1.330	437	.756
600	2.875-2	-2812.9	6.7536	28.308	1.247	1.190	2.875-2	28.308	287	1.0101	-1.001	1.247	1.315	481	515	.695	1.190	1.328	453	.755
620	2.781-2	-2787.7	6.7949	28.297	1.271	1.198	2.781-2	28.297	294	1.0132	-1.001	1.271	1.310	489	549	.682	1.198	1.325	468	.753
640	2.693-2	-2762.0	6.8357	28.284	1.298	1.206	2.693-2	28.284	301	1.0171	-1.001	1.298	1.304	495	585	.668	1.206	1.322	484	.751
660	2.610-2	-2735.8	6.8761	28.267	1.329	1.213	2.610-2	28.267	309	1.0218	-1.001	1.329	1.298	502	626	.655	1.213	1.320	500	.749
680	2.531-2	-2708.8	6.9163	28.246	1.365	1.221	2.531-2	28.246	316	1.0274	-1.002	1.365	1.292	509	670	.643	1.221	1.318	516	.747
700	2.457-2	-2681.1	6.9564	28.221	1.406	1.228	2.457-2	28.221	322	1.0340	-1.002	1.406	1.285	515	719	.631	1.228	1.315	532	.744
720	2.386-2	-2652.6	6.9967	28.191	1.453	1.236	2.386-2	28.191	329	1.0418	-1.003	1.453	1.278	521	771	.620	1.236	1.313	549	.742
740	2.318-2	-2623.0	7.0372	28.155	1.505	1.244	2.318-2	28.155	336	1.0507	-1.003	1.505	1.271	527	827	.612	1.244	1.311	565	.739
760	2.254-2	-2592.3	7.0781	28.114	1.564	1.251	2.254-2	28.114	343	1.0610	-1.004	1.564	1.264	533	886	.605	1.251	1.309	582	.736
780	2.192-2	-2560.4	7.1196	28.065	1.629	1.259	2.192-2	28.065	349	1.0724	-1.005	1.629	1.257	539	948	.601	1.259	1.308	600	.733
800	2.133-2	-2527.1	7.1617	28.009	1.700	1.267	2.133-2	28.009	356	1.0850	-1.005	1.700	1.250	545	1010	.599	1.267	1.306	617	.730

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
NASA TP-1906		

4. Title and Subtitle
THERMODYNAMIC AND TRANSPORT COMBUSTION PROPERTIES OF HYDROCARBONS WITH AIR
I - PROPERTIES IN SI UNITS

5. Report Date
July 1982

6. Performing Organization Code
505-32-72

7. Author(s)
Sanford Gordon

8. Performing Organization Report No.
E-946

10. Work Unit No.

9. Performing Organization Name and Address
National Aeronautics and Space Administration
Lewis Research Center
Cleveland, Ohio 44135

11. Contract or Grant No.

13. Type of Report and Period Covered
Technical Paper

12. Sponsoring Agency Name and Address
National Aeronautics and Space Administration
Washington, D.C. 20546

14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

Thermodynamic and transport combustion properties have been calculated for a wide range of conditions for the reaction of hydrocarbons with air. Three hydrogen-carbon atom ratios (H/C = 1.7, 2.0, 2.1) were selected to represent the range of aircraft fuels. For each of these H/C ratios, combustion properties were calculated for the following conditions:

Equivalence ratio: 0, 0.25, 0.5, 0.75, 1.0, 1.25
Water - dry air mass ratio: 0, 0.03
Pressure, kPa: 1.01325, 10.1325, 101.325, 1013.25, 5066.25 (or in atm: 0.01, 0.1, 1, 10, 50)
Temperature, K: every 10 degrees from 200 to 900 K; every 50 degrees from 900 to 3000 K
Temperature, ^{o}R: every 20 degrees from 360^{o} to 1600^{o} R; every 100 degrees from 1600^{o} to 5400^{o} R

The properties presented are composition, density, molecular weight, enthalpy, entropy, specific heat at constant pressure, volume derivatives, isentropic exponent, velocity of sound, viscosity, thermal conductivity, and Prandtl number. Property tables are based on composites that were calculated by assuming both (1) chemical equilibrium (for both homogeneous and heterogeneous phases) and (2) constant compositions for all temperatures. Properties in SI units are presented in this report for the Kelvin temperature schedules, and the corresponding compositions are presented in part II (TP-1907). Properties in U.S. customary units are presented in part III (TP-1908) for the Rankine temperature schedules, and corresponding compositions are presented in part IV (TP-1909).

17. Key Words (Suggested by Author(s))	18. Distribution Statement
Hydrocarbon combustion; Combustion products; Combustion temperature; Thermodynamic properties; Transport properties; Chemical equilibrium; Heat of combustion	Unclassified - unlimited STAR Category 77

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price*
Unclassified	Unclassified	395	A17

* For sale by the National Technical Information Service, Springfield, Virginia 22161

NASA-Langley, 1982

National Aeronautics and Space Administration

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