DESCRIPTION

PRODUCT COVERED:

EZ touch panels, Models EZ-S6M-F, EZ-S6M-FH, EZ-S6M-R, EZ-S6C-K, EZ-S6C-F, EZ-S6C-FH, EZ-S6C-FS, EZ-S6C-FSH, EZ-S6C-KS, EZ-S6M-FS, EZ-S6M-FSH, EZ-S6M-RS, EZ-S8C-F, EZ-S8C-FH, EZ-T10C-F and EZ-T10C-FH.

Touch panels, Models 100G, followed by UT or UA, followed by 06, 08, or 10, followed by S, M, or T, followed by 1R, 1F, 2R, 2F, 3R, or 3F, followed by 0, 1, 4, 8, 9.

RATINGS:

Electrical -

Input - 24 V dc.

Environmental - Types 1 and 4X, indoor use only.

ENGINEERING CONSIDERATIONS (FOR ENGINEERING USE ONLY):

General - These devices enable the display of graphical data from a PLC by touching the screen. Models EZ-S6M-F and EZ-S6M-R are 6 in. monochrome touch panels. Models EZ-S6C-K and EZ-S6C-F are 6 in. color touch panels. Model EZ-S8C-F is an 8 in. color touch panel. Model EZ-T10C-F is a 10.4 in. color touch panel.

Type 1 and Type 4X models are identical except for the type of plastic used on the bezel, and the use of a gasket material is optional on Type 1 models.

Spacings - Spacings have been evaluated per UL 508, Section 36, Seventeenth Edition.

GE Structured Products

LEXAN® 8040 FILM

[redacted]

DESCRIPTION

LEXAN® 8040 polycarbonate film offers high heat resistance, radiation stability, clarity, thermoformability and autoclave stability to meet sterile medical packaging requirements. Available from .007" to .030" up to 48" wide, LEXAN 8040 film is in compliance with FDA regulations and meets USP-VI criteria.

GENERAL INFORMATION

- Operating Temperature: –40 to 265°F (–40 to 129°C)
- Die cuts easily
- No-blush folding endurance: 250 to 400 folds
- Compatible lid stock—TYVEK[1] or medical grade paper available from approved suppliers

TYPICAL* PROPERTY VALUES

Property	Test Method	Units	Value (Clear and Textures)
PHYSICAL			
Specific Gravity	ASTM D792	–	1.20
Area Factor	Calculation	ft²/lb/mil	160
Refractive Index @ 77°F	ASTM D542A	–	1.586
Light Transmission	ASTM D1003	%	90
Yellowness Index	ASTM D1925	–	<1.0
Water Absorption, Equilibrium, 24 Hrs	ASTM D570	%	0.35
MECHANICAL			
Tensile Strength	ASTM D882	psi	
@ Yield			8,500
Ultimate			9,000
Tensile Modulus	ASTM D882	psi	300,000
Elongation	ASTM D882	%	100-150
Gardner Impact Strength @ 30 mils	Gardner	in-lbs	120
Tear Strength			
Initiation	ASTM D1004	lb/mil	1.4-1.8
Propagation	ASTM D1922	g/mil	30-55
Burst Strength–Mullen @ 1 mil	ASTM D774	psig	40-45
Fold Endurance @ 10 mils	MIT	double folds	200
THERMAL			
Coefficient of Thermal Expansion	ASTM D696	in/in/°F	3.75×10^{-5}
Coefficient of Thermal Conductivity	ASTM C177	Btu/hr/ft²/°F/in	1.35
Specific Heat @ 40°F	ASTM C351	Btu/lb/°F	0.30
Strain Relief @ 275°F	ASTM D1204	%	<0.2
Tensile Heat Distortion @ 50 psi	ASTM D1637	°F	302
Brittle Temperature	ASTM D746	°F	-211
ELECTRICAL			
Dielectric Strength	ASTM D149	V/mil	
@ 72°F in Oil, Short Time, 10 mils			1,700
Dielectric Constant	ASTM D150	–	
@ 60 Hz			2.99
@ 1,000,000 Hz			2.93
Dissipation Factor	ASTM D150	–	
@ 60 Hz			.001
@ 1,000,000 Hz			.011
Volume Resistivity	ASTM D257	ohm-cm	10^{16}
Surface Resistivity		ohm-sq	10^{15}
Arc Resistance, Tungsten Electrodes	ASTM D495	sec	120

*These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local GE Plastics Structured Products representative or the GE Plastics Structured Products Quality Services Department.

•Registered Trademark of GE

[1]Registered Trademark of E.I. DuPont deNemours & Co., Inc.

(continued on reverse)

CERT. OF COMPL.
21 CFR 177.15[illegible]

ALAN NIEMEIER
412-831-7186

Dennis
413-448-4735

Lexan

LEXAN® 8040 FILM

MANUFACTURING SPECIFICATIONS

The manufacturing guidelines presented here outline the quality standards to which GE Plastics produces its films. More stringent standards can be agreed to on a case-by-case basis, depending upon the requirements of a particular application or process. Such changes may result in a change in sales price or conditions.

For more information call: (800) 451-3147 or (413) 448-5400 or visit our Website at www.structuredproducts.ge.com

STERILIZATION PERFORMANCE

Technique	Conditions
Autoclave	265°F Single Cycle
Gamma Radiation	5 Mrads Exposure
E-Beam Radiation	3.3 Mrads at 175 kV
Ethylene Oxide	All Common Concentrations

PROPERTY	UNITS	LIMITS	
Light Transmission	%	88 minimum	
Haze	%	<1	
Gauge Variation	%	.007" ± 10% .010" & .015" ± 5% .020" – .030" ± 3%	
Scratches (Reflected Light Conditions)	Inches	<1/4 Hairline, Buff Type	
Web Edge** Curl	Inches	MASKED	UNMASKED
Machine Direction (MD)		All gauges 0.50	0.25
Transverse Direction (TD)		0.10	0.10

**Films from .015" to .030" in gauge may contain curl due to roll set. This property can be minimized by reverse winding the rolls approximately 48 hours prior to sheeting. Film may be ordered on 10" cores to minimize roll set.

MASKING***

Stick	Free from creases and folds
Cling	Remains on film through sheeting process Easily removed in one continuous sheet

***Masking required on 8040 (7 and 10 mils).

	STANDARD QUALITY
Visual Defects	All Gauges
Defect Size (Inches)	
>.025	4/100 sq.ft.
>.015	4/sq.ft.
>.005	40/sq.ft.

Effective October 1988

GE Structured Products

General Electric Company
One Plastics Avenue, Pittsfield, MA 01201-3697

Bayer Corporation

Bayer
Polymers Division

LUSTRAN® 248

ABS

General-Purpose Grade

PLASTICS

Product Information

Description

Lustran 248 resin is a high-gloss, medium-impact grade of ABS (acrylonitrile butadiene styrene). This general-purpose injection molding grade offers a good balance of physical properties. It also complies with FDA regulation 21 CFR 181.32 for repeated-use food-contact applications in certain colors. The resin is available in natural, black, and custom colors.

Applications

Lustran 248 resin is used in applications requiring rigidity and intermediate abuse resistance. Typical applications include housings for small appliances and toys. As with any product, use of Lustran 248 ABS resin in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

Drying

Drying prior to processing is recommended in a desiccant dehumidifying hopper dryer. An inlet air dew point of -20°F (-29°C) or below is recommended to achieve a moisture content ≤ 0.1%. Typical drying conditions are 2 hours at 180–190°F (82–88°C). Drying for 4 hours at 160–170°F (71–77°C) is also adequate.

Processing

A reciprocating screw injection molding machine is preferred. A general-purpose screw with a 2.5:1 compression ratio is suggested. A minimum L/D ratio of 20:1 will ensure melt homogeneity.

For best part quality, use the lower range of the recommended melt temperature with minimum barrel residence time. To avoid excessive residence time in the barrel, volume and weight of the shot should be balanced against barrel capacity and injection stroke. A shot weight-to-machine capacity ratio of 0.5 to 0.75 is recommended. A mold temperature of 110–150°F (45–65°C) is recommended for development of maximum gloss and strength, with the hotter end of this range preferred.

Typical processing parameters are noted below. Actual processing conditions will depend on machine size, mold design, material residence time, shot size, etc.

Typical Injection Molding Conditions

Barrel Temperatures:	
Rear	455–480°F (235–250°C)
Middle	465–490°F (240–255°C)
Front	475–500°F (245–260°C)
Nozzle	475–500°F (245–260°C)
Melt Temperature	475–510°F (245–265°C)
Mold Temperature	110–150°F (45–65°C)
Injection Pressure	10,000–16,000 psi
Hold Pressure	50–75% of Injection Pressure
Back Pressure	0–25 psi
Screw Speed	Moderate
Injection Speed	High
Cushion	1/4 in max
Clamp	2–4 ton/in²

Additional information on processing may be obtained by contacting a Bayer Corporation technical service representative.

Regrind Information

Where end-use requirements permit, up to 20% Lustran ABS resin regrind may be used with virgin material during injection molding, provided that the material is kept free of contamination and is properly dried (see section on Drying). Any regrind used must be generated from properly molded parts, sprues, and/or runners. All regrind used must be clean, uncontaminated, and thoroughly blended with virgin resin prior to drying and processing. Under no circumstances should degraded, discolored, or contaminated material be used for regrind. Materials of this type should be discarded.

Improperly mixed and/or dried regrind may diminish the desired properties of Lustran ABS resin. It is critical that you test finished parts produced with any amount of regrind to ensure that your end-use performance requirements are fully met. Regulatory or testing organizations (e.g., UL) may have specific requirements limiting the allowable amount of regrind. Because third party regrind generally does not have a traceable heat history, nor offer any assurance that proper temperatures, conditions, and/or materials were used in processing, extreme caution must be exercised in buying and using regrind from third parties.

The use of regrind material should be avoided entirely in those applications where resin properties equivalent to virgin material are required, including but not limited to color quality, impact strength, resin purity, and/or load-bearing performance.

Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling Lustran 248 resin. Before working with this product, you must read and become familiar with the available information on its hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets and product labels. Consult your Bayer Corporation representative or contact Bayer's Product Safety and Regulatory Affairs Department in Pittsburgh, PA.

Typical Properties* for Natural Resin	ASTM Test Method (Other)	Units U.S. Conventional	Units SI Metric	Lustran® 248 ABS Resin U.S.	Lustran® 248 ABS Resin SI
General					
Specific Gravity	D 792			1.06	
Density	D 792	lb/in³	g/cm³	0.038	1.06
Specific Volume	D 792	in³/lb	cm³/g	26.1	0.94
Mold Shrinkage	D 955	in/in	mm/mm	0.004–0.006	
Melt Flow Rate at 230°C/3.8-kg Load	D 1238	g/10 min		5	
Mechanical					
Tensile Stress at Yield	D 638	lb/in²	MPa	6,800	47
Tensile Modulus	D 638	lb/in²	GPa	380,000	2.6
Flexural Stress at Yield	D 790	lb/in²	MPa	10,700	74
Flexural Modulus	D 790	lb/in²	GPa	390,000	2.7
Impact Strength, Notched Izod:	D 256				
0.125-in (3.2-mm) Thickness					
73°F (23°C)		ft·lb/in	J/m	4.2	224
-40°F (-40°C)		ft·lb/in	J/m	0.9	48
Rockwell Hardness	D 785	R Scale		112	
Thermal					
Deflection Temperature Under Load:	D 648				
0.5-in (12.7-mm) Thickness					
Unannealed					
264 psi (1.82 MPa)		°F	°C	187	86
66 psi (0.46 MPa)		°F	°C	200	93
Annealed					
264 psi (1.82 MPa)		°F	°C	204	96
66 psi (0.46 MPa)		°F	°C	212	100
Annealed, Compression Molded					
264 psi (1.82 MPa)		°F	°C	215	102
Coefficient of Linear Thermal Expansion	D 696	in/in/°F	mm/mm/°C	4.5 E-05	8.1 E-05
Relative Temperature Index:	(UL746B)				
0.058-in (1.47-mm) Thickness					
Electrical		°F	°C	176	80
Mechanical with Impact		°F	°C	176	80
Mechanical without Impact		°F	°C	176	80
Vicat Softening Temperature, Rate B	D 1525	°F	°C	225	107
Flammability**					
UL94 Flame Class:	(UL94)				
0.058-in (1.47-mm) Thickness		Rating		HB	
0.120-in (3.05-mm) Thickness		Rating		HB	
0.240-in (6.10-mm) Thickness		Rating		HB	

** These items are provided as general information only. They are approximate values and are not part of the product specifications.*

*** Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.*

Note: The information contained in this bulletin is current as of October 1997. Please contact Bayer Corporation to determine whether this publication has been revised.

Bayer Corporation

Polymers Division • Plastics • 100 Bayer Road • Pittsburgh, PA 15205-9741 • Phone: 1-412-777-2000

Sales Offices

9 Corporate Park Drive, Suite 240, Irvine, CA 92606-5113 • 1-949-833-2251
Raritan Plaza III, Edison, NJ 08837-3605 • 1-732-225-1030
9801 West Higgins Road, Suite 420, Rosemont, IL 60018-4704 • 1-847-692-5560
2401 Walton Boulevard, Auburn Hills, MI 48326-1957 • 1-248-475-7700

2102 (3M) 10/97

Printed on recycled paper

GE Plastics

Selkirk Operation
General Electric Company
Noryl Avenue, Selkirk, NY 12158
518 475-5011

January 22, 2002

Automation Direct
Attn: Tim Roberts
3505 Hutchinson Road
Cumming, GA 30040

Dear Mr. Roberts:

The purpose of this letter is to document the regulatory compliance status of certain LEXAN® resin products. The information outlined below is applicable to all the grades, colors and physical forms of LEXAN® resin products which we recommend and sell for food contact applications and is specifically applicable to LEXAN® 8040-112 resin about which you inquired.

We can advise that the above listed product complies with all requirements of the US Food, Drug and Cosmetic Act, as amended, and the implementing regulations promulgated by the Food and Drug Administration (FDA), covering substances for use as basic components of single and repeated use food contact surfaces.

The base polycarbonate resin used is produced in compliance with the conditions prescribed in Federal Food Additive Regulation 21 CFR 177.1580. A copy of this regulation is attached for your reference. We employ only such adjuvants or minor modifiers as are permitted by this regulation, or meet one or more of the following criteria: (1) are generally recognized as safe (GRAS), 21 CFR Part 182: (2) are used in accordance with prior sanctions or approvals, 21 CFR Part 181; (3) are permitted by Regulation 21 CFR 178.2010 covering antioxidants and stabilizers for polymers and 21 CFR 178.3297; (4) are not considered food additives by current FDA protocol, 21 CFR 170.3.

I trust that this information will adequately satisfy your needs. If I can provide further assistance on this or related matters, please contact me at (518) 475-5241 or the address shown above.

Sincerely,

Huqiu Zhang, Ph.D.
Manager - Global Food Contact Programs

enclosure

WAIS Document Retrieval

[Code of Federal Regulations]
[Title 21, Volume 3, Parts 170 to 199]
[Revised as of April 1, 2000]
From the U.S. Government Printing Office via GPO Access
[CITE: 21CFR177.1580]

[Page 287-288]

TITLE 21--FOOD AND DRUGS

CHAPTER I--FOOD AND DRUG ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES (CONTINUED)

PART 177--INDIRECT FOOD ADDITIVES: POLYMERS--Table of Contents

Subpart B--Substances for Use as Basic Components of Single and Repeated Use Food Contact Surfaces

Sec. 177.1580 Polycarbonate resins.

Polycarbonate resins may be safely used as articles or components of articles intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food, in accordance with the following prescribed conditions:

(a) Polycarbonate resins are polyesters produced by:

(1) The condensation of 4,4'-iso-propylidenediphenol and carbonyl chloride to which may have been added certain optional adjuvant substances required in the production of the resins; or by

(2) The reaction of molten 4,4'-iso-propylidenediphenol with molten diphenyl carbonate in the presence of the disodium salt of 4,4'-isopropylidenediphenol.

(3) The condensation of 4,4'-isopro- pylidenediphenol, carbonyl chloride, and 0.5 percent weight maximum of a2,a6-bis (6-hydroxy-m-tolyl) mesitol to which may have been added certain optional adjuvant substances required in the production of branched polycarbonate resins.

(b) The optional adjuvant substances required in the production of resins produced by the methods described in paragraph (a)(1) and (3) of this section may include substances generally recognized as safe in food, substances used in accordance with a prior sanction or approval, and the following:

List of substances	Limitations
p-tert-Butylphenol	
Chloroform	
p-Cumylphenol (CAS Reg. No. 599-64-4)	For use only as a chain terminator at a level not to exceed 5 percent by weight of the resin.
Ethylene dichloride	
Heptane	
Methylene chloride	
Monochlorobenzene	Not to exceed 500 p.p.m. as residual solvent in finished resin.
Pentaerythritol tetrastearate (CAS Reg. No. 115-83-3).	For use only as a mold release agent, at a level not to exceed 0.5 percent by weight of the finished resin.
Phenol (CAS Reg. No. 108-95-2)	
Pyridine	
Toluene: (CAS Reg. No. 108-88-3)	Not to exceed 800 parts per million as residual solvent in finished resin.
Triethylamine	

[[Page 288]]

(c) Polycarbonate resins shall conform to the specification prescribed in paragraph (c)(1) of this section and shall meet the extractives limitations prescribed in paragraph (c)(2) of this section.

(1) Specification. Polycarbonate resins can be identified by their characteristic infrared spectrum.

(2) Extractives limitations. The polycarbonate resins to be tested shall be ground or cut into small particles that will pass through a U.S. standard sieve No. 6 and that will be held on a U.S. standard sieve No. 10.

(i) Polycarbonate resins, when extracted with distilled water at reflux temperature for 6 hours, shall yield total extractives not to exceed 0.15 percent by weight of the resins.

(ii) Polycarbonate resins, when extracted with 50 percent (by volume) ethyl alcohol in distilled water at reflux temperature for 6 hours, shall yield total extractives not to exceed 0.15 percent by weight of the resins.

(iii) Polycarbonate resins, when extracted with n-heptane at reflux temperature for 6 hours, shall yield total extractives not to exceed 0.15 percent by weight of the resins.

[42 FR 14572, Mar. 15, 1977, as amended at 46 FR 23227, Apr. 24, 1981; 49 FR 4372, Feb. 6, 1984; 50 FR 14096, Apr. 10, 1985; 53 FR 29656, Aug. 8, 1988; 59 FR 43731, Aug. 25, 1994]

Rubatex Corporation

William L. Oberle
Technical Service Manager
906 Adams Street
Bedford, VA 24523

Telephone 1.800.378.4091
540-586.2611. Ext. 4323
fax 540-587-4237

FAX TRANSMITTAL LETTER

October 30, 1996

TO:

FROM: Bill Oberle

SUBJECT: FDA Recognized Sheet Stocks

We occasionally have inquiries pertaining to sheet stocks that are FDA approved.

FDA has not approved any of our materials. We offer the following listed stocks for use under the non-food contact exemption because they are manufactured using ingredients listed in the FDA regulation, 21 CRF, 177.2600. entitled, "Rubber Articles Intended for Repeated Use."

The non-food contact exemption allows for the sale of these materials without FDA approval. For food contact applications, FDA approval is required.

R-8514-S
R-8515-S

Bill Oberle

NUMBER OF PAGES: 1

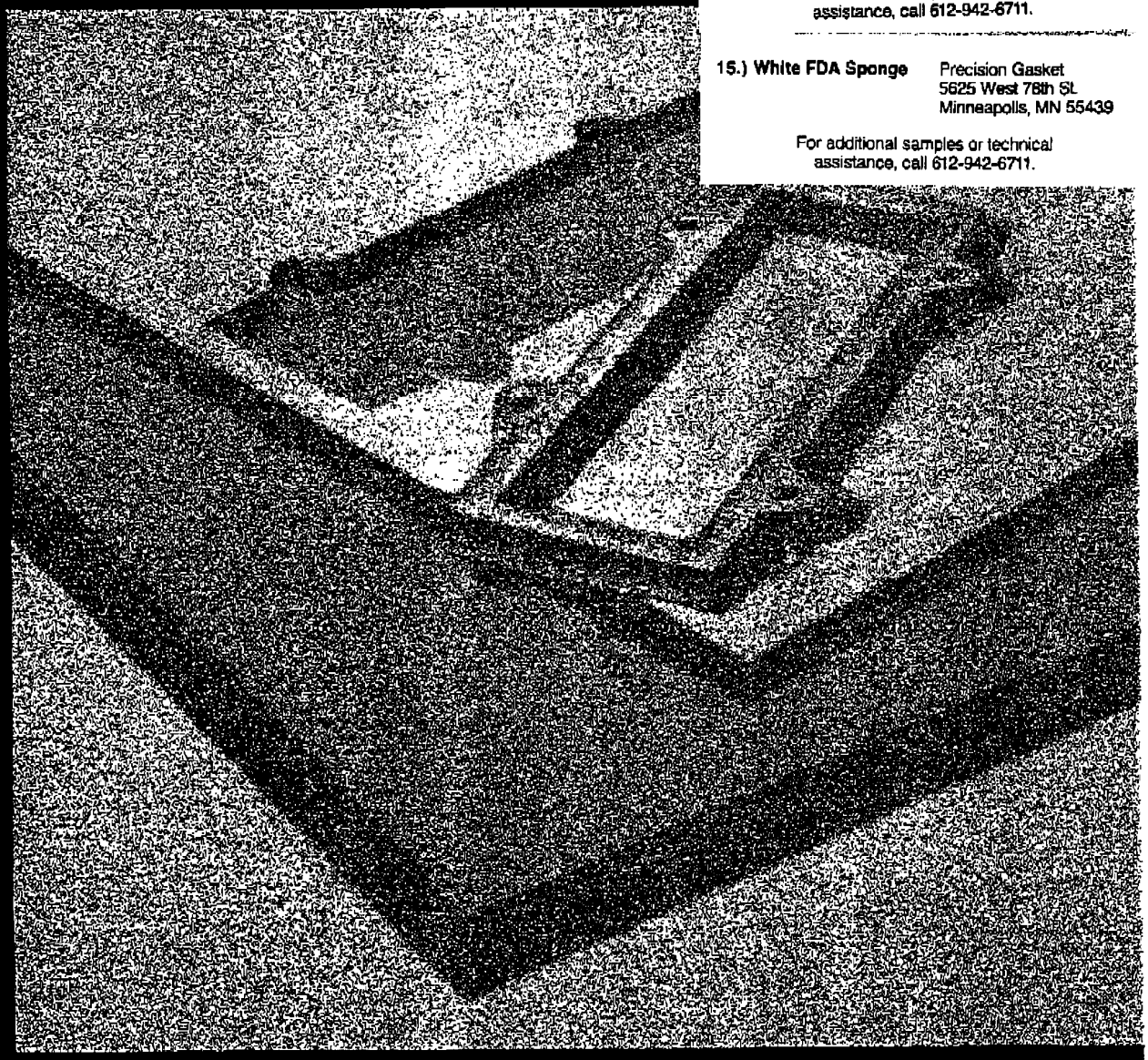
FDA.REC.WPS

12.) Closed Cell Neoprene Blend Sponge Precision Gasket
5625 West 78th St.
Minneapolis, MN 55439

For additional samples or technical assistance, call 612-942-6711.

15.) White FDA Sponge Precision Gasket
5625 West 78th St.
Minneapolis, MN 55439

For additional samples or technical assistance, call 612-942-6711.



Closed Cell Rubber and Plastic Sheets

RUBATEX

S-90
(SUPERSEDES S-88)

POLYMER	ETHYLENE PROPYLENE TERPOLYMER (EPT) (EPDM)			EPT/ POLYETHYLENE/ BUTYL		BUTYL/ EPT	VINYL/NITRILE				
STOCK NUMBER	R-485-T	R-496-T	R-497-T	R-4981-T R-4982-T R-4983-T	R-4991-T R-4992-T R-4993-T	[9]R-4503-T	R-301-V	R-310-V R-326-V	R-313-V	R-341-V	R-338-V
COLOR	Gray	Gray	Gray	Off White Gray Black	Off White Gray Black	Black	Black	Buff Gray	Buff	Black	Buff
SPECIFICATIONS:[1] ASTM D-1056-67	RE-41	RE-42	RE-43-44	RE-41	RE-42	RE-41-42	SBE-41	SBE-41-42	SBE-41	SBE-41	SBE-41-42
ASTM D-1056-68	RE-41	RE-42	RE-43-44	RE-41	RE-42	RE-41-42	SBE-41	SBE-41-42	SBE-41	SBE-41	SBE-41-42
ASTM D-1056-85	2A1	2A2	2A3-4	2A1	2A2	2A1-2	2B1-E2	2B1-2-E2	2B1-E2	2B1-E2	2B1-2-E2
ASTM D-1667-81	---	---	---	---	---	---	VE-41	VE-41-42	VE-41	VE-41	VE-41-42
MIL-C-3133C, MIL-STD-6708	RE-3-F2	RE-7-F2	RE-11-15-F2	RE-3-F2	RE-7-F2	RE-3-7	---	SBE-3-7	SBE-3	SBE-3	SBE-3-7
MIL-P-16280-H	---	---	---	---	---	---	---	---	---	---	---
MIL P-24333-2	---	---	---	---	---	---	---	Type 2	---	---	Type 2
U. L. 94 (See [2])	---	---	---	---	---	---	HF-1	---	---	---	---
COMPRESSION DEFLECTION (p.s.i.) (kg/cm²)	2 - 5 0.14 - 0.35	5 - 9 0.35 - 0.63	9 - 15 0.63 - 1.06	2 - 5 0.14 - 0.35	4 - 7 0.28 - 0.5	3 - 7 0.2 - 0.5	2 - 5 0.14 - 0.35	4 - 8 0.28 - 0.56	2 - 5 0.14 - 0.35	2 - 5 0.14 - 0.35	3.5 - 7 0.25 - 0.5
SHORE 00 DUROMETER (Approx. Average)	30 - 50	40 - 65	65 - 75	20 - 45	35 - 50	20 - 40	20 - 40	40 - 60	20 - 40	20 - 40	40 - 50
DENSITY (p.c.f.) Average (kg/m³)	10 - 15 160 - 240	12 - 20 192 - 320	18 - 28 288 - 448	5.0 Max. 80 Max.	5 - 8 80 - 128	9 - 12 144 - 192	3 - 4.5 48 - 72	5 - 10 80 - 160	5 - 10 80 - 160	5 - 10 80 - 160	6 - 8.5 96 - 136
WATER ABSORPTION BY WEIGHT (Max.)	5% by weight	5% by weight	5% by weight	[4]0.1 lbs./ sq. ft. of cut surface	[4]0.1 lbs./ sq. ft. of cut surface	5% by weight	[4]0.1 lbs./ sq. ft. of cut surface	[4]0.1 lbs./ sq. ft. of cut surface	[4]0.1 lbs./ sq. ft. of cut surface	[4]0.1 lbs./ sq. ft. of cut surface	[4]0.1 lbs./ sq. ft. of cut surface
TEMPERATURE RANGE (°F/°C) Low (Flex without cracking) High Continuous High Intermittent	-85°F/-54°C 150°F/65°C 200°F/93°C	-65°F/-54°C 150°F/65°C 200°F/93°C	-65°F/-54°C 150°F/65°C 200°F/93°C	-70°F/-57°C 150°F/65°C 200°F/93°C	-70°F/-57°C 150°F/65°C 200°F/93°C	-70°F/-57°C 150°F/65°C 200°F/93°C	-10°F/-23°C 130°F/53°C 200°F/93°C	+20°F/-7°C 130°F/53°C 200°F/93°C	0°F/-18°C 130°F/53°C 200°F/93°C	-40°F/-40°C 130°F/53°C 200°F/93°C	+20°F/-7°C 130°F/53°C 200°F/93°C
HEAT AGING (7 Days @ 158°F) (70°C) Linear Shrinkage (Max.)	5%	5%	5%	5%	5%	10%	7%	5%	5%	6%	5%
TENSILE STRENGTH (p.s.i. Min.)	75	90	110	30	40	30	40	90	65	60	80
ELONGATION (% Min.)	200	200	165	150	225	200	150	175	175	200	200
FUNGUS RESISTANCE MIL-STD-810C, Method 508.1	Pass	Pass	Pass	Pass	Pass	Not Tested	---	Pass	Not Tested	Not Tested	Not Tested
FLAMMABILITY — FMVSS #302 burn rate in inches per minute	4	4	4	4	4	4	0	0	4	0	0
minimum thickness complying with FMVSS #302	1/8"	1/8"	1/8"	1/4"	1/4"	1/8"	1/16"	1/16"	1/16"	1/16"	1/16"
K FACTOR (@ 75°F mean temperature) Btu. • in./hr. • sq. ft. • °F	---	---	---	0.28	---	---	---	0.30	0.28	0.30	0.30
RESILIENCE Bashore (% Rebound Average) (1/2" thickness @ 72°F)	40 - 60	40 - 60	40 - 60	44 - 55	45 - 50	38 - 48	20 - 30	12 - 18	28 - 38	25 - 35	9 - 15
THICKNESSES[3]	1/16" - 1 1/2"	1/16" - 1 1/2"	1/16" - 1 1/2"	1/8" - 2"	1/8" - 1 3/4"	1/16" - 2"	1/16" - 1 1/2"	1/16" - 1"	1/16" - 1"	1/16" - 1"	1/16" - 1"
SHEET SIZES	40" x 43"	40" x 43"	40" x 43"	42" x 60"	42" x 60"	40" x 43"	45" x 63"	42" x 56"	42" x 56"	42" x 56"	42" x 56"

[1] Suffix letters not shown with grades may be referred to the Rubatex Laboratory for stock recommendation.
[2] Ratings apply to black stocks only. Refer to Rubatex Sales Department for thicknesses with HF-1 Ratings.
[3] Thicknesses not shown on Price Sheet available on special quotation.
[4] Due to the light weight (low density) of these types of closed cell foam, an alternate method of testing for water absorption is offered to more clearly define their properties.
[5] R-5010-A & R-5210-A U.S. Coast Guard Approved for use in PFD's.
[9] Electrically conductive - antistatic applications.

R-8514-S

VINYL/NITRILE					SBR/ VINYL	ETHYLENE VINYL ACETATE (EVA)			CHLORINATED POLYETHYLENE (CPE)	HYPALON®	STYRENE BUTADIENE RUBBER (SBR)	
R-339-V	R-3950-V	R-3951-V	R-1800-FS	R-1905-H	R-3900-SV R-3901-SV	R-5010-A R-5011-A R-5012-A R-5013-A R-5014-A	R-5110-A	R-5210-A	R-5510-CM R-5511-CM	R-7010-Y R-7018-Y R-7011-Y R-7019-Y R-7012-Y R-7021-Y R-7014-Y R-7022-Y R-7016-Y R-7023-Y R-7017-Y	R-8511-S thru R-8525-S	R-8407-S R-8408-S R-8409-S
Gray	Gray	Buff	Black	Off White	Buff Gray	Natural Gray Black Orange Blue	Natural	Natural	White Gray	White Red Gray Pink Black Purple Blue Sky Blue Jade Green Aqua Yellow	(See Prices)	Natural Black Gray
SBE-42	---	---	SBE-41	SBE-41	RE-41-42	RE-41	RE-41-42	RE-41-42	SCE-41	SCE-41	RE-42-43	RE-45
SBE-42	---	---	SBE-41	SBE-41	RE-41-42	RE-41	RE-41-42	RE-41-42	SCE-41	SCE-41	RE-42-43	RE-45
2B2-E2	---	---	2B1-E2	2B1-E2	2A1-2	2A1	2A1-2	2A1-2	2C1	2C1	2A2-3	2A5
VE-42	VE-42-43	VE-42-43	VE-41	VE-41	VE-41-42	---	---	---	---	---	---	---
SBE-7	---	---	SBE-3	SBE-3	RE-3-7	RE-3-F2	RE-3-7	RE-3-7	---	SCE-3	RE-7-11-F2	RE-20-F2
---	---	---	Form S	---	---	---	---	---	---	---	---	---
Type 2	---	---	---	Type 1	---	---	---	---	---	---	---	---
---	---	---	HF-1,5V	---	---	---	---	---	---	---	---	---
5 - 9 0.35 - 0.63	7 - 11 0.5 - 0.8	7 - 11 0.5 - 0.8	2 - 5 0.14 - 0.35	2 - 5 0.14 - 0.35	3.5 - 6.5 0.25 - 0.46	2 - 6 0.14 - 0.35	3.5 - 6.5 0.26 - 0.46	4 - 7 0.28 - 0.5	3 - 5 0.2 - 0.35	2 - 5 0.14 - 0.35	5 - 13 0.35 - 0.91	17 - 24 1.20 - 1.69
50 - 70	70 ± 10	70 ± 10	25 - 40	25 - 35	35 - 50	20 - 40	30 - 50	37 - 50	—	25 - 45	40 - 65	70 - 90
6 - 8.5 96 - 136	8 - 12 128 - 192	8 - 12 128 - 192	4.5 - 8.5 72 - 136	5.0 Max. 80	5.5 - 8 88 - 128	1.5 - 2.5 24 - 40	2.5 - 3.5 40 - 56	3.5 - 4.5 56 - 72	3 - 5 48 - 80	9 - 13 144 - 208	9 - 15 144 - 240	10 - 20 160 - 320
*0.1 lbs./ sq. ft. of cut surface	*0.1 lbs./ sq. ft. of cut surface	*0.1 lbs./ sq. ft. of cut surface	*0.1 lbs./ sq. ft. of cut surface	*0.1 lbs./ sq. ft. of cut surface	*0.1 lbs./ sq. ft. of cut surface	*0.1 lbs./ sq. ft. of cut surface	*0.1 lbs./ sq. ft. of cut surface	*0.1 lbs./ sq. ft. of cut surface	10% by weight	5% by weight	5% by weight	5% by weight
0°F/-18°C 130°F/53°C 200°F/93°C	-20°F/-29°C 130°F/53°C 200°F/93°C	0°F/-18°C 130°F/53°C 200°F/93°C	0°F/-18°C 150°F/65°C 200°F/93°C	-20°F/-29°C 150°F/65°C 200°F/93°C	-40°F/-40°C 160°F/71°C 200°F/93°C	-100°F/-73°C 130°F/53°C 180°F/82°C	-100°F/-73°C 130°F/53°C 180°F/82°C	-100°F/-73°C 130°F/53°C 180°F/82°C	-65°F/-54°C 130°F/53°C 150°F/65°C	-40°F/-40°C 150°F/65°C 200°F/93°C	-75°F/-60°C 130°F/53°C 180°F/82°C	-70°F/-57°C 150°F/65°C 200°F/93°C
7%	10%	10%	7%	7%	5%	10%	10%	10%	5%	10%	10%	5%
80	90	90	40	30	60	80	50	50	55	80	100	150
100	160	160	100	100	200	200	200	150	270	400	175	100
Not Tested	Not Tested	Not Tested	Pass	Pass	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Not Tested	Fail	Pass
0	0	0	0	0	0	4	4	4	4	4	4	4
1/16"	3/8"	3/8"	1/8"	1/8"	1/2"	3/16"	1/4"	3/16"	1/8"	1/16"	1/2"	1/2"
0.30	---	---	0.28	---	---	0.24	---	---	---	0.35	---	---
11 - 17	9 ± 3	9 ± 3	15 - 25	20 - 30	12 - 18	45 - 60	35 - 50	30 - 45	45	45 - 65	30 - 40	17 - 21
1/16" - 1"	1/16" to 1"	1/16" to 1"	1/8" - 1 1/2"	1/8" - 1"	1/16" - 1"	1/16" - 2 3/4"	1/16" to 2 3/4"	1/16" to 2 3/4"	1/16" to 2"	1/16" - 1 1/2"	1/16" - 1"	1/16" - 1"
42" x 56"	43" x 58"	43" x 58"	48" x 58"	42" x 56"	42" x 56"	44" x 84"	42" x 78"	40" x 78"	40" x 78"	44" x 84"	36" x 44"	42" x 56"

POLYMER	NEOPRENE/EPT/SBR	NEOPRENE (CR)	NITRILE (NBR)	EPICHLOROHYDRIN (ECH)
STOCK NUMBER	R-421-N R-422-N R-423-N R-426-N R-427-N R-428-N R-441-N R-442-N R-443-N R-446-N R-4261-N	G-207-N R-431-N G-231-N R-451-N R-411-N R-415-N R-425-N R-1400-N	R-416-H R-437-H	R-471-E R-472-E R-473-E R-475-E
Electrical Resistivity	Excellent	Fair to Good	Poor	Poor to Fair
Impermeability, Gas	Fair	Fair to Good	Good	Excellent
Weather	Good	Good	Poor	Good
Oxidation	Good	Good	Fair	Good
Ozone	Good	Good	Poor	Excellent
Radiation	Fair	Fair	Fair	Poor
Water	Excellent	Good	Excellent	Good
Acid	Fair to Good	Good	Good	Good
Alkali	Fair to Good	Good	Fair	Good
Gasoline, Kerosene, etc. (Aliphatic Hydrocarbons)	Poor	Good	Excellent	Excellent
Benzene, Toluene, etc. (Aromatic Hydrocarbons)	Poor	Poor	Good	Excellent
Degreaser Solvent (Halogenated Hydrocarbons)	Poor	Poor	Poor	Good
Alcohol	Fair	Fair	Excellent	Good
Synthetic Lubricants (Diester)	Poor	Poor	Fair	Good
Hydraulic Fluids - Silicates	Fair to Poor	Good	Fair	Good
Phosphates	Fair	Poor	Poor	Poor

* The ratings shown are for elastomer type only and do not relate to any referenced compound specifically. The information is very general in scope and cannot be use to prepare specifications or for specification of Rubatex® materials. The user is warned to evaluate the performance of each candidate material in each application.

The general ratings shown are for immersion at room temperature and normal atmospheric pressures. Temperatures and pressures outside of the limits of normal ambient conditions require the user to test each candidate material in the application or in a simulation of the application.

R-8514-S

ETHYLENE PROPYLENE TERPOLYMER (EPT) (EPDM)	PT/ POLYETHYLENE/ UTYL	BUTYL/EPT ELECTRICALLY CONDUCTIVE	VINYL/NITRILE	ER/VINYL	ETHYLENE NYL ETATE	HLORINATED POLYETHYLENE (PE)	HYPALON®	STYRENE BUTADIENE UBBER (SBR)
R-495-T R-496-T R-497-T	R-4981-T R-4982-T R-4983-T R-4991-T R-4992-T R-4993-T	R-4503-T	R-301-V R-310-V R-313-V R-326-V R-338-V R-339-V R-341-V R-3950-V R-3951-V R-1800-FS R-1905-H	R-3900-SV R-3901-SV	R-5010-A R-5011-A R-5012-A R-5013-A R-5014-A R-5110-A R-5210-A	R-5510-CM R-5511-CM	R-7010-Y R-7011-Y R-7012-Y R-7014-Y R-7016-Y R-7017-Y R-7018-Y R-7019-Y R-7021-Y R-7022-Y R-7023-Y	R-8511-S thru R-8525-S R-8407-S R-8408-S R-8409-S
Excellent	Excellent	Poor	Poor	Good	Excellent	Good	Good	Excellent
Good	Good	Good	Good	Fair	Fair	Fair	Fair	Fair
Excellent	Excellent	Excellent	Good	Fair	Good	Excellent	Excellent	Fair
Good	Excellent	Excellent	Fair	Good	Fair	Good	Excellent	Good
Excellent	Excellent	Excellent	Fair	Fair	Good	Good	Excellent	Poor
Good	Poor	Poor	Fair	Fair	Fair	Fair	Fair	Fair to Good
Good to Excellent	Excellent	Good to Excellent	Good	Good	Excellent	Good to Excellent	Good	Excellent
Good to Excellent	Excellent	Good to Excellent	Good	Good	Good	Good	Excellent	Fair to Good
Good to Excellent	Excellent	Good to Excellent	Good	Good	Good	Good	Excellent	Fair to Good
Poor	Poor	Poor	Excellent	Fair	Poor	Fair	Good	Poor
Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Poor
Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor
Poor	Fair	Fair	Excellent	Fair	Good	Fair to Good	Excellent	Fair
Poor to Fair	Poor to Fair	Poor to Fair	Fair	Fair	N/A	Poor	Poor	Poor
Fair to Good	Fair	Fair	Fair	Poor	N/A	Fair to Good	Good	Poor to Fair
Good to Excellent	Good	Good	Fair	Poor	N/A	Poor	Fair	Poor

Revised 1999