Zody II Seating

Environmental Product Declaration

Date of Issue: 09/09/2023
Date of Expiration: 09/09/2028

Product Category Rule

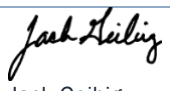
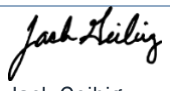
BIFMA PCR for Seating, UNCPC 3811

Functional Unit

1 Zody II seat with an aluminum base, maintained for a period of 10 years.

NSF Certified Environmental Product Declaration www.nsf.org

This EPD was not written to support comparative assertions. EPDs based on different PCRs or different calculation models may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results due to and not limited to the practitioner's assumptions, the source of the data used in the study and the software tool used to conduct the study.

Program Operator	NSF Certification, LLC 789 N. Dixboro, Ann Arbor, MI 48105 sustainability@nsf.org
Manufacturer Name and Address	Haworth, Inc. One Haworth Center Holland, MI 49423 sustainability@haworth.com
Declaration Number	EPD 10870
Declared Product and Functional Unit	1 Zody II seat with an aluminum base, maintained for a 10-year period
Reference PCR and Version Number	BIFMA PCR for Seating: UNCPC 3811, Version 3
Product's intended Application and Use	Commercial Furniture
Product RSL	10 years
Markets of Applicability	North America
Date of Issue	09/09/2023
Period of Validity	5 years from date of issue
EPD Type	Product Specific
Intended Audience	Business-to-Business, Business-to-Consumer
Range of Dataset Variability	N/A
EPD Scope	Cradle to Grave
Year of reported manufacturer primary data	2022
LCA Software and Version Number	Sphera LCA FE (GaBi) 10.6
LCI Database and Version Number	Sphera MLC (GaBi) 2022.2
LCIA Methodology and Version Number	IPCC AR5 + TRACI 2.1
The sub-category PCR review was conducted by:	Thomas Gloria, PhD (chair) Jack Geibig, P.E. Michael Overcash, PhD
This declaration was independently verified in accordance with ISO 14025: 2006. The BIFMA PCR for Seating: UNCPC 3811 V3 serves as the core PCR. **☐ Internal ☒ External**	 Jack Geibig jgeibig@ecoform.com
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	WAP Sustainability Consulting
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	 Jack Geibig jgeibig@ecoform.com

Limitations:
Environmental declarations from different programs (ISO 14025) may not be comparable.
The PCR this EPD was based on was written to determine the potential environmental impacts of a furniture workspace product from cradle-to-grave. It was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.
Additional information on the life cycle assessment can be found by contacting Haworth directly.

Company Description

Haworth strives to be a sustainable corporation. We believe operating a sustainable corporation will allow us to help people do great things for generations to come. We are on a journey—one that promotes longevity and delivers value to the people, communities, and planet that we serve. At our core, we are a family—and we weather challenges together. Haworth is built upon a culture that empowers members and all stakeholders to make positive changes. We strengthen existing partnerships and build new ones, while empowering our members and leveraging our global reach, as we continue our drive toward making positive changes for the people and communities, we serve all over the world.

Product Description

Haworth Zody II is a high-performing chair that blends science-based wellness and comfort with sustainability and international design. It brings science-based well-being together with a thoughtful, more accommodating design for ultimate comfort. With its innovative dual posture feature, Zody II was created for people to use with height-adjustable tables, providing ergonomic support for seated and perching postures. In addition to proven performance and comfort, Zody II is built with sustainability in mind and offers extensive design choices. Zody II is manufactured at Haworth's facility in Bruce, MS – an ISO 14001 certified manufacturing facility. This product can be easily disassembled at the end of its useful life. Components are identified with ISO recycling symbols and material information to assist in the recycling effort, where practical. Haworth will take back Zody II chairs after their useful life and recycle the components.

Results were calculated for a single configuration of the seating. The office chair configuration reviewed (S2TC-20-7-714A1A,MA2_1,TR-LE,TR-LE) consists of hard casters (dual wheel), 4D arms, a forward tilt with back stop seat control, adjustable seat depth, back lumbar, and an aluminum base was determined to have the highest potential impacts of all Zody II model configurations produced in North America, making the results in this EPD conservative and thus representative of all products listed. Product codes within the variation allowance include those beginning with S2TC-20-7.

The composition of the chair reviewed is provided below, with a total product weight of 21.1 kg.

Material	[kg]	[%]	Recycled Content [%]	Resource Type
Steel	8.46	41%	34%	Recycled, Virgin non-renewable
Aluminum	5.78	28%	91%	Recycled, Virgin non-renewable
Nylon	3.10	15%	50%	Virgin non-renewable
Polypropylene	1.23	6%	89%	Virgin non-renewable
Polyurethane	0.95	5%	0%	Virgin non-renewable
Other	0.35	5%	13%	Recycled, Virgin non-renewable

Additional Environmental Information

The product under review is manufactured at a zero waste-to-landfill facility that is ISO 14001- and ISO 9001- certified facility. In addition, this product following certifications:

- GREENGUARD Gold Certified
- BIFMA LEVEL 3 Certified
- Best of NeoCon - Silver Award
- Metropolis Likes NeoCon Award
- Meets BIFMA G1 - 2013 Ergonomics Guideline for Furniture
- Cradle to Cradle Certified® Bronze
- Interior Design's Best of Year Award Honoree

Functional Unit

The functional unit according to the PCR is one unit of seating to seat one individual, maintained for a 10-year period. The products under study have a 10-year service life under ANSI/BIFMA X5.5 and therefore do not require replacements to meet the functional unit.

LCA Stages

Materials Acquisition & Pre-Processing | Includes raw material extraction, pre-processing of materials, and transport to production.

Production | Includes component and final assembly manufacturing operations, both by Haworth and upstream suppliers, as well as intermediate transport and packaging requirements.

Distribution, Storage, and Use | Includes an average distribution to customers. No additional storage is required. There are no impacts associated with use of the product.

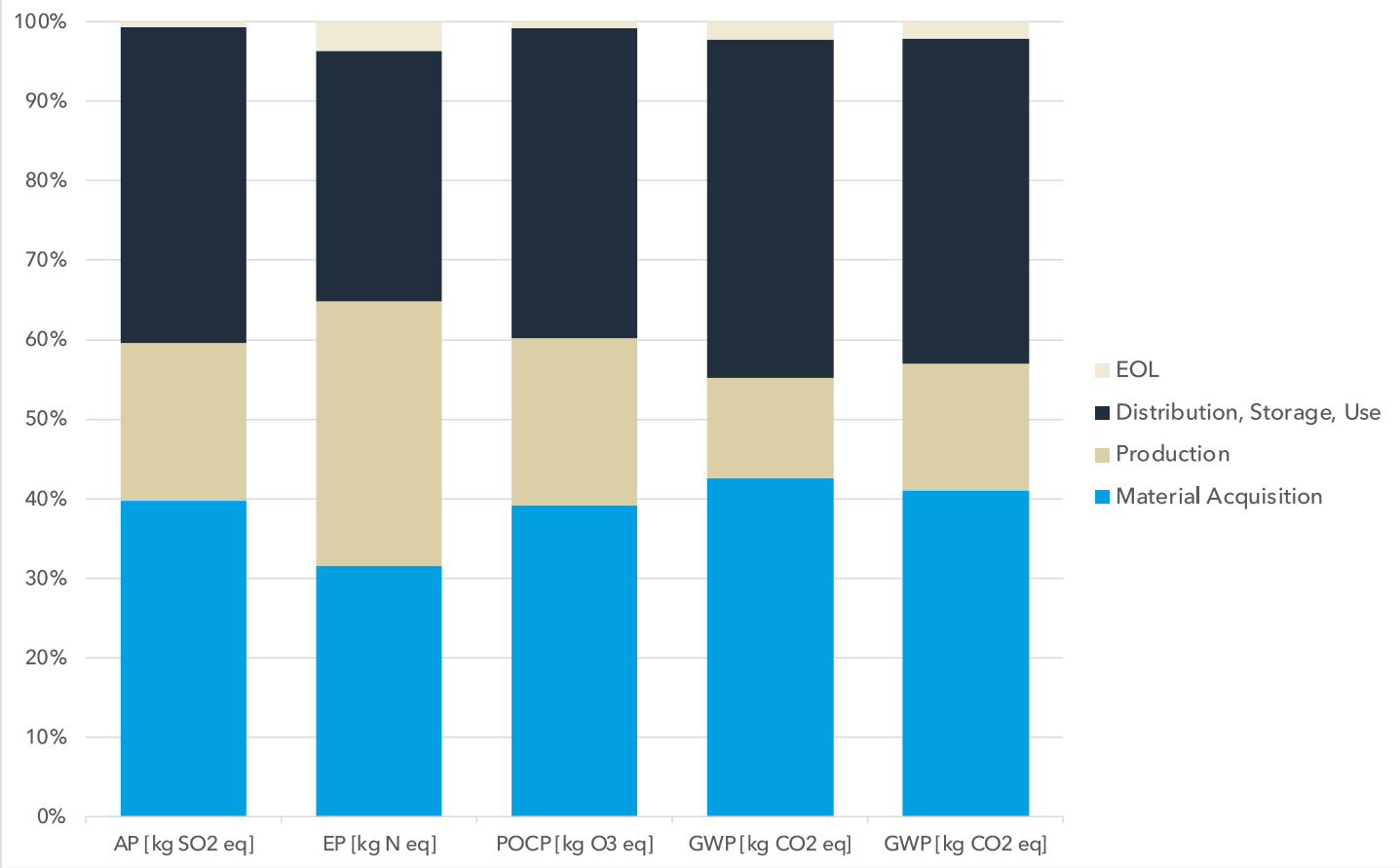
End-of-Life | Includes transport to and disposal of product and packaging based on average US recycling rates.

LCA Results

All results are given per functional unit, which is one unit of seating to seat one individual, maintained for a 10-year period. Results are reported separately by life cycle stage.

Impact Category	Material Acquisition	Production	Distribution, Storage, Use	EOL	Total
IPCC AR5 LCIA Impacts					
Global Warming Potential, incl biogenic [kg CO_2 eq]	5.89E+01	1.75E+01	9.14E+00	2.99E+00	**8.85E+01**
Global Warming Potential, excl biogenic [kg CO_2 eq]	5.89E+01	2.30E+01	8.84E+00	2.99E+00	**9.37E+01**
TRACI 2.1 LCIA Impacts (North America)					
Acidification Potential [kg SO_2 eq]	1.69E-01	8.49E-02	3.27E-02	3.05E-03	**2.89E-01**
Eutrophication Potential [kg N eq]	8.78E-03	9.32E-03	2.55E-03	1.03E-03	**2.17E-02**
Ozone Depletion Potential [kg CFC 11 eq]	1.34E-12	5.44E-10	1.34E-11	2.88E-14	**5.59E-10**
Smog Formation Potential [kg O_3 eq]	2.32E+00	1.25E+00	8.55E-01	4.44E-02	**4.47E+00**
Resource Use Indicators					
Renewable primary resources used as an energy carrier [MJ]	5.92E+01	7.67E+01	4.11E+00	1.00E+00	**1.41E+02**
Renewable primary resources with energy content used as a material [MJ]	0.00E+00	3.85E+01	7.70E-01	0.00E+00	**3.93E+01**
Renewable primary resources, total [MJ]	5.92E+01	1.15E+02	4.88E+00	1.00E+00	**1.80E+02**
Non-renewable primary resources used as an energy carrier [MJ]	7.91E+02	2.95E+02	1.16E+02	9.79E+00	**1.21E+03**
Non-renewable primary resources with energy content used as a material [MJ]	8.73E+01	3.63E+01	2.19E+00	0.00E+00	**1.26E+02**
Non-renewable primary resources, total [MJ]	8.79E+02	3.31E+02	1.18E+02	9.79E+00	**1.34E+03**
Recovered energy [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
Net fresh water usage [kg]	3.31E-01	1.96E-01	1.41E-02	8.81E-03	**5.49E-01**

The chart below presents the relative contribution of each life cycle stage to the TRACI 2.1 and IPCC environmental impact categories.



References

1. ISO 14040: 2006/ Amd 1:2020: Environmental Management – Life cycle assessment – Requirements and Guidelines.
2. ISO 14044: 2006/ Amd 1:2017/ Amd 2:2020: Environmental Management – Life cycle assessment – Requirements and Guidelines – Amendment 1.
3. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.
4. ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services.
5. IPCC, 2013: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.
6. TRACI: The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts. Version 2.1 – User Guide - https://nepis.epa.gov/Adobe/PDF/P100HN53.pdf.
7. US EPA, 2022. *Facts and Figures about Materials, Waste and Recycling*.- https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials
8. NSF International. BIFMA PCR for Seating: UNCPC 3811, Version 3.0 valid through September 30, 2023