

EUKLIDES

MILJØDOKUMENTASJON

VERUS CHAIR MED NETTRYGG

Herman Miller



Kort fortalt

KLIMAAVTRYKK

76,4 kg CO₂e
Nettrygg (suspension)

RESIRKULERT INNHOLD

28 %

KAN RESIRKULERES

92 %

INNELUFT

SCS Indoor Advantage Gold
Gyldig til 31. oktober 2026. Amerikansk ordning for lave emisjoner.

OM TALLENE

Klimaavtrykket er GWP-total for fasene A1-A3 (GWP-total, EN 15804+A2): råvarer, transport til fabrikken og produksjon, oppgitt i kilo CO₂-ekvivalenter. Tallene gjelder den representative stolen i miljødeklarasjonen. Andre utførelser ligger ifølge deklarasjonen innenfor 10 %.

HVA SOM GJELDER

Sammendraget er laget av Euklides for oversikt. Ved prosjektdokumentasjon og anbud er det originaldokumentene i denne filen som gjelder.

Dokumentene

DOKUMENT	UTSTEDT AV	GYLDIG TIL	SIDE
Miljødeklarasjon (EPD) EPD-IES-0027292	EPD International AB (The International EPD System), lisensinnehaver EPD North America	27.05.2031	4
SCS Indoor Advantage Gold SCS-IAQ-04843	SCS Global Services	31.10.2026	16

FINN DOKUMENTENE SELV

Miljødeklarasjon (EPD)
environdec.com/library/epd27292

SCS Indoor Advantage Gold
cdn.scs-certified.com/products/cert_pdfs/HermanMiller_Europe_SC_S-IAQ-04843_s.pdf

OM PRODUSENTEN

Science Based Targets initiative (near-term validation):
Validerte kortsiktige mål, 1,5 °C, FY2030.

Spørsmål om dokumentasjonen: post@euklides.no



Verus® Work Chair Europe



Environmental Product Declaration

Programme: The International EPD System, <http://www.environdec.com/>
Programme Operator: EPD International AB
Licensee: EPD North America
EPD Registration Number: EPD-IES-00027292:001
Version Date: 2026-05-27
Validity Date: 2031-05-27

Product Category Rules

2019:14 c-PCR Furniture and Components of Furniture (c-PCR to PCR 2019:14) 2.0.1

Product Sub-Category: Swivel/Task Chair (Single Occupant)

ISO 14025:2006, ISO 14040, ISO 14044, and EN 15804+A2:2019/AC:2021



Declared Unit: 1 item

Functional Unit: 1 item maintained for 10 years (1x1 item)



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, the specifics of the product modeled, and the software tool used to conduct the study.

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com.

General Information

Program Operator	The International EPD® System (www.environdec.com) EPD International AB, Box 210 60 , SE-100 31 Stockholm Sweden support@environdec.com
EPD Owner (Manufacturer) Name and Address	MillerKnoll 855 East Main Ave, PO Box 302 Zeeland, MI 49464
Declared Product	Verus® Work Chair PIA1ZB327HAAJBK36506BB7O009 Swivel/task chair (single occupant) UN CPC: 38111 – Seats, primarily with metal frames
Declaration Number & Version	EPD-IES-00027292:001
Functional/Declared Unit	Declared Unit: 1 item
Reference PCR and Version Number	2019:14 c-PCR Furniture and Components of Furniture, v.2.0.1 (adoption of NPCR 026 – Part B for Furniture and Components of Furniture v3.0) Construction products (EN 15804+A2), v.2.0.1, 2025-06-05 > EN 15804:2012+A2:2019, v.1, 2019-10-30
Product RSL	10 years
Markets of Applicability	Europe
Intended Audience	Business-to-Business
EPD Scope	Cradle to Gate with Options (A1-A3, A4-A5, C1-C4, D)
Year of Reported Manufacturer Primary Data	FY2024
LCA Software and Version Number	Sphera LCA FE v 10.9.1.17
LCI Database and Version Number	Sphera Managed LCA Content 2025.1
EPD Specificity:	Manufacturer Specific, Facility Specific, Product Specific Supply Chain Specificity: 0.2%
Core PCR review was Conducted by:	Rob Rouwette (chair), Noa Meron (co-chair) A full list of members is available on www.environdec.com . The review panel may be contacted via support@environdec.com .
Independent, third party verification of the declaration and data, according to ISO 14025 (2006) and the Reference PCR(s)	Epsten Group, Inc. 101 Marietta St. NW, Suite 2600, Atlanta, Georgia 30303, USA www.epstengroup.com Accredited by: A2LA
Verification Type	Individual EPD verification without a pre-verified LCA/EPD tool
Life Cycle Assessment Practitioner	WAP Sustainability (wapsustainability.com) info@wapsustainability.com
Procedure for follow-up of data during EPD validity involves third-party verifier	No
Limitations: EPDs within the same product category but registered in different EPD programs, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025. *EPD process certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on http://www.environdec.com/. The EPD owner has the sole ownership, liability, and responsibility for the EPD.	

Product Information

Verus redefines what an affordable work chair can be. Efficiently designed and engineered to assure ergonomic alignment and support, it gives people both short-term and long-term comfort at an equally comfortable price. With a quiet, versatile form that comes in a range of colors and fabrics and the option for a suspension, upholstered, or TriFlex back, the Verus family flexes easily to any aesthetic. Everyone in your office deserves ergonomic support and spinal alignment. With built-in sacral reinforcement and options for adjustable lumbar support, Verus strengthens employee wellness through engineered design that's affordable for all.

The product has Suspension Back, standard-height range, tilt limiter and seat angle, fully adjustable arms, adjustable seat depth and lumbar support, and hard casters.



Information About EPD Owner

Company Information

MillerKnoll is a collective of dynamic brands that comes together to design the world we live in. The MillerKnoll brand portfolio includes Herman Miller, Knoll, Colebrook Bosson Saunders, DatasWeiser, Design Within Reach, Edelman, Geiger, HAY, HOLLY HUNT, Knoll Textiles, Maharam, Muuto, NaughtOne, and Spinneybeck|FilzFelt. MillerKnoll is an unparalleled platform that redefines modern for the 21st century by building a more sustainable, equitable, and beautiful future for all.

Over the last century, Herman Miller has been guided by a commitment to problem-solving designs that inspire the best in people. Along the way, Herman Miller has forged critical relationships with the most visionary designers of the day, from mid-century greats like George Nelson, the Eames Office, and Isamu Noguchi, to research-oriented visionaries like Robert Propst and Bill Stumpf—and with today's groundbreaking studios like Industrial Facility and Studio 7.5. From the birth of ergonomic furniture to manufacturing some of the twentieth century's most iconic pieces, Herman Miller has pioneered original, timeless design that makes an enduring impact, while building a lasting legacy of design, innovation, and social good. Herman Miller is a part of MillerKnoll, a collective of dynamic brands that come together to design the world we live in. For more information, visit hermanmiller.com/about.

Our Mission

Driven by the mission to design and make the world's best products in the most sustainable way, MillerKnoll's sustainability strategy focuses on three key areas:

- **Carbon**
Design the lowest carbon footprint products and commit to achieving net-zero carbon emissions by 2050¹.
- **Materials**
Use sustainable, 100% bio-based or recycled materials by 2050.
- **Circularity**
Design timeless, durable products with zero waste by 2050.

¹ MillerKnoll's net-zero commitment is subject to factors that are partly outside its control, including its value chain's ability to reduce their Scope 1 and 2 emissions (and therefore MillerKnoll's Scope 3 emissions) by 2050. In light of this, MillerKnoll is committed to achieving net-zero by 2050 and will continue to engage with stakeholders across its value chain to support them in their efforts to become net-zero by 2050.

Supplier Support

At MillerKnoll, we are committed to working closely with our suppliers to reduce our collective impact on the environment. We encourage our suppliers to minimize their operations' environmental impacts and require they assist us in decreasing our facilities' environmental effects.

Manufacturing Locations

- Melksham, United Kingdom

Manufacturing Description

MillerKnoll task seating is made up of components sourced from external suppliers, with final assembly taking place either in-house or through select external partners. Materials such as plastic, metal, foam, and fabric are sourced, and many pre-made assemblies, such as casters or gas lifts, come from specialized suppliers. On the assembly line, components are combined in sequence, packaged, and then sent to nearby distribution centers until transport to retailers or customers.

Warranty

See website for warranty details: [Herman Miller International Warranty](http://hermanmiller.com/warranty).

Creating Transparency on Materials

We are transparent about our materials because we believe in informed decisions. Our Ecomedes platform provides environmental product information from across our brands, including details about materials used and third-party certifications. This resource helps customers buy or specify environmentally preferable products by supplying product-level data and automating product performance calculations that can help contribute to sustainability goals. Ecomedes is linked [here](#).

Additional information, including installation and recycling instructions, can be found at <https://www.hermanmiller.com/products/seating/office-chairs/verus-chairs/>

Content Declaration

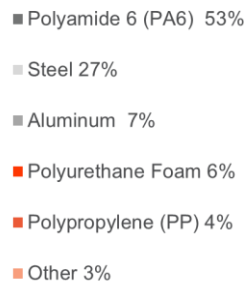
Reference Flow and Product Specifications

This chair is determined to be a representative product based on sales of the variations. The results in this EPD are only representative of this configuration. While the exact configuration purchased may be slightly different, it is expected to have impacts within 10% of this representative configuration. The results presented on the subsequent pages consist of the impacts of the product made at the site(s) declared on the previous page. Where multiple sites are declared, impacts are presented as a weighted average by economic value.

Recyclability

Recyclability rate is the maximum amount of the product that is recyclable, based on availability of recycling facilities and ability of the product to be disassembled.

Per the PCR, the End-of-Life results were calculated using the US EPA's recycling rates within the 2018 Municipal Solid Waste Report for parts that can be disassembled.



Declaration of Material Content

Product Content	Mass (kg)	Mass (%)	Pre-Consumer Recycled	Post-Consumer Recycled	Recyclability (Max)	Biogenic Carbon Content (kg)
Polyamide 6 (PA6)	7.71	53%	15%	4%	53%	0.00
Steel	3.95	27%	23%	21%	27%	0.00
Polypropylene (PP)	1.08	7%	33%	65%	7%	0.00
Thermoplastic Polyurethane (TPU)	0.88	6%	0%	0%	0%	0.00
Polyurethane Foam	0.56	4%	0%	0%	4%	0.00
Other	0.51	3%	0%	0%	2%	0.03
Total	14.7	100%	16%	12%	92%	0.03

Packaging Content

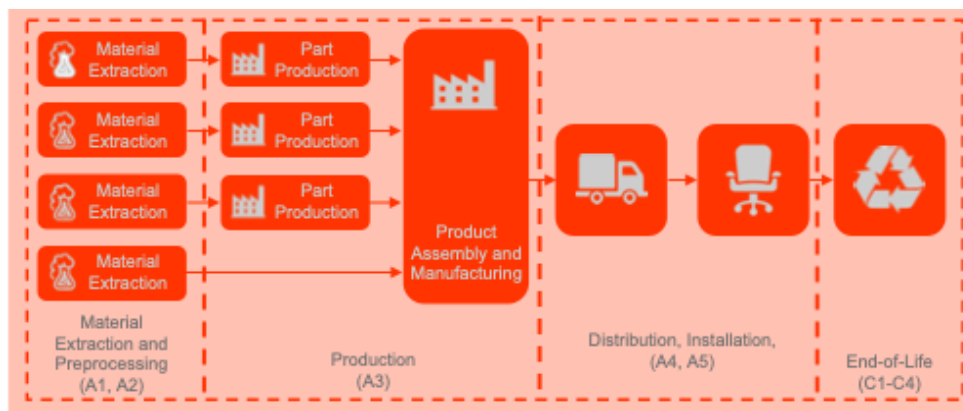
Packaging Content	Mass (kg)	Mass (%)	Biogenic Carbon Content (kg)
Corrugate	3.88	97%	2.14E+00
PE Film	0.08	2%	0.00E+00
PP Banding	0.04	1%	0.00E+00
Total	4.00	100%	2.14

Recycled content cardboard packaging is an average value associated with background LCI datasets. Recycled content values from average or secondary sources are used where supplier data was not available.

Returnable packaging blankets are available for some products. Packaging in the LCA does not include blankets and was calculated to be disposed upon installation per regional disposal rates as required by the PCR.

Hazardous Substances

This product contains no substances prohibited by the regulations applicable at the time of EPD publication, and does not contain substances that require registration under REACH. It respects the restrictions on use of hazardous substances as defined in the REACH directive EC 1907/2006.



Overview of Life Cycle Stages

Life Cycle Assessment Information

Values in the scenario tables below are reported per declared unit unless otherwise stated.

Functional Unit

Parameter	Value
Declared Unit	1 unit
Number of Occupants	1
Reference Service Life Required	Not applicable
Technical Lifespan	10 years

Reference Service Life

Parameter	Value per functional unit
Reference Service Life	10 Years
Explanation	Not applicable
Product Properties, application parameters, or quality assumed	Use as indicated in product brochure and warranty. Properties given in product description on previous pages.
Indoor environment	Typical office and home environment
Use conditions	Typical office and home use

A4: Transport to the Building Site

Parameter	Value per functional unit
Default Transportation Type	Truck
Fuel Type	Diesel
Fuel Consumption	62.1 L/100km
Default Transport Distance	1250 km
Default Capacity Utilization	0.61
Weight for Transport	18.7 kg
Volume for Transport	0.53 m ³
Capacity utilization volume factor	1

A5: Installation in the Building

Parameter	Value per functional unit
Ancillary materials (kg)	0
Net freshwater consumption (m ³)	0
Other resources (kg)	0
Electricity consumption (kWh)	0
Other energy carriers (MJ)	0
Product loss (kg)	0%
Waste materials at the construction site before waste processing, generated by product installation (kg)	4.00 kg
Output materials resulting from on-site waste processing (kg)	4.00 kg
Direct emissions to ambient air, soil and water (kg)	0 kg
VOC content (µg/m ³)	0

C1-C4: End-of-Life²

Parameter	Value per functional unit
Collected as mixed construction waste (kg)	14.7
Weight to Landfill (kg)	0.80
Distance to Landfill (km)	80
Weight to Incineration (kg)	9.60
Distance to Incineration (km)	80
Weight to Recycling (kg)	4.28
Distance to Recycling (km)	80

² For the purposes of this study, it is assumed that while the entire product is sent to a recycling facility, only a percentage of each recyclable material is actually recycled based on the percent determined by the EPA Municipal Solid Waste data (US EPA, 2020) and PEF Annex C recycling values (European Commission, 2021). The disposal route is 100% recycling, but not all the material is recyclable, as accounted for in the end-of-life waste rates.

D: Benefits and Loads Beyond the System Boundary

Parameter	Value per functional unit
Includes all flows leaving the system not allocated as co-products and have passed the end-of-waste state. Includes loads from processing recycled materials. Credits are calculated based on the amount of usable material and energy sent to the next product system. Credits not applied to the portion of flows derived from secondary sources.	

Life Cycle Stages

The results are provided according to the following life cycle modules:

Stage	Module	Module Name	Modules Declared	Geography
Production	A1	Raw Material Supply	X	Global
	A2	Transport to Manufacturing	X	Global
	A3	Manufacturing	X	UK
Construction	A4	Transport to Site	X	UK
	A5	Assembly/Installation	X	UK
Use	B1	Use	ND	ND
	B2	Maintenance	ND	ND
	B3	Repair	ND	ND
	B4	Replacement	ND	ND
	B5	Refurbishment	ND	ND
	B6	Operational Energy Use	ND	ND
	B7	Operational Water Use	ND	ND
End of Life	C1	Deconstruction	X	UK
	C2	Transport	X	UK
	C3	Waste Processing	X	UK
	C4	Disposal	X	UK
Beyond	D	Reuse, Recovery, Recycling Potential	X	UK

Definitions

Abbreviation	openEPD	Description	Unit
EN 15804+A2 (EF 3.1)			
GWP-total	gwp	Global warming potential (100 years), total, including gwp-fossil, gwp-biogenic, and gwp-luluc	kgCO ₂ e
GWP-fossil	gwp-fossil	Global warming potential from fossil sources. Includes excess GWP due to biogenic uptake of CO ₂ and subsequent emission of higher-GWP gases.	kgCO ₂ e
GWP-biogenic	gwp-biogenic	Global warming potential from biogenic uptake and emissions.	kgCO ₂ e
GWP-luluc	gwp-luluc	Global warming potential (100 years), land use and land use change	kgCO ₂ e
ODP	odp	Depletion potential of the stratospheric ozone layer	kgCFC11e
AP	ap	Acidification potential, Accumulated Exceedance	kgSO ₂ e
EP-freshwater	ep-fresh	Eutrophication potential, fraction of nutrients reaching freshwater end compartment	kg P eq
EP-marine	ep-marine	Eutrophication potential, fraction of nutrients reaching marine end compartment	kg N eq
EP-terrestrial	ep-terr	Eutrophication potential, Accumulated Exceedance	Mole of N eq
POCP	pocp	Formation potential of tropospheric ozone	kg NMVOC eq
ADP-minerals*	ADP-mineral	Abiotic depletion potential for non-fossil resources. The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.	kg Sb eq
ADP-fossil*	ADP-fossil	Abiotic depletion potential for fossil resources. The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator. Also known as APDF.	MJ
WDP*	WDP	Water deprivation potential. The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.	m ³ AWARE
Additional mandatory and voluntary impact indicators			
GWP-GHG	xbc_gwp	Global warming potential (100 years, excludes biogenic CO ₂ but no other biogenic emissions). Defined in the EPD International Construction PCR. Accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO ₂ is set to zero.	kgCO ₂ e
PM	pm	Potential incidence of disease due to PM emissions	Disease incidence
IRP	IRP	Potential Human exposure efficiency relative to U235. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.	kBqU235e
ETP-fw*	ETP-fw	Potential Comparative Toxic Unit for ecosystems	CTUe
HTP-c*	HTP-c	Potential Comparative Toxic Unit for humans	CTUh
HTP-nc*	HTP-nc	Potential Comparative Toxic Unit for humans	CTUh
SQP*	SQP	Potential Soil quality index	dimensionless
Resource Use Parameters			
PERE	RPR _e	Use of renewable primary energy excl. renewable primary energy resources used as raw materials	MJ
PERM	RPR _m	Use of renewable primary energy resources used as raw materials	MJ
PERT	RPR _e + RPR _m	Total use of renewable primary energy resources (ISO 21930)	MJ
PENRE	NRPR _e	Use of non-renewable primary energy excl. non-renewable primary energy resources used as raw materials	MJ

Abbreviation	openEPD	Description	Unit
PENRM	NRPRm	Use of non-renewable primary energy resources used as raw materials	MJ
PENRT	NRPRRe +NRPRm	Total use of non-renewable primary energy resources (ISO 21930)	MJ
SM	sm	Use of secondary materials	kg
RSF	rsf	Use of renewable secondary fuels	MJ, net calorific value
NRSF	nrsf	Use of non-renewable secondary fuels	MJ, net calorific value
FW	fw	Net use of fresh water	m ³
Waste Parameters and Output Flows			
HWD	hwd	Disposed-of-hazardous waste	kg
NHWD	nhwd	Disposed-of non-hazardous waste	kg
RWD	hlrw+illrw	Radioactive waste disposed	kg
CRU	cru	Components for reuse	kg
MR	mr	Materials for recycling	kg
MER	mer	Materials for energy recovery	kg
EEE	ee	Exported electrical energy	MJ
EET	et	Exported thermal energy	MJ

* The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

Data Variation

Data Variation	A1-A3
Specific data used	0.2%
Max variation – products	0%
Max variation – sites	N/A (single site)

Variation calculated as (max – min)/average.

Allocation

There are, however, other products produced at the manufacturing facility. To derive a per-unit value for manufacturing inputs such as electricity, thermal energy and water, allocation based on economic value was adopted. As a default, secondary MLC datasets use a physical basis for allocation. Throughout the study recycled materials were accounted for via the cut-off method. Under this method, impacts and benefits associated with the previous life of a raw material from recycled stock are excluded from the system boundary. Additionally, impacts and benefits associated with secondary functions of materials at end of life are also excluded (i.e., production into a third life or energy generation from the incineration plant). The study does include the impacts associated with reprocessing and preparation of recycled materials that are part of the bill of materials of the products under study.

Cut-off rules

All inputs and outputs for which data were available were included. Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact. Cumulative excluded material inputs, energy inputs, and environmental impacts are less than 5% based on system mass, energy, and environmental impacts.

The list of excluded materials and energy inputs include:

- Some raw materials may be excluded if the BOMs do not provide enough granularity, such as colorants or additives. In these cases, the materials are proxied with the other materials in the composition, as total weight of the component that uses said materials is always modeled.
- As the tools used during the installation and/or deconstruction of the product are multi-use tools and can be reused after each installation, the per-declared unit impacts are considered negligible and therefore are not included.
- Some material inputs may have been excluded within the MLC datasets used for this project.

Some material inputs may have been excluded within the MLC datasets used for this project. More details on material and energy input inclusion/exclusion can be found in the MLC LCA Databases Modeling Principles 2025 available here: <https://lcadatabase.sphera.com/dataset-documentation-download/>. All MLC datasets have been critically reviewed and conform to the exclusion requirements of the PCR.

Period Under Review

Data were collected for January through December 2024.

Comparability and Benchmarking

This LCA study supporting this EPD was not completed with the intent that comparative assertions with external objects or public disclosures (i.e., comparative marketing claims) would be made. EPDs are, however, often compared to inform procurement decisions. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Estimates and Assumptions

The upstream raw materials go through some level of processing, e.g., rolling, stamping and bending, etc. but the exact processing details, including energy use and scrap rates are not known. MLC datasets are used to represent these processes, including default loss rates. It is estimated that this

may slightly overestimate or underestimate impacts, but within a small range, +/- 5%, based on typical scrap rates and the minimal amount of energy used compared to upstream raw material production.

The inclusion of overhead energy data was determined appropriate due to the inability to sub-meter and isolate manufacturing energy from overhead energy.

Units

All data and results are presented using SI units.

Data Quality Declaration

Data quality for processes contributing greater than 10% of GWP-GHG to A1-A3, per EN15941.

Process	Source Type (EN 15941)	Source	Reference Year	Data Category	Share of Primary Data
Manufacturing of product	Collected data	MillerKnoll	FY2024	Primary	0.2%
PA6 Part	Database	Sphera	2024	Secondary	0%
Total share of primary data, of GWP-GHG results for A1-A3					0.2%

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Data quality for processes with fair data quality and greater than 30% of a core impact, or poor or very poor data quality, per EN15941.

Data	Source	Reference Year	Temporal Representativeness	Geographical Representativeness	Technological Representativeness	Module	% of GWP-GHG A1-A3	% of other core indicators, A1-A3
ABS Part	Sphera	2024	Very good	Poor	Poor	A1-A3	0%	0%
Aluminium Die Cast Part	Sphera, PE, USLCI/Sphera	2012	Poor	Fair	Fair	A1-A3	3%	21%
Part Transport	Sphera	2024	Very good	Poor	Good	A1-A3	1%	4%
COPE Extrusion Plastic	Sphera, PE	2008	Very poor	Fair	Fair	A1-A3	0%	74%
Corrugated Box Packaging	Sphera, Sphera/AF&PA	2012	Poor	Fair	Good	A1-A3	7%	36%
Part Transport	Sphera	2024	Very good	Poor	Good	A1-A3	1%	4%
PA6 Part	Sphera	2024	Very good	Poor	Poor	A1-A3	47%	48%
POM Part	Sphera	2024	Very good	Poor	Poor	A1-A3	0%	1%
PP Part China	Sphera	2023	Very good	Poor	Poor	A1-A3	3%	4%
PU Foam Part	Sphera, PlasticsEurope	2014	Poor	Fair	Fair	A1-A3	6%	52%
Steel Stamped Part 13% recycled	Sphera	2024	Very good	Poor	Poor	A1-A3	4%	4%
Steel Stamped Waste at HMI, (37% recycled)	Sphera, PE	2014	Poor	Fair	Good	A1-A3	0%	0%
Part Transport	Sphera	2024	Very good	Poor	Good	A1-A3	1%	3%
Wood Waste, Recycled	Sphera, USLCI/Sphera	2008	Very poor	Fair	Good	A1-A3	1%	2%
Zinc Die Cast Part	Sphera	2021	Good	Fair	Fair	A1-A3	0%	91%

Technical Scenarios

Electricity (A1-A3)

This EPD declares the energy source behind the electricity used in the manufacturing process in A3 and its climate impact as kgCO₂e/kWh (using the GWP-GHG indicator).

A3 Electricity Climate Impact

Production Site	Energy Source	GWP-GHG	Unit
Melksham, United Kingdom (purchased renewables)	Renewable sources from supplier: hydro, solar, wind	1.78E-02	kgCO ₂ e/kWh
Onsite generation	Solar energy	3.60E-02	kgCO ₂ e/kWh

Electricity Sources

Generation Type	Quantity in %	GWP-GHG in kgCO ₂ e/kg
Hydroelectric energy	27%	2.12E-02
Solar energy	46%	
Wind power	27%	

Distribution (A4)

Products are transported to customers via truck and ocean freight. Transportation averages were calculated based on a weighted average of sales to customers in Asia, Pacific, Middle East, Africa and South America.

Installation (A5)

This module includes the assembly of the chair and treatment of the installation and packaging waste. To account for losses caused by manufacturer defect or problems in shipment, a 1% loss rate is included in the installation stage. MillerKnoll provides detailed installation instructions online. Actual installation inputs and impacts may vary from what is presented in this study.

End of Life (C1-C4)

For the purposes of this study, it is assumed that while the entire product is sent to a recycling facility, only a percentage of each recyclable material is actually recycled based on the percent determined by the EPA Municipal Solid Waste data (US EPA, 2020) and PEF Annex C recycling values (European Commission, 2021). The disposal route is 100% recycling, but not all the material is recyclable, as accounted for in the end-of-life waste rates.

Beyond System Boundary (D)

Module D includes the environmental benefit from recovered energy during incineration at end-of-life. Thermal energy is assumed to displace natural gas heating, with an energy recovery efficiency of 80%. It includes all flows leaving the system not allocated as co-products and that have passed the end-of-waste state. This module includes loads from processing recycled materials. Credits are calculated based on the amount of usable material and energy sent to the next product system. Credits are not applied to the portion of flows derived from secondary sources.

Environmental Performance

Environmental Impacts were calculated using the LCA for Experts software platform. Impact results according to the Furniture Products c-PCR have been calculated using EN 15804+A2 (as per EF 3.1) characterization factors. Additionally, LCI indicators have been calculated for primary energy and water usage. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. The results of the end-of-life stage (module C) should be considered when using the results of the production stage (modules A1-A3).

Environmental Impacts per 1 unit

Measure	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kgCO ₂ e	7.64E+01	1.77E+00	8.10E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	9.57E-02	2.36E+01	1.35E-02	-1.62E+01
GWP-fossil	kgCO ₂ e	8.31E+01	1.77E+00	2.69E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	9.56E-02	2.36E+01	1.57E-02	-1.62E+01
GWP-biogenic	kgCO ₂ e	-6.70E+00	1.29E-03	7.83E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	7.69E-05	-7.44E-03	-2.28E-03	0.00E+00
GWP-luluc	kgCO ₂ e	6.25E-02	7.25E-05	5.76E-05	ND	ND	ND	ND	ND	ND	ND	0.00E+00	5.02E-05	9.28E-04	4.90E-05	-1.76E-02
ODP	kgCFC11e	1.00E-08	2.84E-13	1.08E-13	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.97E-14	1.46E-12	4.09E-14	-6.44E-08
AP	kgSO ₂ e	2.88E-01	3.50E-03	5.36E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.88E-04	4.05E-03	1.01E-04	-5.03E-02
EP-freshwater	kg P eq	1.61E-03	3.56E-07	6.34E-08	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.74E-07	3.02E-07	2.32E-08	-2.91E-04
EP-marine	kg N eq	6.77E-02	1.56E-03	1.86E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.40E-04	9.18E-04	2.50E-05	-1.13E-02
EP-terrestrial	Mole of N eq	7.48E-01	1.71E-02	2.50E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.53E-03	1.86E-02	2.74E-04	-1.12E-01
POCP	kg NMVOC eq	1.94E-01	3.65E-03	4.68E-04	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.75E-04	2.52E-03	7.73E-05	-3.62E-02
ADP-minerals	kg Sb eq	1.94E-04	6.34E-08	7.62E-09	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.51E-08	7.45E-08	1.16E-09	-1.80E-06
ADP-fossil	MJ	1.40E+03	2.34E+01	8.84E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.23E+00	1.19E+01	2.49E-01	-2.34E+02
WDP	m ³ AWARE	2.26E+01	2.48E-03	1.42E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.29E-03	1.85E+00	1.81E-03	-2.03E+00

Additional Mandatory and Voluntary Impact Category Indicators per 1 unit

Measure	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kgCO ₂ e	8.44E+01	1.77E+00	2.69E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	9.56E-02	2.36E+01	1.58E-02	-1.64E+01
PM	Disease incidence	8.83E-06	2.96E-08	3.69E-09	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.18E-09	4.46E-08	1.18E-09	-6.22E-07
IRP ³	kBqU235e	2.24E+00	3.72E-03	1.64E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.15E-04	2.40E-02	4.31E-04	-2.30E+00
ETP-fw ²	CTUe	6.70E+02	1.10E+01	4.65E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.80E-01	1.14E+01	1.81E-01	-6.33E+01
HTP-c ²	CTUh	3.12E-08	1.75E-10	1.47E-11	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.63E-11	2.99E-10	6.18E-12	-2.88E-08
HTP-nc ²	CTUh	2.74E-07	2.90E-09	4.55E-10	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.47E-10	2.63E-08	4.51E-10	-7.11E-08
SQP ²	Dimension-less	3.88E+02	9.04E-02	1.23E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.83E-01	1.09E+00	4.29E-02	-1.30E+02

Note: The environmental performance results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. The results of the end-of-life stage (module C) should be considered when using the results of the production stage (modules A1-A3). Additional optional indicators per EN 15804+A2 are declared, including: particulate matter emissions; ionizing radiation, human health; eco-toxicity (freshwater); human toxicity, cancer effects; human toxicity, non-cancer effects; land use related impacts/soil quality. For more information on calculating the primary energy characterization factors, see Annex 3 within the PCR. The model adopted is described in option B of the annex.

¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

² Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

³ Disclaimer: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

⁴ A1-A3 results include the "balancing-out reporting" of the biogenic CO₂ of packaging released in module A5, per Annex 2.

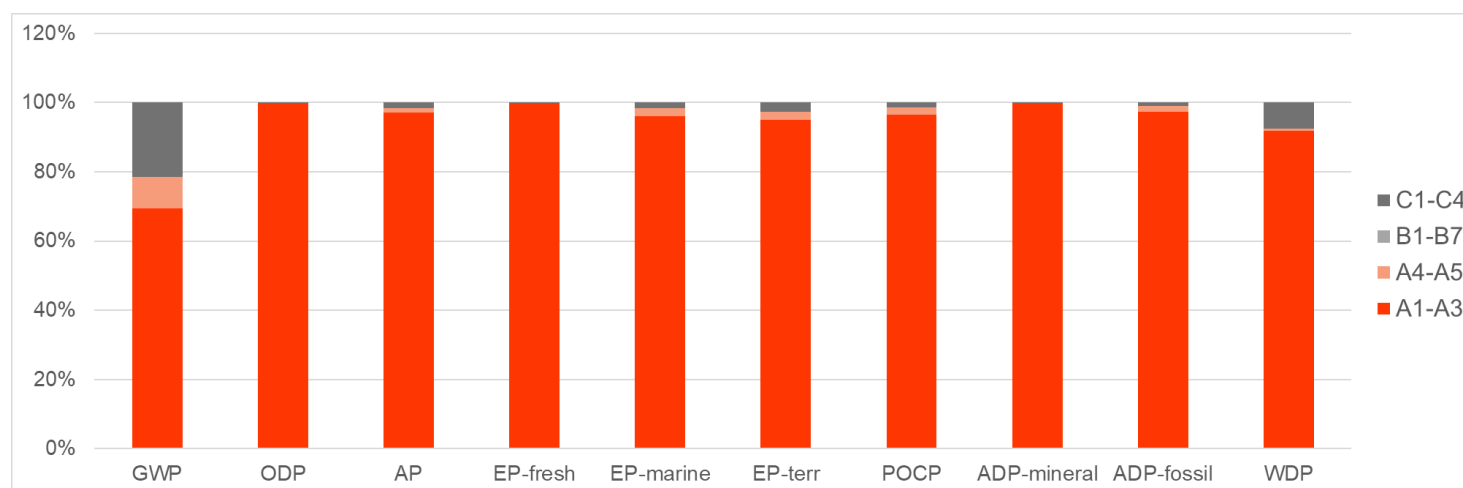
Resource Use Indicators per 1 unit

Measure	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1.97E+02	1.05E+00	7.61E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.99E-02	9.53E-01	3.93E-02	-1.34E+02
PERM	MJ	1.12E+02	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	3.09E+02	1.05E+00	7.61E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.99E-02	9.53E-01	3.93E-02	-1.34E+02
PENRE	MJ	1.12E+03	2.34E+01	8.84E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.23E+00	1.19E+01	2.49E-01	-2.34E+02
PENRM	MJ	2.79E+02	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.40E+03	2.34E+01	8.84E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.23E+00	1.19E+01	2.49E-01	-2.34E+02
SM	kg	5.74E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m³	5.97E-01	1.42E-04	3.32E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	5.35E-05	4.34E-02	5.39E-05	-7.24E-02

Output Flows and Waste Indicators per 1 unit

Measure	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	1.10E-06	1.16E-09	2.08E-10	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.07E-10	2.40E-09	4.91E-11	-1.29E-07
NHWD	kg	1.81E+00	1.73E-03	8.15E-02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.24E-04	2.07E+00	8.04E-01	-5.34E-01
RWD	kg	2.28E-02	3.62E-05	1.95E-05	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.76E-06	2.39E-04	3.30E-06	-1.55E-02
CRU	kg	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	2.96E+00	0.00E+00	2.93E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	4.29E+00	0.00E+00	0.00E+00
MER	kg	3.09E-02	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	3.37E-02	0.00E+00	2.78E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	5.22E+01	0.00E+00	0.00E+00
EET	MJ	1.04E-01	0.00E+00	7.97E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	2.10E+01	0.00E+00	0.00E+00

Life Cycle Impacts



Abbreviations

APMEA	Asia, Pacific, Middle East and Africa	LCI	Life Cycle Inventory
CAS	Chemical Abstracts Service	LCIA	Life Cycle Impact Assessment
CN	China	MLC	Managed Lifecycle Content (Sphera database)
CPC	Central Product Classification	m ³ AWARE	m ³ equivalent of water deprivation in the world, according to the AWARE methodology.
EC	European Community	N/A	Not Applicable
EF	Environmental Footprint	ND	Not Declared
EN	European Norm	PCR	Product Category Rule
EPD	Environmental Product Declaration	REC	Renewable Energy Certificate
EU	Europe	SVHC	Substances of Very High Concern
IPCC	Intergovernmental Panel on Climate Change	US	United States
ISO	International Organization for Standardization	VOC	Volatile Organic Compound
LCA	Life Cycle Assessment		

The list of acronyms used for LCIA and LCI indicators is available under “Environmental Performance”.

References

1. CEN. (2019). CSN EN 15804+A2. Retrieved from European Standards: <https://www.en-standard.eu/csn-en-15804-a2-sustainability-of-construction-works-environmental-product-declarations-core-rules-for-the-product-category-of-construction-products/>
2. EPD International. (2025). Construction Products PCR 2019:14, v2.0.1.
3. EPD International. (2024). c-PCR-021 Furniture and components of furniture (c-PCR to PCR 2019:14) (2.0.0). Adopted from EPD Norge: NPCR 026:2024 Part B for Furniture and components of furniture (references to EN 15804+A2).
4. ISO 14040: 2006/ Amd 1:2020: Environmental Management – Life cycle assessment – Requirements and Guidelines.
5. ISO 14044: 2006/ Amd 1:2017/ Amd 2:2020: Environmental Management – Life cycle assessment – Requirements and Guidelines – Amendment 1.
6. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.
7. IPCC (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.
8. Joint Research Centre of the EU Commission. (2022, July). Environmental Footprint reference packages . Retrieved from European Platform on LCA: <https://eplca.jrc.ec.europa.eu/LCDN/developerEF.html>
9. NSF International (2025). NSF 1103-25 BIFMA PCR for Seating: UNCPC 3811 version 4, valid through January 31, 2030.
10. NSF International National Center for Sustainability Standards (2015). General Program Instructions.
11. US EPA (2012). TRACI: The Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts. Version 2.1 – User Guide. Retrieved from <https://nepis.epa.gov/Adobe/PDF/P100HN53.pdf>.
12. US EPA (2022). Facts and Figures about Materials, Waste and Recycling. Retrieved from <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>
13. US EPA. (2022, December 3). Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2018. Retrieved from <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>

Version History

Version	Date	Differences from previous versions
1.0	2026-05-27	Original version of EPD

SCS Global Services does hereby certify that an independent assessment has been conducted on behalf of:

Herman Miller - Europe

6GN, 1 Portal Rd, Melksham, England, United Kingdom

For the following product(s):

See Addendum

The product(s) meet(s) all of the necessary qualifications to be certified for the following claim(s):

Indoor Advantage™ Gold

Indoor Air Quality Certified to SCS-105 v4.2

Conforms to the ANSI/BIFMA Furniture Emissions Standard (M7.1/X7.1-2011 R2021) and ANSI/BIFMA e3-2024 (Credits 7.6.1, 7.6.2, 7.6.3) for seating parameters.¹ Also, conforms to the CDPH/EHLB Standard Method (CA 01350) V1.2-2017 for seating¹ and school classroom² parameters.

¹ Modeled as Office Seating

² Modeled as Pupil Seating

All certified products measured concentration of Formaldehyde: Less than/equal to 0.01 mg/m³; Total Volatile Organic Compounds (TVOC): Less than/equal to 0.3 mg/m³

Registration # SCS-IAQ-04843

Valid from: August 01, 2025 to October 31, 2026



INDOOR ADVANTAGE GOLD
FURNITURE



Diana Kirsanova Phillips, Chief of Staff to
the CEO / Chief Assurance Officer
SCS Global Services

Certification Addendum
Herman Miller - Europe

Certification: Registration # SCS-IAQ-04843 | Valid from: August 01, 2025 to October 31, 2026

Addendum **Indoor Advantage™ Gold**

Conformance: Indoor Air Quality Certified to SCS-105 v4.2

Conforms to the ANSI/BIFMA Furniture Emissions Standard (M7.1/X7.1-2011 R2021) and ANSI/BIFMA e3-2024 (Credits 7.6.1, 7.6.2, 7.6.3) for seating parameters.¹ Also, conforms to the CDPH/EHLB Standard Method (CA 01350) V1.2-2017 for seating¹ and school classroom² parameters.

¹ Modeled as Office Seating

² Modeled as Pupil Seating

All certified products measured concentration of Formaldehyde: Less than/equal to 0.01 mg/m3; Total Volatile Organic Compounds (TVOC): Less than/equal to 0.3 mg/m3

Products

Seating	
Product Name	Label
Aeron Gaming Chair	Herman Miller - Europe
Aeron®	Herman Miller - Europe
Asari Chair	Herman Miller - Europe
Caper® Chairs	Herman Miller - Europe
Cosm Chair	Herman Miller - Europe
Embody Gaming Chair	Herman Miller - Europe
Embody®	Herman Miller - Europe
Frontier	Herman Miller - Europe
Keyn Chair Group	Herman Miller - Europe
Limerick®	Herman Miller - Europe
Lino	Herman Miller - Europe
Mirra® 2	Herman Miller - Europe
Pronta	Herman Miller - Europe
Sayl Gaming Chair	Herman Miller - Europe

Certification Addendum
Herman Miller - Europe

Certification: Registration # SCS-IAQ-04843 | Valid from: August 01, 2025 to October 31, 2026

Addendum **Indoor Advantage™ Gold**

Conformance: Indoor Air Quality Certified to SCS-105 v4.2

Conforms to the ANSI/BIFMA Furniture Emissions Standard (M7.1/X7.1-2011 R2021) and ANSI/BIFMA e3-2024 (Credits 7.6.1, 7.6.2, 7.6.3) for seating parameters.¹ Also, conforms to the CDPH/EHLB Standard Method (CA 01350) V1.2-2017 for seating¹ and school classroom² parameters.

¹ Modeled as Office Seating

² Modeled as Pupil Seating

All certified products measured concentration of Formaldehyde: Less than/equal to 0.01 mg/m3; Total Volatile Organic Compounds (TVOC): Less than/equal to 0.3 mg/m3

Seating	
Product Name	Label
SAYL®	Herman Miller - Europe
Setu®	Herman Miller - Europe
Verus	Herman Miller - Europe
Zeph™ Seating	Herman Miller - Europe