**ENVIRONMENTAL** PRODUCT DECLARATION

# OLLO™

LIGHT TASK CHAIR

Shown above: Ollo™ Light Task Chair with fixed arm option, grey cylinder and hard wheel casters. Manufactured in East Greenville, PA.

Knoll

For more than a century, Knoll has acted on a commitment to sustainability in the design and manufacture of products for the workplace. This commitment has allowed us to differentiate our approach, processes, and products in the marketplace in several key areas.

Knoll has chosen to complete Environmental Product Declarations for all products to show the environmental impact of Knoll furniture. This EPD will help Knoll and our customers achieve their sustainability goals.

For details about Ollo™ and its design options, visit www.knoll.com.

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

**Disclaimer:** 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.

# ENVIRONMENTAL PRODUCT DECLARATION

Knoll

**Ollo®**
Light Task Chair

**According to ISO 14025**

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

| | |
|---|---|
| PROGRAM OPERATOR | UL Environment |
| DECLARATION HOLDER | Knoll |
| DECLARATION NUMBER | 4788223868.107.1 |
| DECLARED PRODUCT | Ollo™ Light Task Chair |
| REFERENCE PCR | NSF BIFMA PCR for Setting: UNCPC 3811-Version 3 |
| DATE OF ISSUE | November 30, 2018 |
| PERIOD OF VALIDITY | 5 Years |
| CONTENTS OF THE DECLARATION | Product definition and information about building physics<br>Information about basic material and the material's origin<br>Description of the product's manufacture<br>Indication of product processing<br>Information about the in-use conditions<br>Life cycle assessment results<br>Testing results and verifications |

| | |
|---|---|
| The PCR review was conducted by: | PCR Review Panel |
| | NSF International |
| | ncss@nsf.org |
| This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories<br>☐ INTERNAL ☒ EXTERNAL | Grant R. Martin |
| | Grant R. Martin, UL Environment |
| This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by: | Thomas P. Gloria |
| | Thomas P. Gloria, Industrial Ecology Consultants |

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# Product Definition

## Reference Product Description

The office is a place of constant, unpredictable motion, and Ollo provides easy, effortless support. Ollo is designed to stay on pace with the spontaneous style of today's work—pivoting between people, locations and tasks without breaking stride. Communal by design, Ollo is a straightforward chair with streamlined performance that everyone can get comfortable in.

**Table 1: Reference product attributes**

| Attribute | Value |
|---|---|
| Product category | Seating |
| Occupants supported by reference product | 1 |
| Product dimensions | W x H x D: 59.7 cm x 80.65 cm x 58.42 cm (23.5" x 31.75" x 23") |
| Product mass | 11.3 kg (25 lbs.) |
| Post-consumer recycled content | 26.9% |
| Additional features of reference product | 2 Back Options (Armless and Fixed Arm), 1 Seat Option, 2 Cylinder Options (Low and High), 3 Base Options (1 Plastic, 2 Aluminum), 2 Caster Options (Hard and Soft) and 1 Glide Option |

## Functional Unit

The functional unit is one unit of seating to seat one individual, maintained for a period of 10 years. Since Ollo™ has an expected service life of over 12 years, one product is needed to fulfill the functional unit. The analysis was conducted for an Ollo light task chair with specifications as described in Table 1.

## Materials Composition

The material composition of the declared Ollo light task chair is given in Table 2.

**Table 2: Product materials composition**

| Material | % by mass* | kg, per chair | lbs., per chair |
|---|---|---|---|
| ABS | 0.448 | 0.0621 | 0.137 |
| Aluminum | 30.3 | 4.21 | 9.28 |
| Crastin (polybutadiene) | 0.0653 | 0.00907 | 0.02 |
| Fabric | 2.7 | 0.374 | 0.825 |
| Nylon 6 (Hytrel) | 13.8 | 1.91 | 4.21 |
| Nylon 6.6 30% glass filled | 34 | 4.72 | 10.4 |
| PP 30% glass filled | 4.41 | 0.612 | 1.35 |
| PU flexible foam | 4.9 | 0.68 | 1.5 |
| Steel | 9.37 | 1.3 | 2.87 |

* Total % may not equal 100% due to rounding errors.

## Life Cycle Stages

The life cycle stages are summarized in the flow diagram shown in the figure below. A cradle-to-grave analysis was conducted for this EPD.


**Figure 1: Cradle-to-grave life cycle stages**

- Materials acquisition and pre-processing starts when the material is extracted from nature and ends when the material in component form reaches the gate of the production facility or service delivery operation. As such, it includes transportation between upstream suppliers and Knoll's production facility.
- The production stage is a gate-to-gate stage that starts with the product components entering the production facility and ends with the final product, packaged for shipment, leaving the facility. This stage includes manufacturing processes that take place at Knoll, along with the production of packaging materials.
- Product distribution and storage are included in the next stage, along with product use and maintenance. This stage can include multiple legs of distribution and storage. The use stage begins when the consumer takes posession of the product, and includes assembly, installation, repair, and maintenace as appropriate.
- The end-of-life stage starts when the product is ready for disposal and ends when the product is landfilled, returned to nature, or transformed to be recycled or reused. This stage includes transportation of the used product to treatment or recycling facilities and emissions associated with disposal.

## Life Cycle Assessment Results

### Life Cycle Inventory Data

Life cycle inventory results per functional unit (i.e., 1 chair) are shown in Table 3.

**Table 3: Life cycle inventory data per functional unit**

| Inventory metric | Units | Total |
|---|---|---|
| Net fresh water usage* | kg | 701 |
| **Primary energy demand, total** | **MJ** | **1,975** |
| Primary energy demand, renewable | MJ | 248 |
| Primary energy demand, non-renewable | MJ | 1,727 |

* Specified, per the PCR: Water usage from electricity generation is included.

## Impact Assessment Categories

Impact assessment results in Table 4 are calculated using the TRACI 2.1 methodology (Bare, 2012).

**Table 4: Life cycle impact assessment categories**

| Impact category | Units | Materials acquisition | Production | Distribution & use | End-of-life | Total |
|---|---|---|---|---|---|---|
| Global warming potential | kg $CO_2$ eq. | 92.8 | 15 | 1.77 | 0.793 | 110 |
| Acidification potential | kg $SO_2$ eq. | 0.296 | 0.0353 | 0.00863 | 0.0028 | 0.343 |
| Photochemical ozone creation potential | kg $O_3$ eq. | 3.98 | 0.428 | 0.195 | 0.0527 | 4.66 |
| Eutrophication potential | kg N eq. | 0.0214 | 0.00319 | 0.000716 | 0.000879 | 0.0262 |
| Ozone depletion | kg CFC-11 eq. | 3.46E-008 | 6.26E-009 | 6.02E-014 | 1.79E-013 | 4.09E-008 |

## Additional Environmental Information


Knoll takes human health and toxicity concerns very seriously. Declare is the “nutrition label” for furniture. Material transparency is important to allow consumers to make an educated decision about the purchases they make. Knoll has taken a strong initiative to declare the material ingredients in its furniture. Material transparency is key, as it enables Knoll look for less hazarduous alternative materials at the products’ simplest components.


Using BIFMA Level certification, Knoll looks at material ingredients, the facility the product is produced in, and the organization as a whole. By doing this, Knoll has been able to achieve Level 3 for most its office furniture product offerings.


Promoting clean materials allows Knoll furniture to be certified to UL Environment GREENGUARD and GREENGUARD Gold. This certification measures the emissions of off gassing on specific products in an open plan and a private plan setting. All Knoll Office seating furniture is GREENGUARD Gold certified.


Furthering certification efforts, Knoll is also ISO 14001 and ISO 9001 certified. Having an environmental and quality management system allows Knoll to create goals and surpass expectations. Knoll’s environmental goals focus primarily on air, water, and waste. Knoll has been able to reduce waste to landfill at three of its four manufacturing facilities to become landfill free, with the fourth being over 90% landfill free. Knoll has also made contributions to greenhouse gas emissions reduction through indivuidual site efforts and modifications.


At the end of life, Knoll believes in helping its customers avoid landfill when decommissioning furniture or surplus assets from a space. Working with ANEW, Knoll is dedicated to extending the life cycle of surplus furniture by donating, relocating, or sourcing a waste-to-energy facility.

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## References


Bare, J. (2012). *Tool for the Reduction and Assessment of Chemical and other Environmental Impacts - TRACI v2.1 - User's Manual.* Washington, DC: U.S. EPA.

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NSF International. (2014). *BIFMA PCR for Seating: UNCPC 3811 - Version 3.*

thinkstep. (2018). *Seating Products - Background LCA Report in Support of Environmental Product Declarations (EPD)*.


## Contact Information

### Study Commissioner


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