# Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## se:do pro 2

from

## Sedus Stoll AG



| | |
|---|---|
| Programme: | The International EPD System, www.environdec.com |
| Programme operator: | EPD International AB |
| Type of EPD: | EPD of a single product from a manufacturer |
| EPD registration number: | EPD-IES-0034652:001 |
| Version date: | 2026-10-14 |
| Validity date: | 2031-10-13 |

*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

| Programme Information | |
|---|---|
| **Programme:** | The International EPD® System |
| **Address:** | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br>Sweden |
| **Website:** | www.environdec.com |
| **E-mail:** | support@environdec.com |

| Product Category Rules (PCR) |
|---|
| CEN standard EN 15804 serves as the Core Product Category Rules (PCR) |
| Product Category Rules (PCR): PCR 2019:14: Construction products (EN 15804+A2) (version 2.0.1) |
| PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com/TC for a list of members.<br>Chair of the PCR review: Rob Rouwette (chair), Noa Meron (co-chair). *The review panel may be contacted via support@environdec.com.* |
| c-PCR: 2019:14-c-PCR-021 Furniture and components of furniture (c-PCR to PCR 2019:14) (adopted from EPD Norway) (2.0.1) |

| Third-party Verification |
|---|
| Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:<br><br>☒ **Individual EPD verification without a pre-verified LCA/EPD tool**<br>Third-party verifier: Vijay Thakur, Eco-Assure Verification & Advisory<br>Approved by: International EPD System |
| Procedure for follow-up of data during EPD validity involves third party verifier:<br><br>☐ Yes ☒ No |

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison.
For further information about comparability, see EN 15804 and ISO 14025.

# INFORMATION ABOUT EPD OWNER

**Owner of the EPD**: Sedus Stoll AG
**Address**: Christof-Stoll-Straße 1, D-79804 Dogern
**Contact**: Niklas Flum, *Email:* NiklasFlum@sedus.com / Simon Roquette *Email:* SimonRoquette@sedus.com
**Address and contact information of the LCA practitioner commissioned by the EPD owner**:
Lina Kindermann
Organisation: Greensysco
Address: Kriemhildenstraße 22, 80639 München
Email: info@greensysco.de
**Description of the organisation**: Founded in 1871, Sedus Stoll AG is now one of the leading European manufacturers of office furniture. The product range includes seating furniture, such as swivel and visitor chairs, as well as conference and office furniture – all "Made in Germany". In its 150-year company history, Sedus has been continuously setting new standards, in terms of ergonomics, manufacturing processes and sustainability. The brand is synonymous with innovation and technology, quality and aesthetics and it constantly enriches the office world with contemporary concepts and high-quality office furniture.
**Product-related or management system-related certifications**: Sedus is certified after ISO 9001, ISO 14001, ISO 45001, ISO 50001 and SA8000. The product has the following certifications: FEMB, GS, Greenguard, Quality Office, AGR, TÜV Toxproof.

# PRODUCT INFORMATION

**Product name**: se:do pro 2
**UN CPC code**: 3811 (seats)
**Product description**: se:do pro 2 is an ergonomic swivel chair. Thanks to its individually adjustable "Similar" mechanism and height adjustable backrest, se:do pro 2 adapts perfectly to individual needs - whether in the office or in the home office. The product is designed to be used for 8 hours a day, 5 days a week, for 15 years. The model in this EPD features an aluminium base.

**Production process**: The manufacturing process located in Drogern (Germany) is dedicated to the final assembly of office chairs using components sourced globally from external suppliers. The only processing of materials happening at this facility, are the finishing of individual metal parts (galvanizing through electroplating and powder coating), finishing of fabrics and wooden parts if occurring in the product. No further treatment of plastic parts occurs in the in-house production. On the assembly line, workers assemble these parts in a specific sequence using mechanical fasteners. Once assembly is complete, the chairs are packaged and prepared for distribution.

**Name and location of production site:**
SEDUS Stoll Manufacturing plant,
Christof-Stoll-Straße 1, D-79804 Dogern

Visual representation of the product:



# CONTENT DECLARATION

**The mass of one unit of a product**: 17.32 kg

| Product content | Mass, kg | Pre-consumer recycled material, mass-% of product | Post-consumer recycled material, mass-% of product | Biogenic material, mass-% of product | Biogenic material, kg C/product or declared unit |
|---|---|---|---|---|---|
| Steel | 3.724 | 5.74 | - | - | - |
| Aluminium | 3.760 | 6.77 | 6.77 | - | - |
| ABS | 0.097 | - | - | - | - |
| PA6 | 0.104 | - | - | - | - |
| PA6, glass fibre filled | 4.405 | 2.82 | 1.41 | - | - |
| POM | 0.033 | - | - | - | - |
| PP | 0.052 | - | - | - | - |
| PP, glass fibre filled | 1.569 | - | - | - | - |
| PUR | 1.546 | - | - | - | - |
| Other plastic composite | 1.661 | - | - | - | - |
| Polyester fibre | 0.284 | - | - | - | - |
| Lubricating oil | 0.004 | - | - | - | - |
| Paper | 0.043 | - | - | 0.1 | 0.018 |
| Paint | 0.041 | - | - | - | - |
| TOTAL | 17.321 | 15.33 | 8.18 | 0.1 | 0.018 |

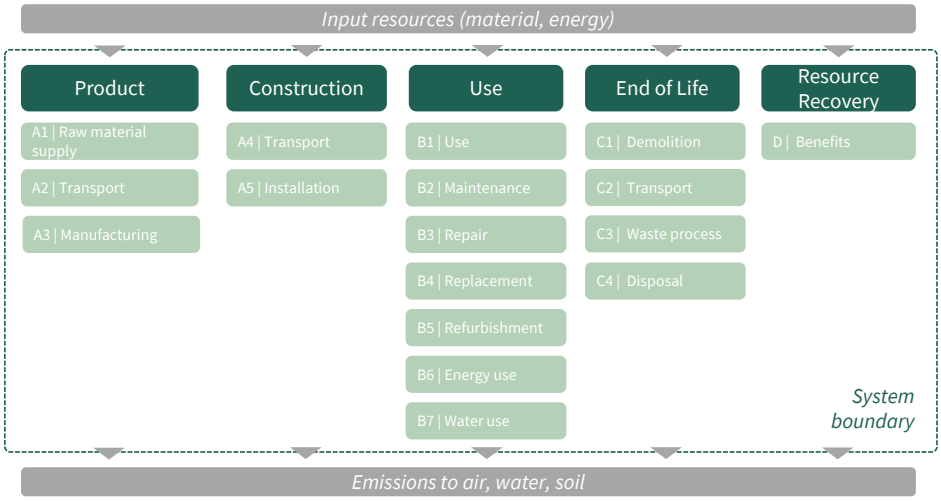
| Packaging materials | Mass, kg | Mass-% (versus the product) | Biogenic material, kg C/product or declared unit |
|---|---|---|---|
| PE foil | 0.3 | 2 | - |
| Cardboard | 3.6 | 21 | 1.8 |
| TOTAL | 3.9 | 23 | 1.8 |

**Information on the environmental and hazardous/toxic properties of a substances contained in the product**:
The product does not contain substances is in the candidate list of Substances of Very High Concern (SVHCs) which exceeds the limits for registration with the European Chemicals Agency (i.e., if the substance constitutes more than 0.1% of the weight of the product or any component of the product). The absence of harmful substances is tested and confirmed by the labels TÜV Schadstoffgeprüft and Green Guard.

# LCA INFORMATION

**Functional unit:** 1 piece of indoor office chair used for 15 years
Weight conversion: 17.321 kg product/FU
**Reference service life:** The reference service life (RSL) of the indoor office chair designed in use for 8 hours a day, 5 days a week, is set as 15 years.
**Time representativeness:** The reference period of production data practices spans from 03-2025 until 03-2026 to represent as recent data as possible.
**Geographical scope:**
A1-A2: Global
A3: Germany
A4, A5, B, C: Europe
**Database(s) and LCA software used:** OpenLCA 2.6.0. software, ecoinvent 3.12 EN15804 and database and EN 15804 reference package (EF 3.1) assessment methodology.
**Description of system boundaries:** Cradle to grave and module D (A + B + C + D)

**Process flow diagram:**




## More information:

**Cut-off criteria:**
The LCA model includes all significant material and energy flows. The cut-off criteria comply with EN 15804+A2, ensuring that at least 99% of mass and energy inflows are captured per unit process, and at least 95% per life cycle stage. Known exclusions are limited to minor metal pre-treatments (degreasing) and negligible steel offcuts. These omitted processes contribute less than 1% to the total mass and energy inputs and less than 5% to the overall environmental impact, which is verified via expert judgment.

**Allocation rules:**
Allocation is only required regarding the assignment of manufacturing resource streams across different product types that are fabricated at the production site. Because the manufacturing site produces various product lines, facility-wide inputs (such as electricity, heating, water, and general waste) are allocated to the declared product based on its mass share of the total annual production volume. Economic allocation is strictly avoided to prevent impact distortions from price fluctuations. Aluminium and Steel scrap are sourced as pre- and post-consumer scrap and are modelled burden free. Processing after end of waste is considered.

**General Assumptions and Scenario Information:**

**Product Stage**

**A1 Raw Material Supply:** The product configuration represents an average se:do pro 2 chair with an aluminum base. To accurately reflect the physical product, component weights are uniformly scaled up to match the total measured product mass. Where specific supplier processing data is unavailable, expert estimations and adjusted ecoinvent datasets model the average production processes.

**A2 Inbound Transport:** Transport modes and distances rely on logistics expert statements. Inbound transport for European goods is assumed as 500 km by truck. For Asian goods, the assumption is 500 km by truck in the country of origin, 20000 km by container ship, and 800 km by truck to the production facility in Germany.

**A3 Manufacturing:** The manufacturing facility operates electricity consisting of 65% purchased hydropower-based electricity (0.004 kWh kg $CO_{2eq}$/kWh, reference year 2021 of modelling dataset), 16% on-site photovoltaic generation (0.097 kg $CO_{2eq}$/kWh, reference year 2021 of modelling dataset) as well as electricity from an on-site CHP powered by natural gas (0.692 kg $CO_{2eq}$/kWh, reference year 2021 of modelling dataset). The resulting electricity mix results in 0.195 kg $CO_{2eq}$/kWh. Facility-wide resource consumption is gathered for reference year 2025 and is allocated to the product based on applicable manufacturing processes and mass basis. The treatment of waste occurring in this stage is included.

**Construction Stage**

**A4 Outbound Transport:** The outbound distribution represents an average European market scenario. An average distance is calculated based on the top-selling countries. Following the description of the dataset, the average freight load factor is 5.79 tonnes, with a gross vehicle weight (GVW) of 15.79 tonne and the diesel consumption is 0.037 l/tkm. The transport data basis for that dataset includes empty returns.

| Parameters to describe the transport to the building site | Value per declared unit | Unit |
|---|---|---|
| Average transport distance | 559 | km |
| Vehicle type | Lorry, 28 metric ton, EURO 5 | - |
| Fuel type and average consumption of vehicle | Diesel, 21.42 | l/100km |
| Maximum transport mass | 18 | tons |
| Capacity utilisation (including empty returns) | 32 | % |
| Bulk density of transported products | 37.6 | kg/m3 |
| Volume capacity utilisation factor | =1 | - |
| Dataset used | transport, freight, lorry, 16-32 metric ton, diesel, EURO 5 \| EN15804GD, U - RER | |

**A5 Installation:** Installation requires no additional resources. The generated packaging waste returns to the Sedus facility, therefore the model accounts for the 559 km return transport of the packaging material as well as the waste treatment itself.

**Use Stage**
**B1 Use, B3 Repair, B4 Replacement, B5 Refurbishment and B6/B7 Operational Energy/Water:** The office chair functions as a passive component, meaning it requires neither power, water, nor resource consumption during operation and produces no direct emissions. Refurbishment, repair and replacement is not a standard practice for this product. Impacts for these modules are declared as 0

**B2 Maintenance:** The model applies a "most likely scenario" based on anticipated standard industry cleaning cycles and considers cleaning agent as well as energy for vacuuming.

**End-of-Life Stage**
**C1 Deconstruction:** The product is manually removed from its environment without energy-intensive tools, impacts are declared as 0.

**C2 Transport:** A standard transport distance of 80 km for materials for recycling/landfill, 130km for materials for incineration by truck to the end-of-life treatment facility is assumed.

**C3/C4 Waste Processing and Disposal:** A conservative European average end-of-life treatment scenario is applied. For instance, steel and aluminium undergo predominantly material recycling (85-90% and ~90% collection rates, respectively), while plastics and textiles primarily go to municipal incineration with energy recovery. It is assumed that the whole product weight undergoes the sorting process.

**Benefits**
**Module D:** The benefits from avoided primary production are calculated using European "market" datasets where available. For material recycling, a quality adjustment factor is applied.

**Data Quality Assessment**
The data quality of the background datasets applied in this Life Cycle Assessment is evaluated in accordance with EN 15941. The assessment utilizes PEF method (2021), applying a numerical scoring scale from 1 to 5. In instances where a specific evaluation of background data is not possible, a conservative worst-case score of "5" is applied across all categories. The individual data quality ratings are aggregated through a weighted average within the OpenLCA Software. The aggregated results demonstrate that while the background datasets generally exhibit moderate to good data quality in terms of geographical, and technological correlation (predominantly scoring between 2 and 4), the aggregated temporal representativeness receives the lowest score across most environmental impact categories. The quality of the relevant datasets assessed included no poor or very poor data and no fair data contributing more than 30% to the core indicator results per the data quality summary requirements.

### Primary data share

| Process Name | Source Type | Source | Ref. Year | Data category | Share of primary data, of GWP-GHG results for A1-A3 |
|---|---|---|---|---|---|
| Production of raw materials and supplied goods | Database | EPD owner | 2025 | Representative generic data | 0.000% |
| Transport of supply chain goods to manufacturing site | Collected data, Database | EPD owner | 2025 | Representative generic data | 0.000% |
| Electricity (in manufacturing) | Collected data | EPD owner | 2025 | Primary Data | 0.869% |
| Heat from Gas (in Manufacturing) | Collected data | EPD owner | 2025 | Primary Data | 2.274% |
| Rest production of product (in manufacturing) | Collected data | EPD owner | 2025 | Representative secondary data | 0.000% |
| Total share of primary data, of GWP-GHG results for A1-A3 | | | | | 3.144% |

*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.*

**Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):**

| | Product Stage | | | Construc-tion process stage | | Use stage | | | | | | | End of Life stage | | | | Beyond product life cycle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Module name | Raw material Supply | Transport | Manufacturing | Transport | Construction installation | Use | Maintenance | Repair | Replacement | Refurbishment | Operational Energy use | Operational water use | Deconstruction / demolition | Transport | Waste Processing | Disposal | Reuse-Recovery-Recycling-potential |
| Module | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
| Modules declared | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Geography | GLO | GLO | DE | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU | EU |
| Share of primary data | 3.144% | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – products | - | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Variation – sites | - | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

# ENVIRONMENTAL PERFORMANCE

## LCA results of the product

### Mandatory impact category indicators according to EN 15804

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-total | kg $CO_2$ eq. | 9.69E+01 | 1.91E-01 | 8.04E+00 | 0.00E+00 | 1.05E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.12E-01 | 1.19E+01 | 2.50E-01 | -2.73E+01 |
| GWP-fossil | kg $CO_2$ eq. | 1.03E+02 | 1.90E-01 | 1.44E+00 | 0.00E+00 | 9.69E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.12E-01 | 1.19E+01 | 1.84E-01 | -2.73E+01 |
| GWP-biogenic | kg $CO_2$ eq. | -5.90E+00 | 3.96E-05 | 6.60E+00 | 0.00E+00 | 2.29E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.49E-05 | 1.80E-04 | 6.60E-02 | 1.21E-02 |
| GWP-luluc | kg $CO_2$ eq. | 9.62E-02 | 6.14E-05 | 1.50E-04 | 0.00E+00 | 7.65E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.00E-04 | 8.93E-05 | 6.77E-06 | -9.34E-03 |
| ODP | kg CFC 11 eq. | 6.07E-06 | 4.30E-09 | 1.08E-08 | 0.00E+00 | 5.51E-08 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.05E-09 | 5.34E-09 | 8.82E-10 | -7.80E-07 |
| AP | mol $H^+$ eq. | 4.56E-01 | 6.00E-04 | 2.34E-03 | 0.00E+00 | 6.58E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.80E-04 | 2.69E-03 | 1.80E-04 | -1.26E-01 |
| EP-freshwater | kg P eq. | 3.48E-03 | 1.42E-06 | 4.40E-06 | 0.00E+00 | 6.85E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.33E-06 | 4.27E-06 | 2.44E-07 | -9.15E-04 |
| EP-marine | kg N eq. | 1.08E-01 | 2.10E-04 | 9.20E-04 | 0.00E+00 | 2.08E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.40E-04 | 1.26E-03 | 2.20E-04 | -2.51E-02 |
| EP-terrestrial | mol N eq. | 1.01E+00 | 2.26E-03 | 9.84E-03 | 0.00E+00 | 1.43E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.70E-03 | 1.30E-02 | 8.10E-04 | -2.42E-01 |
| POCP | kg NMVOC eq. | 3.56E-01 | 9.40E-04 | 3.28E-03 | 0.00E+00 | 4.24E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.55E-03 | 3.33E-03 | 3.30E-04 | -8.13E-02 |
| ADP-minerals&metals* | kg Sb eq. | 9.20E-04 | 6.63E-07 | 1.77E-06 | 0.00E+00 | 1.24E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.09E-06 | 8.40E-07 | 6.26E-08 | -1.66E-04 |
| ADP-fossil* | MJ | 1.51E+03 | 2.69E+00 | 6.59E+00 | 0.00E+00 | 1.62E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.40E+00 | 3.00E+00 | 6.31E-01 | -3.61E+02 |
| WDP* | $m^3$ | 4.73E+01 | 1.40E-02 | 3.19E-01 | 0.00E+00 | 1.19E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.29E-02 | 7.96E-01 | 3.17E-02 | -1.20E+01 |
| Acronyms | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption | | | | | | | | | | | | | | | |

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

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 (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

## Additional mandatory impact category indicators according to EN 15804

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| GWP-GHG[1] | kg $CO_2$ eq. | 1.04E+02 | 1.91E-01 | 1.44E+00 | 0.00E+00 | 1.05E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.12E-01 | 1.19E+01 | 1.84E-01 | -2.73E+01 |

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Particulate matter | disease inc. | 5.41E-06 | 1.51E-08 | 4.08E-08 | 0.00E+00 | 7.18E-08 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.48E-08 | 1.26E-08 | 4.18E-09 | -8.76E-07 |
| Ionizing radiation | kBq U235 eq. | 2.18E+00 | 1.15E-03 | 3.45E-03 | 0.00E+00 | 2.30E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.88E-03 | 4.97E-03 | 7.50E-04 | -5.79E-01 |
| Ecotoxicity, freshwater | CTUe | 6.26E+02 | 3.98E-01 | 7.87E+00 | 0.00E+00 | 1.30E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.52E-01 | 2.52E+01 | 2.49E+01 | -7.80E+01 |
| Human toxicity, cancer | CTUh | 4.46E-08 | 3.11E-11 | 2.85E-10 | 0.00E+00 | 1.18E-09 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.09E-11 | 9.46E-10 | 9.46E-12 | -1.04E-08 |
| Human toxicity, non-cancer | CTUh | 7.91E-07 | 1.63E-09 | 1.27E-08 | 0.00E+00 | 1.12E-08 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.67E-09 | 2.74E-08 | 1.35E-09 | -1.71E-07 |
| Land Use (Soil Quality Index) | Pt | 3.91E+02 | 1.60E+00 | 3.68E+00 | 0.00E+00 | 1.59E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.61E+00 | 5.23E-01 | 1.43E+00 | -1.88E+00 |

## Resource use indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| PERE | MJ | 8.36E+01 | 4.42E-02 | 5.09E+01 | 0.00E+00 | 5.68E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.23E-02 | 7.86E-01 | 2.68E-02 | -2.03E+01 |
| PERM | MJ | 5.14E+01 | 0.00E+00 | -5.08E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -6.02E-01 | 0.00E+00 | 0.00E+00 |
| PERT | MJ | 1.35E+02 | 4.42E-02 | 1.41E-01 | 0.00E+00 | 5.68E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.23E-02 | 1.84E-01 | 2.68E-02 | -2.03E+01 |
| PENRE | MJ | 1.32E+03 | 2.69E+00 | 1.93E+01 | 0.00E+00 | 1.64E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.40E+00 | 1.42E+02 | 3.46E+01 | -3.61E+02 |

[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 $CO_2$ is set to zero.

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PENRM | MJ | 1.86E+02 | 0.00E+00 | -1.28E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -1.39E+02 | -3.40E+01 | 0.00E+00 |
| PENRT | MJ | 1.51E+03 | 2.69E+00 | 6.59E+00 | 0.00E+00 | 1.64E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.40E+00 | 3.00E+00 | 6.32E-01 | -3.61E+02 |
| SM | kg | 1.40E+01 | 2.60E-03 | 9.57E-03 | 0.00E+00 | 6.55E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.26E-03 | 1.25E-02 | 7.20E-04 | -6.05E-01 |
| RSF | MJ | 1.76E+00 | 6.10E-04 | 2.54E-03 | 0.00E+00 | 1.21E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.00E-03 | 5.41E-03 | 1.50E-04 | -5.17E-01 |
| NRSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | $m^3$ | 1.02E+00 | 3.20E-04 | 5.04E-03 | 0.00E+00 | 2.79E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.20E-04 | 1.36E-02 | -1.02E-02 | -2.66E-01 |
| Acronyms | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | | | | | | | |

## Waste indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Hazardous waste disposed | kg | 3.00E+01 | 1.64E-02 | 8.42E-02 | 0.00E+00 | 3.44E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.69E-02 | 1.70E-01 | 4.72E-03 | -8.50E+00 |
| Non-hazardous waste disposed | kg | 3.19E+02 | 2.16E-01 | 4.70E+00 | 0.00E+00 | 3.69E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.53E-01 | 5.89E+00 | 1.35E+01 | -4.92E+01 |
| Radioactive waste disposed | kg | 1.58E-03 | 7.43E-07 | 2.28E-06 | 0.00E+00 | 1.39E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.22E-06 | 3.62E-06 | 4.08E-07 | -4.36E-04 |

## Output flow indicators

| Results per functional or declared unit | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **Unit** | **A1-A3** | **A4** | **A5** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **C1** | **C2** | **C3** | **C4** | **D** |
| Components for re-use | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Material for recycling | kg | 6.16E+00 | 2.40E-03 | 1.78E-02 | 0.00E+00 | 6.28E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.93E-03 | 9.65E+00 | 4.70E-04 | 0.00E+00 |
| Materials for energy recovery | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy, electricity | MJ | 1.16E+00 | 5.00E-04 | 1.88E-03 | 0.00E+00 | 8.79E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.48E-03 | 3.68E-03 | 0.00E+00 |
| Exported energy, thermal | MJ | 4.70E-01 | 6.30E-04 | 2.04E-03 | 0.00E+00 | 3.40E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.74E-03 | 3.37E-03 | 0.00E+00 |

# ADDITIONAL SCENARIOS – 100% single-treatment EoL

## Mandatory impact category indicators according to EN 15804

| Results per functional or declared unit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 100% Recycling | | | | 100% Incineration | | | | 100% Landfill | | | |
| Indicator | Unit | C2 | C3 | C4 | D | C2 | C3 | C4 | D | C2 | C3 | C4 | D |
| GWP-total | kg $CO_2$ eq. | 2.64E-01 | 8.42E-02 | 0.00E+00 | -7.41E+01 | 4.29E-01 | 2.32E+01 | 0.00E+00 | 1.57E+01 | 2.64E-01 | 0.00E+00 | 1.11E+00 | 2.36E+01 |
| GWP-fossil | kg $CO_2$ eq. | 2.64E-01 | 1.82E-02 | 0.00E+00 | -7.15E+01 | 4.29E-01 | 2.31E+01 | 0.00E+00 | 1.57E+01 | 2.64E-01 | 0.00E+00 | 9.80E-01 | 2.35E+01 |
| GWP-biogenic | kg $CO_2$ eq. | 5.49E-05 | 6.60E-02 | 0.00E+00 | -2.53E+00 | 8.92E-05 | 4.45E-02 | 0.00E+00 | 5.67E-02 | 5.49E-05 | 0.00E+00 | 1.27E-01 | 6.52E-02 |
| GWP-luluc | kg $CO_2$ eq. | 8.50E-05 | 3.80E-05 | 0.00E+00 | -1.06E-02 | 1.40E-04 | 2.10E-04 | 0.00E+00 | 3.32E-02 | 8.50E-05 | 0.00E+00 | 4.85E-05 | 4.40E-02 |
| ODP | kg CFC 11 eq. | 5.96E-09 | 7.20E-10 | 0.00E+00 | -4.01E-06 | 9.69E-09 | 1.25E-08 | 0.00E+00 | -1.45E-07 | 5.96E-09 | 0.00E+00 | 5.70E-09 | 9.86E-08 |
| AP | mol $H^+$ eq. | 8.30E-04 | 8.38E-05 | 0.00E+00 | -3.39E-01 | 1.34E-03 | 6.15E-03 | 0.00E+00 | 1.12E-01 | 8.30E-04 | 0.00E+00 | 1.16E-03 | 1.34E-01 |
| EP-freshwater | kg P eq. | 1.97E-06 | 1.37E-06 | 0.00E+00 | -1.40E-03 | 3.20E-06 | 9.07E-06 | 0.00E+00 | 3.20E-04 | 1.97E-06 | 0.00E+00 | 1.70E-06 | 7.12E-04 |
| EP-marine | kg N eq. | 2.90E-04 | 1.24E-05 | 0.00E+00 | -7.66E-02 | 4.60E-04 | 2.88E-03 | 0.00E+00 | 2.17E-02 | 2.90E-04 | 0.00E+00 | 1.26E-03 | 2.56E-02 |
| EP-terrestrial | mol N eq. | 3.13E-03 | 1.40E-04 | 0.00E+00 | -6.64E-01 | 5.09E-03 | 2.99E-02 | 0.00E+00 | 2.14E-01 | 3.13E-03 | 0.00E+00 | 5.21E-03 | 2.56E-01 |
| POCP | kg NMVOC eq. | 1.31E-03 | 7.83E-05 | 0.00E+00 | -2.29E-01 | 2.13E-03 | 7.83E-03 | 0.00E+00 | 6.40E-02 | 1.31E-03 | 0.00E+00 | 2.09E-03 | 7.94E-02 |
| ADP-minerals&metals* | kg Sb eq. | 9.18E-07 | 3.21E-08 | 0.00E+00 | -3.90E-04 | 1.49E-06 | 2.02E-06 | 0.00E+00 | 2.28E-04 | 9.18E-07 | 0.00E+00 | 4.30E-07 | 2.34E-04 |
| ADP-fossil* | MJ | 3.72E+00 | 5.78E-01 | 0.00E+00 | -9.32E+02 | 6.05E+00 | 7.38E+00 | 0.00E+00 | 1.03E+02 | 3.72E+00 | 0.00E+00 | 4.14E+00 | 2.52E+02 |
| WDP* | $m^3$ | 1.94E-02 | 7.72E-03 | 0.00E+00 | -4.12E+01 | 0.00E+00 | 3.15E-02 | 1.61E+00 | 0.00E+00 | 1.94E-02 | 0.00E+00 | 2.11E-01 | 9.56E+00 |
| Acronyms | GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption | | | | | | | | | | | | |

## Additional mandatory impact category indicators according to EN 15804

| Results per functional or declared unit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 100% Recycling | | | | 100% Incineration | | | | 100% Landfill | | | |
| Indicator | Unit | C2 | C3 | C4 | D | C2 | C3 | C4 | D | C2 | C3 | C4 | D |
| GWP-GHG | kg $CO_2$ eq. | 2.64E-01 | 1.82E-02 | 0.00E+00 | -7.16E+01 | 4.29E-01 | 2.31E+01 | 0.00E+00 | 1.57E+01 | 2.64E-01 | 0.00E+00 | 1.04E+00 | 2.36E+01 |

| Results per functional or declared unit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 100% Recycling | | | | 100% Incineration | | | | 100% Landfill | | | |
| Indicator | Unit | C2 | C3 | C4 | D | C2 | C3 | C4 | D | C2 | C3 | C4 | D |
| Particulate matter | disease inc. | 2.10E-08 | 3.65E-10 | 0.00E+00 | -4.28E-06 | 3.41E-08 | 4.97E-08 | 0.00E+00 | 2.85E-06 | 2.10E-08 | 0.00E+00 | 2.68E-08 | 2.92E-06 |
| Ionizing radiation | kBq U235 eq. | 1.59E-03 | 2.52E-03 | 0.00E+00 | -2.75E-01 | 2.59E-03 | 8.25E-03 | 0.00E+00 | -6.94E-01 | 1.59E-03 | 0.00E+00 | 5.71E-03 | 6.23E-03 |
| Ecotoxicity, freshwater | CTUe | 5.51E-01 | 4.51E-02 | 0.00E+00 | -1.20E+02 | 8.96E-01 | 5.49E+01 | 0.00E+00 | 9.16E+01 | 5.51E-01 | 0.00E+00 | 2.46E+02 | 1.03E+02 |
| Human toxicity, cancer | CTUh | 4.31E-11 | 2.92E-12 | 0.00E+00 | -1.36E-08 | 7.00E-11 | 1.68E-09 | 0.00E+00 | 1.13E-08 | 4.31E-11 | 0.00E+00 | 6.17E-11 | 1.24E-08 |
| Human toxicity, non-cancer | CTUh | 2.26E-09 | 1.25E-10 | 0.00E+00 | -2.28E-07 | 3.68E-09 | 5.39E-08 | 0.00E+00 | 1.57E-07 | 2.26E-09 | 0.00E+00 | 8.50E-09 | 1.87E-07 |
| Land Use (Soil Quality Index) | Pt | 2.21E+00 | 5.77E-02 | 0.00E+00 | -8.48E+00 | 3.59E+00 | 3.90E+00 | 0.00E+00 | 7.03E+01 | 2.21E+00 | 0.00E+00 | 8.95E+00 | 8.32E+01 |

## Resource use indicators

| Results per functional or declared unit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 100% Recycling | | | | 100% Incineration | | | | 100% Landfill | | | |
| Indicator | Unit | C2 | C3 | C4 | D | C2 | C3 | C4 | D | C2 | C3 | C4 | D |
| PERE | MJ | 6.12E-02 | 6.70E-01 | 0.00E+00 | -2.06E+01 | 9.95E-02 | 9.40E-01 | 0.00E+00 | 4.97E+00 | 6.12E-02 | 0.00E+00 | 8.04E-01 | 2.39E+01 |
| PERM | MJ | 0.00E+00 | -6.02E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -6.02E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -6.02E-01 | 0.00E+00 |
| PERT | MJ | 6.12E-02 | 6.81E-02 | 0.00E+00 | -2.06E+01 | 9.95E-02 | 3.39E-01 | 0.00E+00 | 4.97E+00 | 6.12E-02 | 0.00E+00 | 2.03E-01 | 2.39E+01 |
| PENRE | MJ | 3.72E+00 | 1.74E+02 | 0.00E+00 | -9.32E+02 | 6.05E+00 | 1.81E+02 | 0.00E+00 | 1.03E+02 | 3.72E+00 | 0.00E+00 | 1.77E+02 | 2.52E+02 |
| PENRM | MJ | 0.00E+00 | -1.73E+02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -1.73E+02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | -1.73E+02 | 0.00E+00 |
| PENRT | MJ | 3.72E+00 | 5.78E-01 | 0.00E+00 | -9.32E+02 | 6.05E+00 | 7.38E+00 | 0.00E+00 | 1.03E+02 | 3.72E+00 | 0.00E+00 | 4.14E+00 | 2.52E+02 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SM | kg | 3.61E-03 | 4.10E-03 | 0.00E+00 | -5.44E-01 | 5.86E-03 | 2.54E-02 | 0.00E+00 | 2.89E+00 | 3.61E-03 | 0.00E+00 | 5.28E-03 | 4.07E+00 |
| RSF | MJ | 8.40E-04 | 2.38E-03 | 0.00E+00 | -1.98E-01 | 1.37E-03 | 8.87E-03 | 0.00E+00 | -7.31E-01 | 8.40E-04 | 0.00E+00 | 1.06E-03 | -4.65E-02 |
| NRSF | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | $m^3$ | 4.40E-04 | 1.80E-04 | 0.00E+00 | -9.42E-01 | 7.20E-04 | 2.78E-02 | 0.00E+00 | 1.86E-01 | 4.40E-04 | 0.00E+00 | -5.96E-02 | 2.36E-01 |
| Acronyms | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water | | | | | | | | | | | | |

## Waste indicators

| Results per functional or declared unit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 100% Recycling | | | | 100% Incineration | | | | 100% Landfill | | | |
| Indicator | Unit | C2 | C3 | C4 | D | C2 | C3 | C4 | D | C2 | C3 | C4 | D |
| Hazardous waste disposed | kg | 2.27E-02 | 1.67E-03 | 0.00E+00 | -1.09E+01 | 3.70E-02 | 3.13E-01 | 0.00E+00 | 6.91E+00 | 2.27E-02 | 0.00E+00 | 3.60E-02 | 7.30E+00 |
| Non-hazardous waste disposed | kg | 2.99E-01 | 6.49E-02 | 0.00E+00 | -5.59E+01 | 4.86E-01 | 2.52E+01 | 0.00E+00 | 2.40E+01 | 2.99E-01 | 0.00E+00 | 8.17E+01 | 4.25E+01 |
| Radioactive waste disposed | kg | 1.03E-06 | 1.92E-06 | 0.00E+00 | -2.00E-04 | 1.67E-06 | 5.83E-06 | 0.00E+00 | -5.50E-04 | 1.03E-06 | 0.00E+00 | 3.10E-06 | -9.28E-06 |

## Output flow indicators

| Results per functional or declared unit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 100% Recycling | | | | 100% Incineration | | | | 100% Landfill | | | |
| Indicator | Unit | C2 | C3 | C4 | D | C2 | C3 | C4 | D | C2 | C3 | C4 | D |
| Components for re-use | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Material for recycling | kg | 0.00E+00 | 1.73E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.22E-03 | 0.00E+00 |
| Materials for energy recovery | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy, electricity | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.13E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy, thermal | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.78E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

# ABBREVIATIONS

| Abbreviation | Definition |
|---|---|
| ABS | Acrylonitrile Butadiene Styrene (type of plastic) |
| ADP | Abiotic Depletion Potential |
| ADPE / ADP-minerals&metals | Abiotic Depletion Potential for non-fossil resources |
| ADPF / ADP-fossil | Abiotic Depletion Potential for fossil resources |
| AG | Aktiengesellschaft (German Stock Corporation) |
| AIB | Association of Issuing Bodies |
| AP | Acidification Potential, Accumulated Exceedance |
| BGR | BGR (Specific material or supplier code for plastics) |
| BOM | Bill of Materials |
| CE | Circular Economy |
| CFC-11 | Trichlorofluoromethane (used as a reference for ozone depletion) |
| CH | Confoederatio Helvetica (Switzerland - geographical dataset region) |
| CN | China (geographical dataset region) |
| CO2 | Carbon Dioxide |
| CPC | Central Product Classification |
| DE | Deutschland (Germany - geographical dataset region) |
| EEA | European Environment Agency |
| EF | Environmental Footprint |
| EN | European Norm / European Standard |
| EoL | End of Life |
| EP | Eutrophication Potential |
| EPD | Environmental Product Declaration |
| eq | Equivalent |
| ERP | Enterprise Resource Planning (internal company system) |
| EU | European Union |
| FAE | Municipal Incineration FAE (Specific dataset identifier for waste incineration) |
| FW | Use of net fresh water |
| GF [X] | Glass Fiber (with [X] percentage, e.g., 30% glass fiber) |
| GHG | Greenhouse Gases |
| GLO | Global (geographical dataset region) |
| GPI | General Programme Instructions |
| GWP | Global Warming Potential |
| GWP-biogenic | Global Warming Potential - biogenic |
| GWP-fossil | Global Warming Potential - fossil fuels |
| GWP-luluc | Global Warming Potential - land use and land use change |
| H+ | Hydrogen ion (used as a reference for acidification) |
| ISO | International Organization for Standardization |
| JRC | Joint Research Centre (European Commission) |
| kg | Kilogram |
| kWh | Kilowatt hour |
| LCA | Life Cycle Assessment |
| LCI | Life Cycle Inventory |
| luluc | Land Use and Land Use Change |
| m3 | Cubic meter |
| MJ | Megajoule |
| mol | Mole (unit of measurement) |
| N | Nitrogen (used as a reference for eutrophication) |
| ND | Not Declared |
| NMVOC | Non-Methane Volatile Organic Compounds |
| NRSF | Use of non-renewable secondary fuels |
| ODP | Depletion potential of the stratospheric ozone layer (Ozone Depletion Potential) |
| P | Phosphorus (used as a reference for eutrophication) |
| PA6 | Polyamide 6 (Nylon 6) |
| PCR | Product Category Rules |
| c-PCR | Complementary Product Category Rules |
| PEF | Product Environmental Footprint |

| | |
|---|---|
| PENRE | Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials |
| PENRM | Use of non-renewable primary energy resources used as raw materials |
| PENRT | Total use of non-renewable primary energy resources |
| PERE | Use of renewable primary energy excluding renewable primary energy resources used as raw materials |
| PERM | Use of renewable primary energy resources used as raw materials |
| PERT | Total use of renewable primary energy resources |
| POCP | Photochemical Ozone Creation Potential (Formation potential of tropospheric ozone) |
| POM | Polyoxymethylene (type of plastic) |
| PP | Polypropylene (type of plastic) |
| PUR | Polyurethane |
| PV | Photovoltaic |
| RAS | Rest of Asia (geographical dataset region) / Recycled Aluminium Scrap |
| RER | Europe (geographical dataset region / Région Europe) |
| RoW | Rest of World (geographical dataset region) |
| RSF | Use of renewable secondary fuels |
| RSL | Reference Service Life |
| SAP | Systems, Applications, and Products in Data Processing (ERP software) |
| Sb | Antimony (used as a reference for abiotic depletion) |
| SM | Use of secondary material |
| tkm | Ton-kilometer (unit of freight transport) |
| UN | United Nations |
| WDP | Water (user) deprivation potential (deprivation-weighted water consumption) |
| ZJ | Zhejiang (Province in China - geographical dataset region) |

# REFERENCES

**Core Programme and Category Rules**

- **EPD International (2025)** General Programme Instructions for the International EPD System. Version 5.0.1. www.environdec.com.
- **EPD International (2025)** PCR 2019:14 Construction products (to which c-PCR-021 is complementary). Version 2.0.1.
- **EPD International (2025)** c-PCR-021 Furniture and components of furniture (to PCR 2019:14). Version 2.0.1.

**Normative Standards**

- **CEN (2021) EN 15804:2012+A2:2019+AC:2021**, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.
- **CEN (2024) EN 15941:2024**, Sustainability of construction works – Data quality for environmental assessment of products and construction work – Selection and use of data.
- **ISO (2006) ISO 14025:2006**, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.
- **ISO (2006) ISO 14040:2006**, Environmental management – Life cycle assessment – Principles and framework.

- **ISO (2006) ISO 14044:2006**, Environmental management – Life cycle assessment – Requirements and guidelines.

**Additional Technical References**

- **European Commission (2021)** Product Environmental Footprint (PEF) Method (for default values if used in Module D).
- **IPCC (2021)** Sixth Assessment Report (AR6) (as the basis for current EF 3.1 characterization factors used in the EPD).
- **United Nations** Central Product Classification (UN CPC), identifying the code for the specific office chair (e.g., UN CPC 381)

# VERSION HISTORY

**Version 1, 2026-10-14**
Original Version of the EPD