# Environmental Product Declaration

In accordance with ISO 14025:2006, EN 15804:2012+A2:2019/AC:2021 and ISO 21930:2017 for

## TESCON VANA

### All-round adhesive tape for interior and exterior use

from

### pro clima – MOLL bauökologische Produkte GmbH

| | |
|---|---|
| Programme: | The International EPD® System, www.environdec.com |
| Programme operator: | EPD International AB<br>Box 21060<br>SE-10031 Stockholm, Sweden |
| EPD registration number: | EPD-IES-0017291 |
| Version date: | 2026-10-01 |
| Valid until: | 2029-12-06 |
| EPD type: | EPD of a specific product |

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com*

# General information

**Programme information**

Programme: The International EPD® System
Address: EPD International AB
Box 210 60
SE-100 31 Stockholm, Sweden
Website: www.environdec.com
E-mail: info@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, version 1.3.4.

UN CPC code: No. 36920: "Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics"

PCR review was conducted by: The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact

**Life Cycle Assessment (LCA)**

LCA accountability: Jannik Schulz, María Díaz Cáceres,
brands & values GmbH, info@brandsandvalues.com

**Third-party verification**

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☑ EPD verification by individual verifier
Third party verifier: Jan Weinzettel, weinzettel@seznam.cz
Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third-party verifier:

☐ Yes ☑ No

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

EPDs within the same product category but registered in different EPD programmes, 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 characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

# Company information

**Owner of the EPD**
pro clima / MOLL bauökologische Produkte GmbH
Rheintalstr. 35-43 – 68723 Schwetzingen – Germany
T: +49 (0) 62 02 – 27 82.0; info@proclima.com

**Contact**
Michael Förster: support@proclima.com

**Description of the organisation**
pro clima is a pioneer in the intelligent, reliable sealing of building envelopes. The company develops and markets product systems for achieving maximum protection against moisture damage to structures and mould:
- Humidity-variable hydrosafe® high-performance vapour check and airtightness membranes for interior sealing on new buildings and renovation projects.
- Roofing underlays and breather membranes (WRBs) with active moisture transport for permanently protected exterior sealing of roofs and walls.
- Special adhesives and waterproof tapes.
- Sealing grommets as detailed solutions.

**Highest quality for optimal performance**
- The system products are manufactured using state-of-the-art production processes at leading production facilities in Germany.
- Production is subject to the highest quality standards, ensuring that insulation is reliably protected against moisture damage and mould.
- Highest effectiveness of thermal insulation.
- Reduction of heating costs due to optimal air sealing.
- Dry insulation materials.
- Best possible protection against moisture damage to structures and mould.
- Comfortable interiors in summer and winter.
- Healthy indoor climates.
- Highest ecological value.

**Together towards a successful future**
People are the focus of every decision at pro clima, and the company's guiding mission is to advance building culture as a whole. To achieve this goal, system products have been developed for over 30 years that are consistently geared to meet the health and comfort needs of users. Many of pro clima's pioneering developments are now established as state-of-the-art approaches. Today, these products are successfully used in over 40 countries worldwide.

**Name and location of production site(s)**
Manufacturer: pro clima / MOLL bauökologische Produkte GmbH
Location of manufacturing sites: Germany
The declared product is manufactured at two production sites in Germany under contract for pro clima / MOLL bauökologische Produkte GmbH. The cities are not disclosed in this public EPD for reasons of commercial confidentiality, as publication would reveal commercially sensitive supply chain information. The exact production sites are documented in the background report and have been made available to the independent verifier.
Final warehouse and quality control: pro clima / MOLL bauökologische Produkte GmbH, Schwetzingen, Germany

**Product-related or management system-related certifications**
All production sites are ISO 9001 certified.

# Product information

**Product name**
TESCON VANA

**Product identification**
All-round adhesive tape for interior and exterior use

**Product description**
TESCON VANA has the following components:
backing: special PP fleece; adhesive: water-resistant SOLID adhesive; release film: silicone-coated paper.

**UN CPC code**
No. 36920: "Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics"

**Products covered by the EPD**
TESCON VANA (width: 0.1 m / length: 30 m) GTIN 4026639150769
TESCON VANA (width: 0.15 m / length: 30 m) GTIN 4026639016690
TESCON VANA (width: 0.2 m / length: 30 m) GTIN 4026639134912
TESCON VANA (width: 0.3 m / length: 30 m) GTIN 4026639230591
TESCON VANA (width: 0.05 m / length: 30 m) GTIN 4026639114860
TESCON VANA (width: 0.06 m / length: 30 m) GTIN 4026639220707
TESCON VANA (width: 0.06 m / length: 30 m) GTIN 4026639219817
TESCON VANA (width: 0.06 m / length: 30 m) GTIN 4026639144256
TESCON VANA (width: 0.06 m / length: 30 m) GTIN 4026639113658
TESCON VANA (width: 0.06 m / length: 30 m) GTIN 4026639121851
TESCON VANA (width: 0.075 m / length: 30 m) GTIN 4026639016683
TESCON VANA (width: 0.06 m / length: 30 m) GTIN 4026639239648
TESCON VANA (width: 0.1 m / length: 30 m) GTIN 4026639165176
TESCON VANA (width: 0.15 m / length: 30 m) GTIN 4026639154750
TESCON VANA (width: 0.075 m / length: 30 m) GTIN 4026639154736
TESCON VANA (width: 0.06 m / length: 30 m) GTIN 4026639232984

This EPD relates to a single product – TESCON VANA – and covers multiple GTINs. While all variants are essentially the same product, they differ only in their dimensions or customised printing, such as customer logos. These variations meet specific customer requirements, but do not alter the inherent environmental characteristics of the product, thus justifying a common EPD.

**Geographical Scope**
Global

**Applications**
Interior use: Airtight taping of vapour check and airtight membranes and of airtight wood-based panels.
Exterior use: Windproofing and rainproofing of roofing underlay and breather membranes (e.g. pro clima SOLITEX) and underlay panels. Airtight taping of on-roof and refurbishment vapour check and airtight membranes.
All taped joints, indoor and outdoor, can be implemented between similar components or else with adjacent structural elements with a smooth, non-mineral surface (e.g. pipe penetrations, roof windows).

**Properties**
Sticks reliably – even if moisture is present: water-resistant SOLID adhesive. Particularly durable: adhesion for 100 years, independently tested and confirmed. Subsequent work can be carried out more flexibly: 6 months of outdoor exposure. Subsequent work can be started quickly: fleece backing can be plastered over directly. Easy to work with: very malleable fleece backing that can be torn by hand. Test winner in April 2012 with the German product-testing foundation 'Stiftung Warentest'. Construction in adherence with standards: for airtight sealing in accordance with DIN 4108-7, SIA 180 and RE 2020. Excellent values in hazardous substance testing, has been tested according to the ISO 16000 evaluation scheme.

## Technical specifications

| Property | Regulation | Value |
|---|---|---|
| Colour | N/A | Dark blue |
| Outdoor exposure | N/A | 6 months |
| Bond durability, non-aged/aged | DIN 4108-11 | Passed |
| Can be plastered over | N/A | Yes |
| Installation temperature | N/A | Above -10 °C ; 14 °F |
| Temperature resistance | N/A | Permanent -40 °C to 90 °C ; -40 °F to 194 °F |
| Storage | N/A | Cool and dry |

# LCA information

The EPD conducted is for the specific product TESCON VANA all-round adhesive tape.

**Declared unit:** 1m² of TESCON VANA all-round adhesive tape and accompanying packaging.
**Conversion factor to mass:** 0.437 kg/m² (Product with packaging)
**Grammage of product:** 0.262 kg/m² (Product without packaging)
**Reference service life:** 50 years
**Time representativeness:** Based on yearly manufacturing data from 01/01/2023 until 31/12/2023.

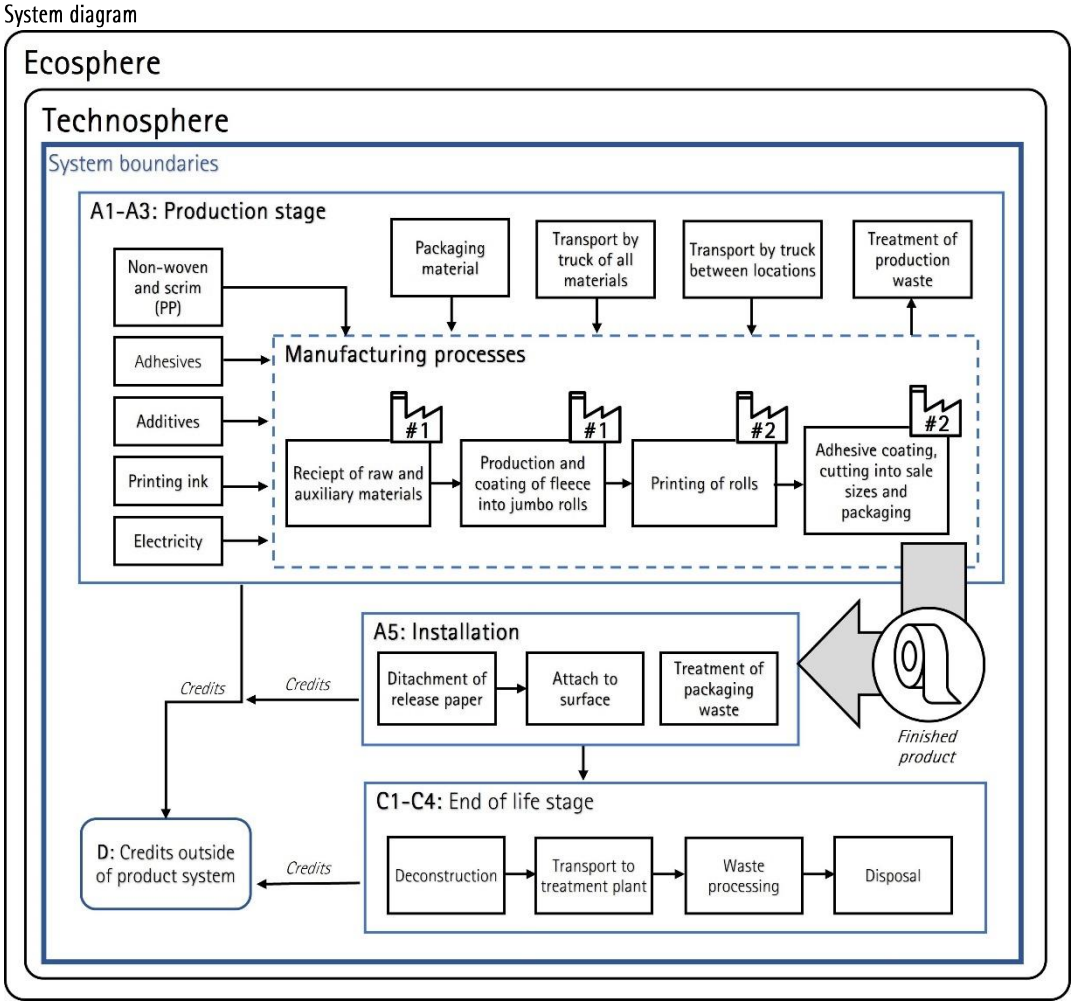
**Description of the manufacturing processes**
In the manufacturing process for TESCON VANA all-round adhesive tape for interior and exterior use, the backing fleece is first produced and then printed, after which the backing and adhesive are bonded together, and a release film is attached to create large rolls. Splits are then created in the release film, if required for the relevant final article. These rolls are cut into smaller rolls of tape, which are the sales units. These rolls are then packaged and sent for storage and distribution, first to the central warehouse in Germany, and then all over the world for further sale.

**Database and LCA software used**
For the LCA model, the software system for holistic balancing (LCA for Experts) version 10.9 was used. Background data sets from the current version of the LCA for experts (GaBi) database service pack 2024.2 were used entirely.

**Description of system boundaries**
b) Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). The additional module is A5.

- The biogenic C of the product packaging is balanced out in module A5
- Impacts of adhesive drying are included in module A5.
- Infrastructure and capital goods are excluded from the system boundaries.
- All processing steps and locations are balanced within the system boundaries.
- The LCI manufacturing data was gathered for the specific declared product, and no co-product allocation was necessary.
- The allocation of waste follows the polluter-pays principle. The system boundary to the next product system is set when the waste reaches the end-of-waste state. The impacts of waste treatment from production are included in Module A3. The impacts of waste treatment during end-of-life are included in Module C3, where the product reaches the end-of-waste status.
- All the LCI data in Modules A1-A5 corresponds to primary data collected from the manufacturing plant and contracted suppliers, including material and energy inputs, and waste and emission outputs. This data is responsible for >90% of the GHG emissions.

System diagram




Each processing step within the system boundaries is marked with an icon and number (#1, #2, etc.), indicating the specific production site where it occurs. The system boundaries cover the following modules:

### A1. Raw Material Supply

• Extraction and processing of raw materials required for manufacturing the declared adhesive tape: Non-woven and scrim (PP), additives and printing ink.

• Extraction and processing of raw materials required for packaging the 1 m² of finished product. This includes the release paper, which is found between the layers of tape, and the roll core which holds the structure of the tape roll. The materials are: Paper, silicone, cardboard, film (PE), film (PP), pallet.

• Extraction and processing of raw materials required for internal packaging, referring to packaging for the transportation of the semi-finished product between all locations depicted in the system diagram (#1 to #3). Internal packaging includes cardboard, film (PE) and wood Pallet.

• Generation of electricity from primary energy resources to supply the production sites with energy.

### A2. Transportation

• Transportation of the raw materials was modelled based on the providers specific locations and transportation via truck to the corresponding production locations in Germany. All materials are procured from providers within a distance of less than 1400 km.

• After production is done in the production location #1, the large rolls are transported to the production location #2 for printing. The application of the adhesive, cutting and packaging of the large roll into sales units occurs then in production location #3. The units are packed and loaded onto pallets for further transport. The transportation of raw materials for packaging as well as the transportation of the semi-finished products to all production locations is modelled in Module A2.

### A3. Manufacturing

- Manufacturing of the defined adhesive tape occurs in Germany.
- The production of the large adhesive tape roll is done in the production location #1, by bonding and laminating the polymers and the non-woven. The rolls are cut into sale units, after printing and confection in the production location #2. The products are then packed on pallets for further transportation.
- Treatment of waste generated from the manufacturing processes is included in the model. The model includes processing up to the end-of-waste status or disposal of final residues including any packaging not leaving the factory gate. Resulting credits are assigned to module D.
- Electricity for production in module A3 is modelled with the German Residual electricity mix.

**A5. Construction Installation**

- The adhesive tape is installed by removing the release paper and securing the overlapped membranes in place.
- The packaging waste resulting from the installation of the product on the construction site is sent for waste treatment.
- The expenses for installation and the transport expenses for disposal are taken into account in module A5.
- The incineration of packaging waste receives credits for electricity and thermal energy generation, which are allocated in module D.

**C1-C4. End of Life**

- The adhesive tape is treated as waste in module C3 by means of incineration with energy recovery.
- Module C2 contains the environmental impact of transportation of the product to the waste treatment plant.
- Module C3 contains the necessary processes for waste treatment at the end of the product life cycle.
- The loads for waste treatment are mapped here until the end of the waste property is reached.
- Emissions are assigned to module C3. Resulting credits are assigned to module D.

**D. Reuse, recovery, recycling potential**

- This product has no considerable benefits due to recycling or/and reuse, but considerable benefits from energy recovery in End of Life.
- The value flows resulting from the treatment of packaging waste in module A3, packaging waste in module A5 and the product in module C3, which can potentially serve as energy input for a downstream product system in the form of the energy recovered from the waste-to-energy treatment, are accounted for completely in module D as credits outside of product system.

**More information**

- Additional information can be found by contacting pro clima at info@proclima.com
- LCA practitioner: brands & values GmbH, info@brandsandvalues.com

Electricity in A1-A3 accounts for less than 30% of the GWP-GHG results of modules A1-A3. The energy requirements for production were modelled using the Residual electricity mix of the electricity supplier on the market. In this case the LCA for Experts dataset of Residual grid mix; AC, technology mix; consumption mix, to consumer; <1kV in Germany from the reference year 2022. The climate impact of the dataset is 0.847 kg $CO_2$ eq./kWh (using the GWP-GHG indicator). A residual mix represents the production mix of a country corrected with generation attributes which are explicitly tracked. Residual mix is used to determine the energy origin of untracked consumption, i.e. consumption, which has not been disclosed with explicit tracking instruments such as Guarantees of Origin. The Residual grid mix in question includes the following energy sources: 1.8% from renewable sources, 18.17% from nuclear, 34.57% from lignite, 21.19% from coal, 20.88% from gas, 1.08% from oil and 2.32% from non-specific fossil sources according to the LCA for Experts dataset.

**Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation**

| | Product stage | | | Construction process stage | | Use stage | | | | | | | End of life stage | | | | Resource recovery stage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Raw material supply | Transport | Manufacturing | Transport | Construction installation | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction 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 | ND | X | ND | ND | ND | ND | ND | ND | ND | X | X | X | X | X |
| Geography | DE | DE | DE | | GLO | | | | | | | | GLO | GLO | GLO | GLO | GLO |
| Specific data used | 6% | | | | | | | | | | | | | | | | |
| Variation – products | 0% | | | | | | | | | | | | | | | | |
| Variation – sites | 0% | | | | | | | | | | | | | | | | |

Modules declared: (X = included; ND = not declared).

# Content information

| Product components | Weight, kg | Post-consumer material, weight-% | Biogenic material, weight-% and kg C/kg |
|---|---|---|---|
| Non-woven and scrim (PP) | 0.060 | 0.0% | 0%- 0 kg C/kg |
| Additives and adhesives | 0.200 | 0.0% | 0%- 0 kg C/kg |
| Printing ink | 0.002 | 0.0% | 0%- 0 kg C/kg |
| Total product | 0.262 | 0.0% | 0%- 0 kg C/kg |
| **Packaging materials** | **Weight, kg** | **Weight-% (relative to the product)** | **Weight biogenic carbon, [kg C/kg]** |
| Film (PE) | 0.022 | 5.0% | 0 kg C/kg |
| Film (PP) | 0.002 | 0.4% | 0 kg C/kg |
| Cardboard | 0.044 | 10.1% | 0.018 kg C/kg |
| Paper | 0.080 | 18.3% | 0.029 kg C/kg |
| Pallet | 0.028 | 6.4% | 0.014 kg C/kg |
| Total packaging | 0.175 | 40.2% | 0.061 kg C/kg |
| **TOTAL Product with packaging** | **0.437** | **100%** | **0.061 kg C/kg** |

The biogenic carbon content of product and packaging is 0.224 kg $CO_2$ eq. per declared unit.

| Dangerous substances from the candidate list of SVHC for Authorisation | EC No. | CAS No. | Weight-% per functional or declared unit |
|---|---|---|---|
| None | Not applicable | Not applicable | Not applicable |

# Environmental information

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks. According to the EN 15804 standard, the characterization factors of EU-JRC must be applied. The EN 15804 reference package based on EF 3.1. was used for the LCA calculations. The characterization factors are available at the following internet connection: http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml

Disclaimer: The use of the results of modules A1-A3 is discouraged without considering the results of modules C1-C4

### Potential environmental impact – mandatory indicators according to EN 15804

| Results per functional or declared unit | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | Tot. A1-A3 | A5 | C1 | C2 | C3 | C4 | D |
| GWP-fossil | kg $CO_2$ eq. | 1.07E+00 | 7.68E-02 | 0.00E+00 | 1.98E-03 | 6.30E-01 | 0.00E+00 | -3.67E-01 |
| GWP-biogenic | kg $CO_2$ eq. | 1.54E-03 | 1.59E-05 | 0.00E+00 | 6.14E-06 | 2.52E-05 | 0.00E+00 | -1.95E-03 |
| GWP-luluc | kg $CO_2$ eq. | 1.05E-03 | 2.03E-05 | 0.00E+00 | 3.25E-05 | 1.64E-06 | 0.00E+00 | -3.52E-05 |
| GWP-total | kg $CO_2$ eq. | 1.07E+00 | 7.68E-02 | 0.00E+00 | 2.02E-03 | 6.30E-01 | 0.00E+00 | -3.69E-01 |
| ODP | kg CFC 11 eq. | 6.33E-11 | 1.98E-14 | 0.00E+00 | 2.85E-16 | 4.33E-14 | 0.00E+00 | -3.55E-12 |
| AP | mol H+ eq. | 2.41E-03 | 4.12E-05 | 0.00E+00 | 3.41E-06 | 6.65E-05 | 0.00E+00 | -3.83E-04 |
| EP-freshwater | kg P eq. | 4.13E-06 | 9.99E-09 | 0.00E+00 | 8.26E-09 | 9.41E-09 | 0.00E+00 | -6.75E-07 |
| EP-marine | kg N eq. | 6.14E-04 | 1.41E-05 | 0.00E+00 | 1.36E-06 | 1.73E-05 | 0.00E+00 | -1.20E-04 |
| EP-terrestrial | mol N eq. | 6.49E-03 | 1.90E-04 | 0.00E+00 | 1.58E-05 | 3.20E-04 | 0.00E+00 | -1.28E-03 |
| POCP | kg NMVOC eq. | 2.04E-03 | 3.78E-05 | 0.00E+00 | 3.34E-06 | 4.96E-05 | 0.00E+00 | -3.34E-04 |
| ADP-minerals&metals | kg Sb eq. | 1.03E-06 | 3.01E-10 | 0.00E+00 | 1.68E-10 | 4.50E-10 | 0.00E+00 | -3.30E-08 |
| ADP-fossil* | MJ | 2.66E+01 | 5.81E-02 | 0.00E+00 | 2.55E-02 | 9.47E-02 | 0.00E+00 | -6.40E+00 |
| WDP | $m^3$ | 1.28E-01 | 2.08E-02 | 0.00E+00 | 2.99E-05 | 6.07E-02 | 0.00E+00 | -3.50E-02 |
| 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 of these results are high or as there is limited experience with the indicator.

### Potential environmental impact – additional mandatory and voluntary indicators

| Results per functional or declared unit | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | Tot. A1-A3 | A5 | C1 | C2 | C3 | C4 | D |
| GWP-GHG[1] | kg $CO_2$ eq. | 1.07E+00 | 7.68E-02 | 0.00E+00 | 2.01E-03 | 6.30E-01 | 0.00E+00 | -3.67E-01 |
| PM | Disease incidence | ND | ND | ND | ND | ND | ND | ND |
| IR | kBq U235 eq. | ND | ND | ND | ND | ND | ND | ND |
| ETP-fw | CTUe | ND | ND | ND | ND | ND | ND | ND |
| HTP-c | CTUh | ND | ND | ND | ND | ND | ND | ND |
| HTP-nc | CTUh | ND | ND | ND | ND | ND | ND | ND |
| SQP | dimension-less | ND | ND | ND | ND | ND | ND | ND |
| Acronyms | GWP-GHG = 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; PM = Particulate matter emissions; IR = Ionizing radiation, human health; ETP-fw = Eco-toxicity - freshwater; HTP-c = Human toxicity, cancer effect; HTP-nc = Human toxicity, non-cancer effects; SQP = Land use related impacts/Soil quality | | | | | | | |

[1] The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

### Resource use indicators

| Results per functional or declared unit | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1-A3 | A5 | C1 | C2 | C3 | C4 | D |
| PERE | MJ | 4.76E+00 | 1.33E-02 | 0.00E+00 | 2.19E-03 | 2.73E-02 | 0.00E+00 | -2.23E+00 |
| PERM | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PERT | MJ | 4.76E+00 | 1.33E-02 | 0.00E+00 | 2.19E-03 | 2.73E-02 | 0.00E+00 | -2.23E+00 |
| PENRE | MJ | 2.66E+01 | 5.81E-02 | 0.00E+00 | 2.55E-02 | 9.47E-02 | 0.00E+00 | -6.40E+00 |
| PENRM | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PENRT | MJ | 2.66E+01 | 5.81E-02 | 0.00E+00 | 2.55E-02 | 9.47E-02 | 0.00E+00 | -6.40E+00 |
| SM | kg | 9.82E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 4.90E-03 |
| RSF | MJ | 0.00E+00 | 0.00E+00 | 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 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW | $m^3$ | 3.94E-03 | 4.91E-04 | 0.00E+00 | 2.44E-06 | 1.42E-03 | 0.00E+00 | -1.55E-03 |
| 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 | A5 | C1 | C2 | C3 | C4 | D |
| Hazardous waste disposed | kg | 8.95E-05 | 2.58E-11 | 0.00E+00 | 9.75E-13 | 5.68E-11 | 0.00E+00 | -4.63E-09 |
| Non-hazardous waste disposed | kg | 1.40E-02 | 3.90E-03 | 0.00E+00 | 4.16E-06 | 3.21E-03 | 0.00E+00 | -3.40E-03 |
| Radioactive waste disposed | kg | 3.52E-04 | 2.27E-06 | 0.00E+00 | 4.64E-08 | 5.43E-06 | 0.00E+00 | -4.45E-04 |

### Output flow indicators

| Results per functional or declared unit | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1-A3 | A5 | 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 |
| Material for recycling | kg | 4.70E-04 | 4.40E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 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 |
| Exported energy, electricity | MJ | 2.15E-01 | 3.26E-01 | 0.00E+00 | 0.00E+00 | 1.15E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy, thermal | MJ | 4.98E-01 | 5.89E-01 | 0.00E+00 | 0.00E+00 | 2.06E+00 | 0.00E+00 | 0.00E+00 |

# Additional environmental information

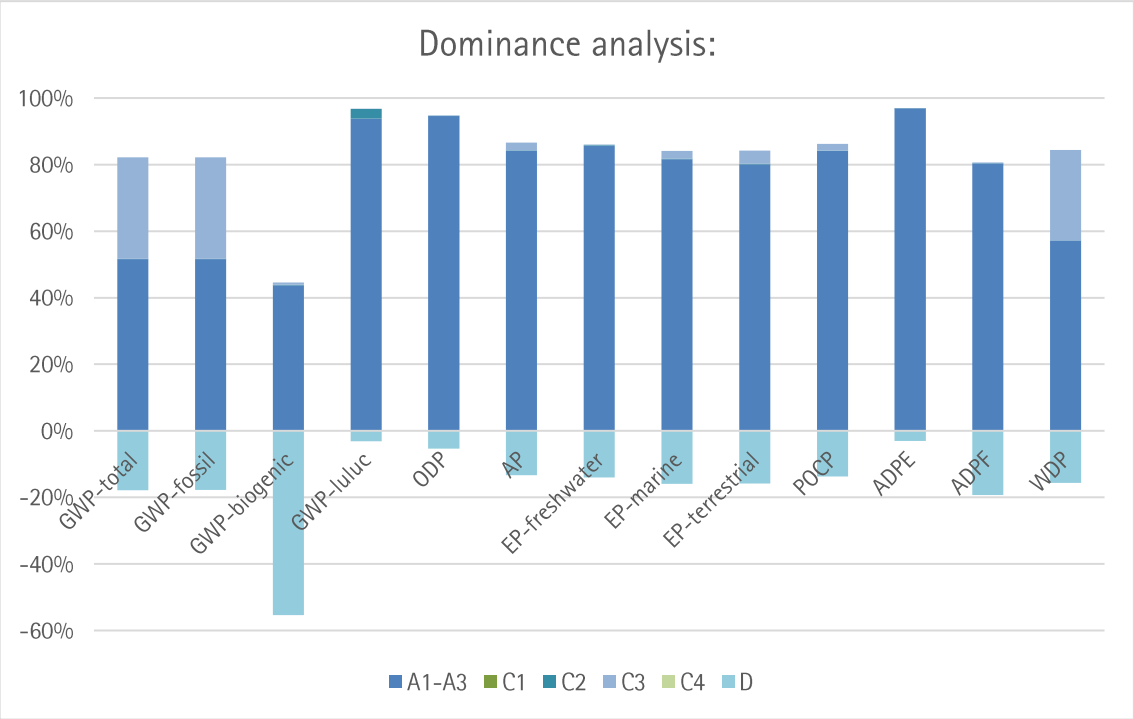
**TRACI Indicators**

The following TRACI indicators v 2.1 were calculated to comply with US Market requirements. The declared specific product complies with the ISO 21930:2017 Standard.

| Results per functional or declared unit | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Indicator | Unit | A1-A3 | A5 | C1 | C2 | C3 | C4 | D |
| Eutrophication | kg N eq. | 1.95E-04 | 2.37E-06 | 0.00E+00 | 3.67E-07 | 3.66E-06 | 0.00E+00 | -3.37E-05 |
| Global Warming Potential, air, excl. biogenic CO2 | kg $CO_2$ eq. | 9.92E-01 | 7.68E-02 | 0.00E+00 | 1.96E-03 | 6.30E-01 | 0.00E+00 | -3.05E-01 |
| Global Warming Potential, air, incl. biogenic CO2 | kg $CO_2$ eq. | 8.02E-01 | 1.87E-01 | 0.00E+00 | 1.91E-03 | 6.30E-01 | 0.00E+00 | -3.05E-01 |
| Ozone Depletion, air | kg CFC 11 eq. | 9.61E-11 | 3.94E-16 | 0.00E+00 | 5.70E-18 | 8.62E-16 | 0.00E+00 | -5.55E-14 |
| Resources, Fossil Fuels | MJ surplus energy | 3.44E+00 | 6.73E-03 | 0.00E+00 | 3.65E-03 | 1.02E-02 | 0.00E+00 | -5.68E-01 |
| Smog Air | kg $O_3$ eq. | 3.45E-02 | 8.60E-04 | 0.00E+00 | 6.49E-05 | 1.04E-03 | 0.00E+00 | -5.85E-03 |
| Acidification | kg $SO_2$ eq. | 2.04E-03 | 3.65E-05 | 0.00E+00 | 3.04E-06 | 5.32E-05 | 0.00E+00 | -3.43E-04 |
| Ecotoxicity | CTUe | 1.50E-01 | 1.84E-04 | 0.00E+00 | 1.84E-04 | 1.57E-04 | 0.00E+00 | -1.10E-03 |
| Human Health Particu-late Air | kg PM2.5 eq | 1.22E-04 | 1.10E-06 | 0.00E+00 | 1.29E-07 | 1.51E-06 | 0.00E+00 | -1.58E-05 |
| Human toxicity, cancer | CTUh | 9.59E-10 | 3.00E-12 | 0.00E+00 | 1.11E-12 | 5.33E-12 | 0.00E+00 | -1.26E-10 |
| Human toxicity, non-canc. | CTUh | 8.43E-08 | 2.13E-10 | 0.00E+00 | 1.80E-10 | 1.69E-10 | 0.00E+00 | -4.24E-09 |

# Interpretation

The following dominance analysis show the individual impact categories and explore them in depth.




The environmental impacts were analysed using the example of global warming potential (GWP total) to identify the responsible sources along the life cycle. Modules A1-A3 (59.7%) has dominant influence followed by Module C3 (35.2%) on GWP total and fossil. The main source of GWP impact is the production of the specialised adhesives found in the product. The production of adhesives causes the highest environmental impact in all main categories, only surpassed in the GWP-luluc by the production of cardboard packaging.
Transportation of raw materials to and between the manufacturing sites (A2) and disposal transportation of the product in EoL (C2) are not very relevant in terms of GWP total.
The incineration of the adhesives at End-of-Life in Module C3 is the second highest contributor of GWP-fossil and WPD.

The data quality of the relevant generic datasets used is classified as very good, good or satisfactory. Relevant data sets are defined as data sets that together account for at least 80% of the absolute impact of each core indicator included in the EPD across the declared modules except for Module D.

The variation of the environmental impact indicator results for modules A to C between the included products is 0%.

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# Version history

Version 1, 2024-12-06

- Original Version of the EPD

Version 2, 2026-10-01

- Differences versus the previously published version: Correction to the section "Name and location of production site(s)".

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