

# Environmental Product Declaration

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

## High Performance Coatings

from **ALCHIMICA S.A.**

Products included in the EPD:

**HYPERDESMO® ADY**

**HYPERDESMO® ADY-610**

**HYPERDESMO® ADY-610 ZERO**

**HYPERDESMO® ADY-810**

**HYPERDESMO® ADY-E pigmented**

**HYPERDESMO® ADY-E transparent**

**HYPERDESMO® ADY-PU 1K SL**

**HYPERDESMO® ADY-500**

**HYPERDESMO® 300**

**HYPERDESMO® T**

**HYPERDESMO® T-FILLER**

**HYPERDESMO® T-VERTICAL**

EPD of multiple products, based on the average results of the product group



|                          |                                                                                          |
|--------------------------|------------------------------------------------------------------------------------------|
| Programme:               | The International EPD System, <a href="http://www.environdec.com">www.environdec.com</a> |
| Programme operator:      | EPD International AB                                                                     |
| EPD registration number: | EPD-IES-0031539:001                                                                      |
| Version date:            | 2026-04-29                                                                               |
| Validity date:           | 2031-04-29                                                                               |

*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](http://www.environdec.com)*

## GENERAL INFORMATION

| Programme Information |                                                                     |
|-----------------------|---------------------------------------------------------------------|
| <b>Programme:</b>     | The International EPD® System                                       |
| <b>Address:</b>       | EPD International AB<br>Box 210 60<br>SE-100 31 Stockholm<br>Sweden |
| <b>Website:</b>       | <a href="http://www.environdec.com">www.environdec.com</a>          |
| <b>E-mail:</b>        | <a href="mailto:support@environdec.com">support@environdec.com</a>  |

| Product Category Rules (PCR)                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CEN standard EN 15804 serves as the Core Product Category Rules (PCR)                                                                                                                                                                                                                                     |
| <b>Product Category Rules (PCR):</b> PCR 2019:14 Construction products, version 2.0.1, CPC code: 351 Paints, varnishes and other related products.                                                                                                                                                        |
| <b>PCR review was conducted by:</b> The technical Committee of the International EPD System. A full list of members is available on <a href="http://www.environdec.com">www.environdec.com</a> . The review panel may be contacted via <a href="mailto:support@environdec.com">support@environdec.com</a> |

| Third-party Verification                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:                                                                                                                                                                                                                                       |
| <input checked="" type="checkbox"/> <b>Individual EPD verification without a pre-verified LCA/EPD tool</b><br>Third-party verifier: Business Quality Verification P.C.                                                                                                                                                                    |
| <br>Address: 5, Konitsis Street, GR 15125, Marousi, Attica / Greece<br><a href="http://www.bqv.gr">www.bqv.gr</a> – <a href="mailto:info@bqv.gr">info@bqv.gr</a><br>Accredited by: Hellenic Accreditation System (ESYD) with accreditation number 1218 |
| Procedure for follow-up of data during EPD validity involves third party verifier:                                                                                                                                                                                                                                                        |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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: ALCHIMICA S.A.

Production site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Contact: [alchimica@alchimica.com](mailto:alchimica@alchimica.com)

### Description of the organisation:

ALCHIMICA S.A. is a manufacturer of advanced construction chemicals, with over 40 years of expertise in the design, formulation, and production of high-performance systems for waterproofing, concrete repair, structural protection, ETICS and industrial flooring. Serving both new construction and renovation markets, our solutions are specified in projects ranging from residential developments to complex infrastructure works across more than 100 countries.

With a production capacity exceeding 40,000 tons annually, ALCHIMICA operates three fully owned manufacturing facilities with a total footprint of 55,000 m<sup>2</sup>. These include state-of-the-art dedicated units for resin-based and liquid-applied systems, alongside automated lines for polyurethane sealants and cement-based mortars. Every batch is monitored through integrated quality control protocols, ensuring consistency, traceability, and full compliance with applicable technical standards.

Our in-house R&D center plays a central role in product innovation, staffed by a multidisciplinary team of chemists and engineers. Close collaboration between R&D, production, and technical support ensures rapid development cycles and the ability to tailor solutions to market-specific demands. The result is a large portfolio of CE-marked products and systems that meet the latest regulatory and performance requirements in diverse climates and applications.

ALCHIMICA's range includes:

- Liquid-Applied Polyurethane Waterproofing Membranes
- Polyurethane Sealing Technologies
- Cementitious Mortars for Concrete Repairs
- High-Performance Cementitious Waterproofing Mortars
- ETICS Systems
- Tile Adhesives
- Industrial Flooring Systems

Certified under ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018, our operations reflect a structured commitment to quality, environmental stewardship, and occupational safety. Sustainability is embedded in our manufacturing and R&D processes, with a focus on long-lasting systems that reduce resource use and lifecycle impacts. We actively pursue the development of low-emission, user-safe formulations that support healthier environments and align with modern green building standards.

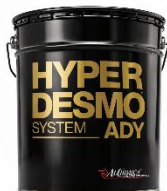
Through energy-efficient production, waste minimization, and responsible sourcing, ALCHIMICA aims to reduce its environmental footprint while delivering reliable, high-performance solutions that contribute to the long-term resilience of the built environment.

A defining element of ALCHIMICA's approach is the technical support provided alongside its products. From initial specification to on-site application, our teams assist professionals with product selection, detailing, and installation training—ensuring both correct use and long-term performance. We are not simply suppliers, but long-term partners to the construction industry—offering proven solutions, industrial capability, and a legacy of performance.

## Product information

Product name: **HYPERDESMO®-ADY**

Product identification: **HYPERDESMO®-ADY** is a transparent aliphatic polyurethane membrane for waterproofing and protection of construction materials and surfaces.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-ADY is a one-component, fully aliphatic polyurethane liquid membrane designed for transparent waterproofing and protection of construction substrates. It cures with ambient humidity to form a seamless, elastic, and hydrophobic coating with uniform adhesion across the entire surface, maintaining transparency and resistance to yellowing under UV exposure.

The membrane provides excellent mechanical strength, chemical resistance, and thermal stability, while maintaining elasticity across a wide temperature range. It exhibits strong adhesion to various substrates, including metals, wood, concrete, and mineral surfaces, ensuring durable protection in both architectural and industrial applications.

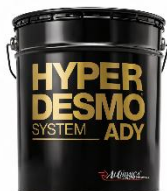
Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, HYPERDESMO®-ADY ensures consistent quality and long-term reliability in transparent waterproofing and protective coating systems.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® ADY-610**

Product identification: **HYPERDESMO®ADY-610** is an aliphatic polyurethane membrane for UV-stable waterproofing of roofs and exposed surfaces.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-ADY 610 is a one-component, fully aliphatic polyurethane waterproofing membrane designed for exposed applications requiring high UV stability and long-term aesthetic performance. It cures with ambient humidity to form a seamless, highly elastic, and non-yellowing membrane with a

smooth, self-leveling finish. Its formulation allows single-coat application, reducing system complexity while ensuring consistent film formation.

The membrane provides excellent mechanical performance, including high tensile strength and elongation, along with strong resistance to UV radiation, chemicals, and hydrolysis. It maintains elasticity down to -40°C and demonstrates long-term durability under thermal and environmental stress. Its hydrophobic nature and adhesion to a wide range of substrates ensure reliable waterproofing performance in exposed conditions.

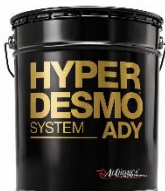
HYPERDESMO®-ADY 610 is CE-certified under EN 1504-2 and ETA-24/0746 according to EAD 030350-00-0402 for liquid-applied roof waterproofing systems. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and long-term reliability in roofing and exposed waterproofing applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® ADY-610 ZERO**

Product identification: **HYPERDESMO® ADY-610 ZERO** is 100% solids aliphatic polyurethane membrane for zero-VOC waterproofing of roofs and exposed surfaces.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-ADY 610 ZERO is a one-component, 100% solids, fully aliphatic polyurethane waterproofing membrane designed for high-performance applications requiring zero VOC emissions and long-term UV stability. It cures with ambient humidity to form a seamless, highly elastic, and hydrophobic coating with excellent mechanical strength and no shrinkage. The solvent-free formulation ensures safe application and environmental compliance while maintaining superior durability.

The membrane provides excellent adhesion to a wide range of substrates, high resistance to mechanical stress, and long-term flexibility even at low temperatures. It exhibits strong UV resistance without yellowing, as well as water vapor permeability that prevents moisture accumulation beneath the coating. Its robust mechanical properties and non-toxic behavior after curing make it suitable for demanding waterproofing applications, including trafficable systems.

HYPERDESMO®-ADY 610 ZERO is CE-certified under EN 1504-2 and complies with SCAQMD Rule 1113 and LEED v4.1 VOC requirements. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and long-term reliability in exposed waterproofing systems for roofs, metal substrates, and car park applications.

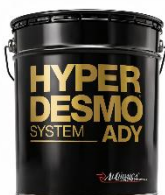
Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred

to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® ADY-810**

Product identification: **HYPERDESMO® ADY-810** is an aliphatic polyurethane topcoat for UV-stable waterproofing systems in exposed and traffic-bearing applications.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-ADY 810 is a one-component, heavy-duty fully aliphatic polyurethane waterproofing and protection coating designed for exposed applications requiring high resistance to UV radiation and mechanical stress. It is applied as a seamless, self-leveling membrane that cures with ambient humidity, forming a bubble-free, highly durable surface suitable for heavy-duty environments such as traffic decks and car parks. Its formulation ensures excellent colour stability and long-term performance under direct sunlight exposure.

The membrane provides outstanding abrasion and scratch resistance, high tensile strength, and excellent resistance to chemicals and hydrolysis. It exhibits strong adhesion to polyurethane systems, particularly HYPERDESMO® CLASSIC, and maintains elasticity across a wide temperature range. Its rheological profile allows consistent application under varying climatic conditions, ensuring reliable film formation and performance.

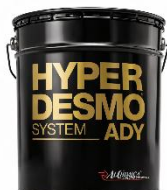
HYPERDESMO®-ADY 810 is CE-certified under EN 1504-2 (2928-CPR-111) as part of the HYPERDESMO® system. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and long-term durability in exposed waterproofing systems for roofs, decks, and infrastructure applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® ADY-E pigmented**

Product identification: **HYPERDESMO® ADY-E pigmented** is a pigmented aliphatic polyurethane topcoat for UV-stable waterproofing systems and protective coatings.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-ADY-E is a one-component, fully aliphatic polyurethane topcoat enhanced with inorganic fillers to provide high opacity and efficient coverage in protective waterproofing systems. It cures with ambient humidity to form a seamless, elastic membrane with strong adhesion and uniform surface appearance, suitable for exposed applications requiring UV stability and colour retention.

The coating offers excellent mechanical properties, including abrasion resistance, tensile strength, and elasticity over a wide temperature range. Its optimized formulation allows high hiding power, often achieving full coverage in a single coat, reducing material consumption while maintaining durability. It provides strong resistance to chemicals, environmental exposure, and thermal stresses, ensuring long-term performance.

HYPERDESMO®-ADY-E is CE-certified as part of the HYPERDESMO® system for surface protection.

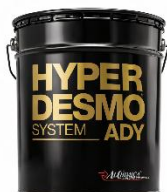
Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and performance in exposed waterproofing and flooring applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® ADY-E transparent**

Product identification: **HYPERDESMO® ADY-E** is a transparent aliphatic polyurethane topcoat for UV-stable protection of waterproofing systems and substrates.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-ADY-E (Transparent) is a one-component, fully aliphatic polyurethane coating designed for transparent protection of waterproofing systems and construction substrates. It cures with ambient humidity to form a seamless, elastic, and highly hydrophobic membrane, maintaining full transparency without yellowing under prolonged UV exposure.

The membrane provides excellent mechanical performance, including high tensile strength and abrasion resistance, combined with strong chemical and hydrolytic resistance. It maintains elasticity even at low temperatures and demonstrates long-term durability against environmental exposure. Its low-viscosity formulation ensures uniform adhesion and easy application across a wide range of substrates, including polyurethane coatings, concrete, and synthetic surfaces.

Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, HYPERDESMO®-ADY-E (Transparent) ensures reliable performance as a protective topcoat where preservation of substrate appearance and UV stability are required.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® ADY-PU 1K SL**

Product identification: **HYPERDESMO® ADY-PU 1K SL** is an aliphatic polyurethane binder for stone carpet systems and permeable decorative surfaces.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-ADY-PU 1K SL is a one-component, solvent-free, fully aliphatic polyurethane resin designed as a high-performance binder for natural and synthetic aggregates. It forms a durable, non-yellowing matrix that cures with ambient conditions, enabling the creation of permeable and mechanically resistant stone carpet systems.

The material exhibits excellent mechanical strength, including high tensile and abrasion resistance, along with outstanding resistance to chemicals and hydrolysis. Its 100% solids composition ensures low emissions and consistent performance, while maintaining stability under thermal and environmental exposure. The cured system provides long-term durability and structural integrity within decorative and functional surfacing systems.

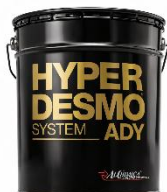
Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, HYPERDESMO®-ADY-PU 1K SL ensures reliable performance in stone carpet and drainage applications where UV stability and mechanical durability are required.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® ADY-500**

Product identification: **HYPERDESMO® ADY-500** is an aliphatic polyurethane topcoat for UV protection and durability of waterproofing systems.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-ADY 500 is a one-component, fully aliphatic polyurethane topcoat designed for UV protection and long-term durability of waterproofing systems. It cures with ambient humidity to form a tough, elastic, and non-yellowing membrane incorporating inorganic fillers for enhanced mechanical, chemical, and environmental resistance.

The coating provides excellent UV stability and colour retention, even under prolonged exposure to sunlight and in dark shades. It exhibits strong mechanical properties, including high elasticity and tensile strength, as well as resistance to chemicals and hydrolysis. Its hydrophobic nature ensures reliable surface protection while maintaining performance under varying environmental conditions.

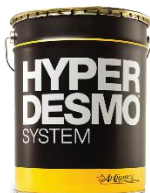
HYPERDESMO®-ADY 500 is CE-certified under EN 1504-2 as a surface protection coating. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and long-term reliability as a protective topcoat within polyurethane waterproofing systems.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® 300**

Product identification: **HYPERDESMO® 300** is a polyurethane/polyurea membrane for heavy-duty waterproofing of bridge decks, tanks, and chemically exposed structures.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-300 is a single-component, polyurethane/polyurea liquid membrane designed for heavy-duty waterproofing applications requiring exceptional chemical and mechanical resistance, developed especially for bridge decks. It cures with ambient humidity to form a seamless, highly elastic and abrasion-resistant membrane, capable of withstanding demanding service conditions such as bridge decks and chemically exposed environments.

The membrane exhibits excellent crack-bridging ability across a wide temperature range, maintaining elasticity down to  $-40^{\circ}\text{C}$  and resistance to high temperatures exceeding  $80^{\circ}\text{C}$ , with short-term exposure up to  $220^{\circ}\text{C}$ . Its thixotropic rheology allows application on vertical and complex surfaces without sagging, while its resistance to petrochemicals, chlorine, and salts ensures durability in aggressive environments. HYPERDESMO®-300 is certified according to EAD 030675-00-0107 for bridge deck waterproofing systems. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and long-term performance in infrastructure, industrial, and high-stress waterproofing applications.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® T**

Product identification: **HYPERDESMO® T** is a transparent aliphatic polyurethane membrane for waterproofing and protection of exposed substrates and high performance stone carpet binder.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-T is a one-component, high-solids, fully aliphatic polyurethane liquid membrane designed for transparent waterproofing and protection of various construction substrates and uses as a stone carpet binder. It cures with ambient humidity to form a seamless, elastic, and highly hydrophobic membrane with excellent resistance to UV radiation without discoloration.

The membrane provides strong mechanical performance, including high elasticity and tensile strength, while maintaining flexibility at temperatures down to  $-40^{\circ}\text{C}$ . It offers good chemical resistance, water vapour permeability, and thermal stability, ensuring long-term durability in exposed environments. Its formulation allows application in uniform, bubble-free layers, even in relatively thick coatings.

Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, HYPERDESMO®-T ensures reliable performance in waterproofing and protection of tiles, natural stone, wood, concrete, terraces, and similar substrates, while performing exceptionally as a stone carpet binder.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® T-FILLER**

Product identification: **HYPERDESMO® T-FILLER** is a thixotropic aliphatic polyurethane membrane for gap filling, vertical applications, and complex waterproofing details for stone carpets..



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-T FILLER is a one-component, thixotropic, fully aliphatic polyurethane membrane designed for applications requiring controlled rheology and gap-filling capability for stone carpets. Based on HYPERDESMO®-T technology, it cures with ambient humidity to form a seamless, elastic, and UV-stable membrane suitable for vertical and complex geometries.

The material combines excellent mechanical strength, elasticity, and chemical resistance with enhanced thixotropy, enabling application on inclined or irregular surfaces without sagging. It maintains performance under thermal stress and environmental exposure while forming a bubble-free coating even in thicker applications.

Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, HYPERDESMO®-T FILLER ensures reliable performance in marble stone carpet systems, joint filling, and protective coatings for complex construction details.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® T-VERTICAL**

Product identification: **HYPERDESMO® T-VERTICAL** is a thixotropic aliphatic polyurethane membrane for vertical stone carpet applications, gap filling, and complex surface applications.



UN CPC code: 351 Paints, varnishes and other related products

Product description:

HYPERDESMO®-T VERTICAL is a one-component, fully aliphatic, thixotropic polyurethane liquid membrane designed for vertical stone carpet applications. Based on HYPERDESMO®-T technology with modified rheology, it cures with ambient humidity to form a seamless, elastic, and transparent membrane that does not yellow under UV exposure. Its controlled thixotropy allows application of stone carpets on inclined or vertical surfaces without sagging.

The membrane provides excellent mechanical strength, chemical resistance, and thermal stability, maintaining elasticity down to -40°C and resistance to elevated temperatures up to 80°C, with short-term exposure up to 200°C. It exhibits water vapor permeability and strong adhesion to a wide range of substrates, enabling durable performance in demanding environmental conditions and complex geometries.

Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, HYPERDESMO®-T VERTICAL ensures consistent quality and long-term reliability in vertical waterproofing, sealing, and stone carpet systems.

Brief description of main processes of manufacturing: The manufacturing process begins with the accurate weighing of raw materials to ensure the correct formulation. The materials are then transferred to the mixing units, where they are thoroughly stirred. The duration of the mixing stage is adjusted according to the specific characteristics of the product. Parameters such as mixing speed and temperature are carefully controlled to optimize the process.

Location of manufacturing site: 69<sup>th</sup> km Athens-Lamia National Road, 341 00

| TECHNICAL SPECIFICATIONS            |                       |                               |                             |                          |                               |
|-------------------------------------|-----------------------|-------------------------------|-----------------------------|--------------------------|-------------------------------|
| PROPERTY                            | HYPERDESMO® ADY       | HYPERDESMO® ADY-E transparent | HYPERDESMO® ADY-E pigmented | HYPERDESMO® ADY-PU 1K SL | Method                        |
| Hardness                            | 60 Shore D            | 40 Shore D                    | 40 Shore D                  | 60 Shore D               | ASTM D2240/DIN 53505/ISO R868 |
| Tensile strength at break (at 23°C) | >25 N/mm <sup>2</sup> | >20 N/mm <sup>2</sup>         | >20 N/mm <sup>2</sup>       | -                        | ASTM D412/EN ISO-527-3        |
| Elongation (at 23°C)                | >50 %                 | >250 %                        | >250 %                      | >100 %                   | ASTM D412/EN ISO-527-3        |

| TECHNICAL SPECIFICATIONS            |                       |                       |                        |                      |                               |
|-------------------------------------|-----------------------|-----------------------|------------------------|----------------------|-------------------------------|
| PROPERTY                            | HYPERDESMO® T         | HYPERDESMO® T-FILLER  | HYPERDESMO® T-VERTICAL | HYPERDESMO® 300      | Method                        |
| Hardness                            | 40 Shore D            | 40 Shore D            | 40 Shore D             | 80 Shore A           | ASTM D2240/DIN 53505/ISO R868 |
| Tensile strength at break (at 23°C) | >25 N/mm <sup>2</sup> | >15 N/mm <sup>2</sup> | >15 N/mm <sup>2</sup>  | >7 N/mm <sup>2</sup> | ASTM D412/EN ISO-527-3        |
| Elongation (at 23°C)                | >300 %                | >300 %                | >300 %                 | >250 %               | ASTM D412/EN ISO-527-3        |

| TECHNICAL SPECIFICATIONS            |                       |                      |                          |                       |                               |
|-------------------------------------|-----------------------|----------------------|--------------------------|-----------------------|-------------------------------|
| PROPERTY                            | HYPERDESMO® ADY-500   | HYPERDESMO® ADY-610  | HYPERDESMO® ADY-610 ZERO | HYPERDESMO® ADY-810   | Method                        |
| Hardness                            | 75 Shore A            | 80 Shore A           | 65 Shore A               | 95 Shore A            | ASTM D2240/DIN 53505/ISO R868 |
| Tensile strength at break (at 23°C) | >10 N/mm <sup>2</sup> | >9 N/mm <sup>2</sup> | >4 N/mm <sup>2</sup>     | >20 N/mm <sup>2</sup> | ASTM D412/EN ISO-527-3        |
| Elongation (at 23°C)                | >500 %                | >600 %               | >350 %                   | >300 %                | ASTM D412/EN ISO-527-3        |

## Content declaration

It is an EPD of multiple products, based on the average results of the product group.

The average environmental impacts presented in this EPD represent a weighted average based on the production volumes of the individual products included.

Declared unit: 1 kilogram (kg) of an average high performance coating.

The composition of the product is expressed in mass (%) per declared unit.

The content declaration below represents a weighted average content declaration based on the production volumes of the individual products included.

| Product content | Weight, kg | Range, kg |          | Post-consumer recycled material, mass-% of product |
|-----------------|------------|-----------|----------|----------------------------------------------------|
| PU-Prepolymer   | 4.57E-01   | 2.80E-01  | 9.97E-01 | 0                                                  |
| Fillers         | 2.37E-01   | 0.00E+00  | 5.00E-01 | 0                                                  |
| Solvent         | 2.23E-01   | 7.00E-02  | 4.95E-01 | 0                                                  |
| Additives       | 8.28E-02   | 3.00E-03  | 2.60E-01 | 0                                                  |

| Packaging materials    | Mass-kg (per declared unit) | Mass-% (versus the product) |
|------------------------|-----------------------------|-----------------------------|
| Steel bucket           | 7.84E-02                    | <8%                         |
| Cardboard box          | 5.57E-03                    | <0.6%                       |
| Polyethylene LDPE film | 9.06E-04                    | <0.1%                       |
| Wood (pallets)         | 1.95E-02                    | <2%                         |

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO<sub>2</sub>.

No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH Regulations that exceed 0.1% of the total weight are present in the final product.

| Carbon electricity intensity |                                                      |
|------------------------------|------------------------------------------------------|
| Environmental effects        | CO <sub>2</sub> Emissions (Kg CO <sub>2</sub> /KWh)* |
| <b>0.12</b>                  |                                                      |

\* Residual Greek Mix: **DAPEEP Report 2024** In accordance with section 1.4 of PCR 2019: 14 "Construction Products" version 2.0.1, it is required to disclose the climate impact (measured in kilograms of CO<sub>2</sub> eq. per kilowatt-hour (kWh) using the GWP-GHG indicator) associated with the electricity acquisition during the manufacturing process in A3.

## LCA information

Declared unit: 1 kilogram (kg) of an average high performance coating.

Time representativeness: The data used for the analysis refer to the year 2025

Geographical scope: Global

Database(s) and LCA software used: Ecoinvent database v.3.11, OpenLCA v.2.6 software

Characterization factors (JRC): Based on Reference package EF 3.1

Production of infrastructure and capital goods are excluded from the study.

Description of system boundaries: The system boundaries are cradle to gate (A1-A3) with modules C1-C4 and module D.

### A1: Raw Material Supply

Production begins with the supply of materials, which includes the manufacture of essential raw components.

### A2: Transportation of raw materials to manufacturer

Transportation stage is relevant to delivery of raw materials from the supplier to the gate of manufacturing plant. Raw materials are transported by trucks or by ships from different suppliers in Europe and Asia. It is assumed that a EURO5, 16-32 tonne lorry is used for road transportation and a container ship for sea transportation.

### A3: Manufacturing

The process commences with the weighing of the raw materials. Subsequently, the materials are transferred to the mixing units, where they are stirred to achieve homogenization. The duration of this mixing stage is determined according to the specific characteristics of the product.



Concerning **electricity** mix, the national residual energy mix (2024) as published in DAPEEP SA was used.

### C1: De-construction, demolition

Demolition of high performance coatings takes place with the whole demolition of the building/ construction. Thus, it is assumed that the energy used for the demolition of high performance coatings has minor significance and the environmental impact of this module is set to be zero.

### C2: Transportation of waste

A distance of 100 km by a 16-32 tonne lorry from construction/demolition sites to disposal sites has been chosen as an assumption.

### C3: Waste processing for re-use, recovery and/or recycling

This module includes waste processing of the product after its life cycle in order to be recycled and reused in another product system. It is assumed that 100% of the end-of-life waste of high performance coatings will be landfilled and the environmental impact of this module is set to be zero.

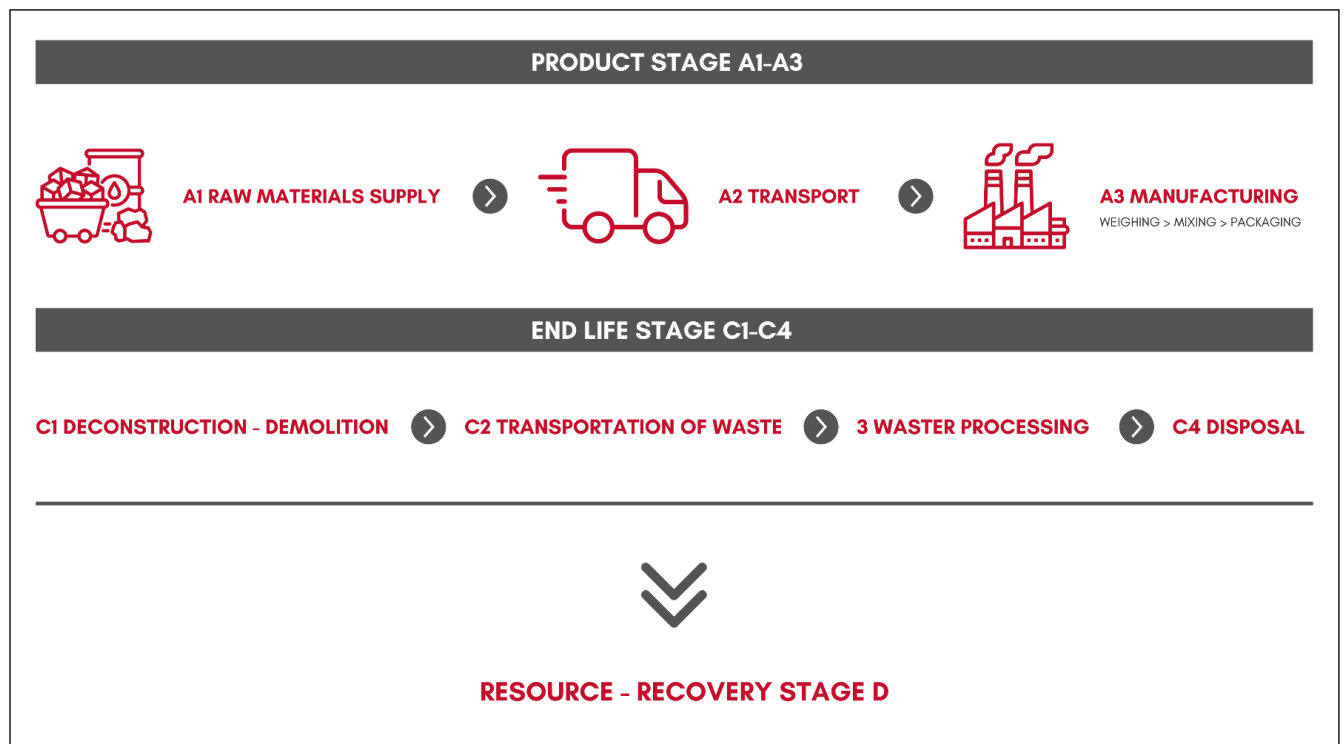
### C4: Disposal

This module includes the final disposal of the discarded product. As mentioned above, 100% of the end-of-life waste of high performance coatings will be landfilled.

### D: Resource-Recovery stage

Since the product is only disposed of, there are no benefits deriving from the re-use or recycling of the product after its end-of-life stage

System diagram:



### Additional LCA information

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       |           |               | Distribution/<br>installation<br>stage |                           | Use stage |             |        |             |               |                        |                       | End of life stage          |           |                  |          | Beyond<br>product<br>life cycle        |
|-----------------------|---------------------|-----------|---------------|----------------------------------------|---------------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|----------------------------------------|
|                       | 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-<br>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                                     | ND                        | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | x                          | x         | x                | x        | x                                      |
| Geography             | GLOBAL              |           | GR            | -                                      | -                         | -         | -           | -      | -           | -             | -                      | -                     | EU                         | EU        | EU               | EU       | EU                                     |
| Share of primary data | 11.93%              |           |               |                                        |                           | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                      |
| Variation – products  | 45.2%               |           |               |                                        |                           | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                      |
| Variation – sites     | 0%                  |           |               |                                        |                           | -         | -           | -      | -           | -             | -                      | -                     | -                          | -         | -                | -        | -                                      |

X=included, ND=Module Not Declared

## Description of data quality assessment and reference years

All primary data used for Modules A2 and A3 were provided directly by Alchimica and refer to actual operations carried out in the year 2025. These data were collected from the company's internal records.

Generic data were obtained using the OpenLCA v2.6 software, with datasets sourced from the Ecoinvent v3.11 database.

### **Data Quality Information according to EN 15941:2024**

**Period of Data Collection:** 01/01/2025 – 31/12/2025

**Geography:** Greece, production site located at 69<sup>th</sup> km Athens-Lamia National Road, 341 00

**Market scope:** Global market

**Technology:** Production includes weighing, mixing and packaging operations using electric energy and diesel forklifts. All production steps and equipment are located within the same facility.

**Completeness:** The datasets cover all relevant processes from raw material acquisition, production, packaging, and energy use.

No significant processes were excluded.

**LCI/LCA database:** Ecoinvent v3.11 database

**Primary data:** Company's internal records for all production operations in 2025.

**Secondary data:** Generic datasets from Ecoinvent v3.11 used for energy, raw materials, packaging, waste and transport.

### **Share of primary data, of GWP-GHG results for A1-A3**

| Process                                                          | Source type | Source              | Reference year | Data category | Share of primary data, of GWP-GHG results for A1-A3 |
|------------------------------------------------------------------|-------------|---------------------|----------------|---------------|-----------------------------------------------------|
| Production of polyols                                            | Database    | Ecoinvent v3.11     | 2024           | Generic data  | 0.00%                                               |
| Production of isocyanate                                         | Database    | Ecoinvent v3.11     | 2024           | Generic data  | 0.00%                                               |
| Production of organic intermediate                               | Database    | Ecoinvent v3.11     | 2024           | Generic data  | 0.00%                                               |
| Production of solvent                                            | Database    | Ecoinvent v3.11     | 2024           | Generic data  | 0.00%                                               |
| Transport of raw materials & packaging                           | Database    | Ecoinvent v3.11     | 2024           | Primary data  | 11.77%                                              |
| Generation of electricity used in manufacturing of product       | DAPEEP SA   | Residual energy mix | 2024           | Primary data  | 0.16%                                               |
| <b>Total share of primary data, of GWP-GHG results for A1-A3</b> |             |                     |                |               | <b>11.93%</b>                                       |

The reported share of primary data is associated with uncertainty, as an EPD used as data source lack information on the share of primary data.

## Environmental performance

### Mandatory impact category indicators according to EN 15804

| Indicator            | Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A1-A3    | C1       | C2       | C3       | C4       | D        |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|
| GWP-total            | kg CO <sub>2</sub> eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3.92E+00 | 0.00E+00 | 1.94E-02 | 0.00E+00 | 6.26E-03 | 0.00E+00 |
| GWP-fossil           | kg CO <sub>2</sub> eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3.90E+00 | 0.00E+00 | 1.94E-02 | 0.00E+00 | 6.25E-03 | 0.00E+00 |
| GWP-biogenic         | kg CO <sub>2</sub> eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4.59E-03 | 0.00E+00 | 3.36E-06 | 0.00E+00 | 1.69E-06 | 0.00E+00 |
| GWP-luluc            | kg CO <sub>2</sub> eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1.64E-02 | 0.00E+00 | 6.33E-06 | 0.00E+00 | 3.22E-06 | 0.00E+00 |
| ODP                  | kg CFC 11 eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.17E-07 | 0.00E+00 | 3.85E-10 | 0.00E+00 | 1.81E-10 | 0.00E+00 |
| AP                   | mol H <sup>+</sup> eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2.46E-02 | 0.00E+00 | 6.06E-05 | 0.00E+00 | 4.43E-05 | 0.00E+00 |
| EP-freshwater        | kg P eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1.11E-03 | 0.00E+00 | 1.29E-06 | 0.00E+00 | 5.17E-07 | 0.00E+00 |
| EP-marine            | kg N eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4.90E-03 | 0.00E+00 | 2.04E-05 | 0.00E+00 | 1.69E-05 | 0.00E+00 |
| EP-terrestrial       | mol N eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5.51E-02 | 0.00E+00 | 2.22E-04 | 0.00E+00 | 1.84E-04 | 0.00E+00 |
| POCP                 | kg NMVOC eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1.64E-02 | 0.00E+00 | 9.49E-05 | 0.00E+00 | 6.60E-05 | 0.00E+00 |
| ADP-minerals&metals* | kg Sb eq.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5.63E-05 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| ADP-fossil*          | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 7.62E+01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| WDP*                 | m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.66E+00 | 0.00E+00 | 1.31E-03 | 0.00E+00 | 4.29E-04 | 0.00E+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 |          |          |          |          |          |          |

\* 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.

### Additional mandatory and voluntary impact category indicators

| Indicator                                                                                                                        | Unit                   | A1-A3    | C1       | C2       | C3       | C4       | D        |
|----------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|----------|----------|----------|----------|----------|
| GWP-GHG <sup>1</sup>                                                                                                             | kg CO <sub>2</sub> eq. | 3.92E+00 | 0.00E+00 | 1.94E-02 | 0.00E+00 | 6.26E-03 | 0.00E+00 |
| Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017 |                        |          |          |          |          |          |          |

<sup>1</sup> 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<sub>2</sub> is set to zero.

## Resource use indicators

| Indicator | Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | A1-A3    | C1       | C2       | C3       | C4       | D        |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|
| PERE      | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6.34E+00 | 0.00E+00 | 4.61E-01 | 0.00E+00 | 1.42E-03 | 0.00E+00 |
| PERM      | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| PERT      | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6.34E+00 | 0.00E+00 | 4.61E-03 | 0.00E+00 | 1.42E-03 | 0.00E+00 |
| PENRE     | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7.63E+01 | 0.00E+00 | 2.47E-01 | 0.00E+00 | 1.39E-01 | 0.00E+00 |
| PENRM     | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.00E+00 | 0.00E+00 | 2.53E-02 | 0.00E+00 | 1.47E-02 | 0.00E+00 |
| PENRT     | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7.63E+01 | 0.00E+00 | 2.72E-01 | 0.00E+00 | 1.53E-01 | 0.00E+00 |
| SM        | kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4.43E-01 | 0.00E+00 | 3.07E-04 | 0.00E+00 | 7.16E-05 | 0.00E+00 |
| RSF       | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1.38E-01 | 0.00E+00 | 8.59E-05 | 0.00E+00 | 1.47E-05 | 0.00E+00 |
| NRSF      | MJ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| FW        | m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4.03E-02 | 0.00E+00 | 3.61E-05 | 0.00E+00 | 1.59E-04 | 0.00E+00 |
| Acronyms  | PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials;<br>PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable<br>primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary<br>energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw<br>materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material;<br>RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh<br>water |          |          |          |          |          |          |

## Waste indicators

| Indicator | Unit | A1-A3    | C1       | C2       | C3       | C4       | D        |
|-----------|------|----------|----------|----------|----------|----------|----------|
| HWD       | kg   | 2.23E-01 | 0.00E+00 | 2.66E-04 | 0.00E+00 | 1.14E-04 | 0.00E+00 |
| NHWD      | kg   | 5.60E+00 | 0.00E+00 | 2.95E-03 | 0.00E+00 | 1.66E-03 | 0.00E+00 |
| RWD       | kg   | 8.19E-05 | 0.00E+00 | 8.66E-08 | 0.00E+00 | 2.38E-08 | 0.00E+00 |

## Output flow indicators

| Indicator | Unit | A1-A3    | C1       | C2       | C3       | C4       | D        |
|-----------|------|----------|----------|----------|----------|----------|----------|
| CRU       | kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| MFR       | kg   | 4.11E-01 | 0.00E+00 | 2.78E-04 | 0.00E+00 | 5.91E-05 | 0.00E+00 |
| MER       | kg   | 0.00E+00 | 0.00E+00 | 3.86E-08 | 0.00E+00 | 6.62E-09 | 0.00E+00 |
| EEE       | MJ   | 7.34E-02 | 0.00E+00 | 4.57E-05 | 0.00E+00 | 9.19E-06 | 0.00E+00 |
| EET       | MJ   | 1.20E-01 | 0.00E+00 | 6.47E-05 | 0.00E+00 | 5.95E-06 | 0.00E+00 |

## Additional impacts

| Indicator | Unit              | A1-A3    | C1       | C2       | C3       | C4       | D        |
|-----------|-------------------|----------|----------|----------|----------|----------|----------|
| ETP-fw    | CTUe              | 4.89E+02 | 0.00E+00 | 7.30E-02 | 0.00E+00 | 2.10E-02 | 0.00E+00 |
| HTP-nc*   | CTUh              | 1.61E-07 | 0.00E+00 | 1.75E-10 | 0.00E+00 | 2.76E-11 | 0.00E+00 |
| HTP-c*    | CTUh              | 5.15E-09 | 0.00E+00 | 1.35E-10 | 0.00E+00 | 2.83E-11 | 0.00E+00 |
| IRP**     | kBq U235 eq.      | 3.16E-01 | 0.00E+00 | 3.49E-04 | 0.00E+00 | 9.78E-05 | 0.00E+00 |
| PM        | Disease Incidence | 2.07E-07 | 0.00E+00 | 1.52E-09 | 0.00E+00 | 1.01E-09 | 0.00E+00 |
| SQP*      | Dimensionless     | 2.03E+01 | 0.00E+00 | 1.62E-01 | 0.00E+00 | 3.02E-01 | 0.00E+00 |

\*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.

\*\* 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.

## Variations of included products

### Mandatory impact category indicators according to EN 15804 - Variations

| Indicator            | Variations % |
|----------------------|--------------|
| GWP-total            | 45.34%       |
| GWP-fossil           | 45.36%       |
| GWP-biogenic         | 35.51%       |
| GWP-luluc            | 41.39%       |
| GWP-GHG              | 45.20%       |
| ODP                  | 38.67%       |
| AP                   | 43.82%       |
| EP-freshwater        | 46.95%       |
| EP-marine            | 40.81%       |
| EP-terrestrial       | 59.81%       |
| POCP                 | 36.64%       |
| ADP-minerals&metals* | 21.76%       |

|             |        |
|-------------|--------|
| ADP-fossil* | 39.72% |
| WDP*        | 32.51% |

### Resource use indicators - Variations

| Indicator | Variations % |
|-----------|--------------|
| PERE      | 44.44%       |
| PERM      | 00.00%       |
| PERT      | 44.44%       |
| PENRE     | 39.62%       |
| PENRM     | 00.00%       |
| PENRT     | 39.62%       |
| SM        | 38.91%       |
| RSF       | 42.98%       |
| NRSF      | 00.00%       |
| FW        | 31.00%       |

### Waste indicators – Variations

| Indicator | Variations % |
|-----------|--------------|
| HWD       | 33.66%       |
| NHWD      | 100.86%      |
| RWD       | 48.92%       |

### Output flow indicators – Variations

| Indicator | Variations % |
|-----------|--------------|
| CRU       | 0.00%        |
| MFR       | 38.55%       |
| MER       | 0.00%        |
| EEE       | 45.11%       |
| EET       | 178.38%      |

### Additional impacts - Variations

| Indicator | Variations % |
|-----------|--------------|
| ETP-fw    | 61.49%       |
| HTP-nc*   | 1291.13%     |
| HTP-c*    | 37.12%       |
| IRP**     | 48.51%       |
| PM        | 47.83%       |
| SQP*      | 45.48%       |

### Interpretation

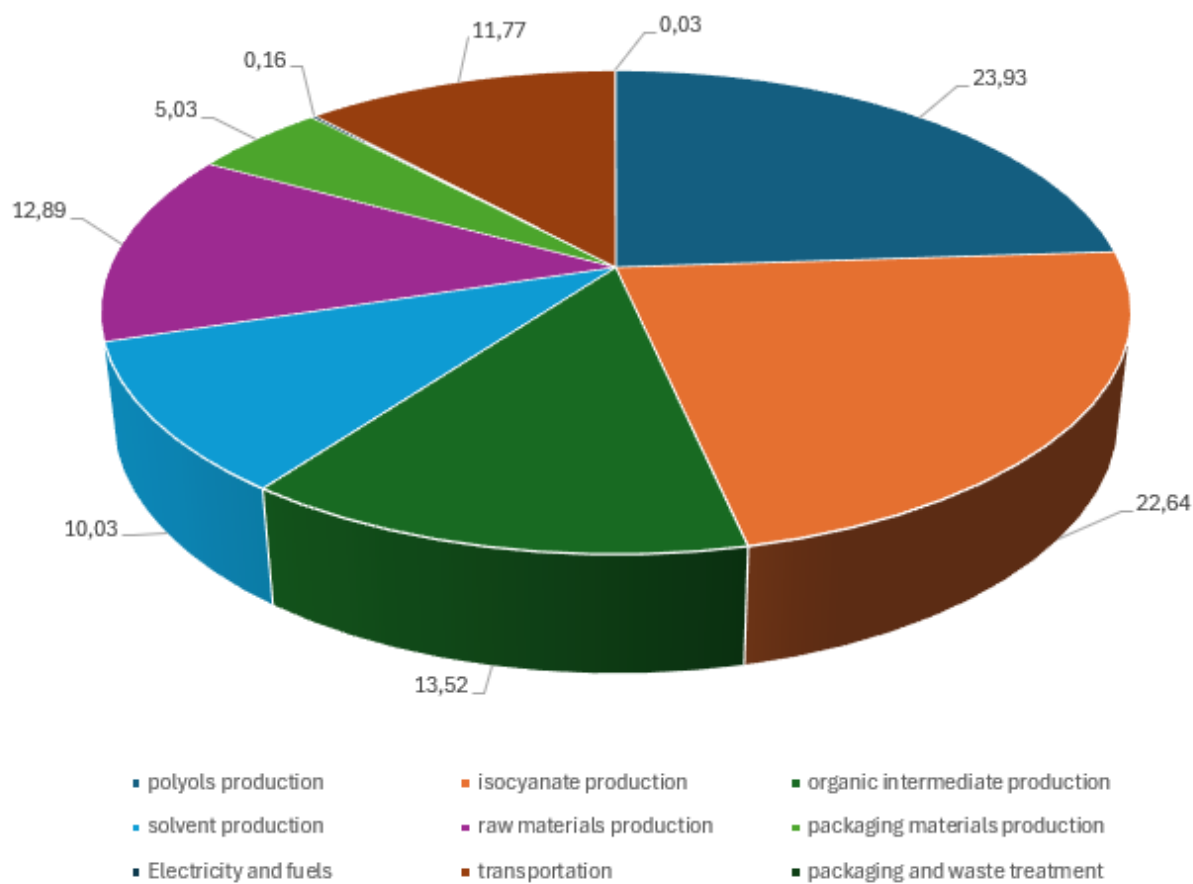
The majority of the total Global Warming Potential (GWP) is associated with upstream processes (Module A1), primarily due to the extraction and processing of raw materials. In particular, the production of diisocyanates, polyols and an organic intermediate represents the most significant contribution, followed by the manufacture of solvent. In contrast, the production of the final product (Module A3) has a relatively minor impact on the overall GWP.

**Note:**

The use of the results of modules A1-A3 is discouraged without considering the results of module C.

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.

### Global Warming Potential Contribution



## List of abbreviations

|                       |                                                                         |
|-----------------------|-------------------------------------------------------------------------|
| <b>GWP-biogenic</b>   | Global Warming Potential - biogenic                                     |
| <b>GWP-fossil</b>     | Global Warming Potential - fossil fuels                                 |
| <b>GWP-luluc</b>      | Global Warming Potential - land use and land use change                 |
| <b>GWP-total</b>      | Global Warming Potential - total                                        |
| <b>GWP-IOBC/GHG</b>   | Global warming potential except emissions and uptake of biogenic carbon |
| <b>ETP-fw</b>         | Potential Comparative Toxic Unit for ecosystems                         |
| <b>HTP-nc</b>         | Potential Comparative Toxic Unit for humans - non-cancer effects        |
| <b>ADPF</b>           | Abiotic depletion potential - fossil resources                          |
| <b>ADPE</b>           | Abiotic depletion potential - non-fossil resources                      |
| <b>AP</b>             | Acidification potential, Accumulated Exceedance                         |
| <b>ODP</b>            | Depletion potential of the stratospheric ozone layer                    |
| <b>EP-freshwater</b>  | Eutrophication potential - freshwater                                   |
| <b>EP-marine</b>      | Eutrophication potential - marine                                       |
| <b>EP-terrestrial</b> | Eutrophication potential - terrestrial                                  |
| <b>POCP</b>           | Photochemical Ozone Creation Potential                                  |
| <b>HTP-c</b>          | Potential Comparative Toxic Unit for humans - cancer effects            |
| <b>IRP</b>            | Potential Human exposure efficiency relative to U235                    |
| <b>PM</b>             | Potential incidence of disease due to PM emissions                      |
| <b>SQP</b>            | Potential Soil quality index                                            |
| <b>WDP</b>            | Water (user) deprivation potential                                      |
| <b>CRU</b>            | Components for re-use                                                   |
| <b>EEE</b>            | Exported electrical energy                                              |
| <b>EET</b>            | Exported thermal energy                                                 |
| <b>MER</b>            | Materials for energy recovery                                           |
| <b>MFR</b>            | Materials for recycling                                                 |
| <b>PENRT</b>          | Total use of non renewable primary energy resources                     |
| <b>PERT</b>           | Total use of renewable primary energy resources                         |
| <b>FW</b>             | Use of net fresh water                                                  |
| <b>PENRE</b>          | Use of non renewable primary energy resources used as energy carrier    |
| <b>PENRM</b>          | Use of non renewable primary energy resources used as raw materials     |
| <b>NRSF</b>           | Use of non renewable secondary fuels                                    |
| <b>PERE</b>           | Use of renewable primary energy resources used as energy carrier        |
| <b>PERM</b>           | Use of renewable primary energy resources used as raw materials         |
| <b>RSF</b>            | Use of renewable secondary fuels                                        |
| <b>SM</b>             | Use of secondary materials                                              |
| <b>HWD</b>            | Hazardous waste disposed                                                |
| <b>NHWD</b>           | Non hazardous waste disposed                                            |
| <b>RWD</b>            | Radioactive waste disposed                                              |

|             |                                                                         |
|-------------|-------------------------------------------------------------------------|
| <b>EN</b>   | European Norm (Standard)                                                |
| <b>EF</b>   | Environmental Footprint                                                 |
| <b>GPI</b>  | General Programme Instructions                                          |
| <b>ISO</b>  | International Organization for Standardization                          |
| <b>CEN</b>  | European Committee for Standardization                                  |
| <b>CLC</b>  | Co-location centre                                                      |
| <b>CPC</b>  | Central product classification                                          |
| <b>GHS</b>  | Globally harmonized system of classification and labelling of chemicals |
| <b>GRI</b>  | Global Reporting Initiative                                             |
| <b>SVHC</b> | Substances of Very High Concern                                         |
| <b>ND</b>   | Not Declared                                                            |

## References

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- ISO 14020:2022 Environmental labels and declarations - General principles
- ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework
- ISO 14044:2006 Environmental management — Life cycle assessment — Requirements and guidelines
- Ecoinvent / Ecoinvent Centre, [www.Eco-invent.org](http://www.Eco-invent.org)
- Residual Energy Mix 2024 from Renewable Energy Sources Operator & Guarantees of Origin (DAPEEP SA)

## Version history

**2026-04-29/ EPD Version 001 Original version of EPD**

