

Environmental Product Declaration

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

Water-based Liquid Applied Waterproofing Coatings from ALCHIMICA S.A.

Products included in the EPD:

HYPERDESMO® AQUA

HYPERDESMO® AQUA BLUE/BLACK

HYPERDESMO® AQUA-PB

AQUASMART®-PB

AQUASMART® BITUMEN EMULSION

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



Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0032204:001
Version date:	2026-06-08
Validity date:	2031-06-08

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

GENERAL INFORMATION

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

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

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: Business Quality Verification P.C.
 Address: 5, Konitsis Street, GR 15125, Marousi, Attica / Greece www.bqv.gr – info@bqv.gr Accredited by: Hellenic Accreditation System (ESYD) with accreditation number 1218
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 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: 71st km Athens-Lamia National Road, 341 00

Contact: 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 m². 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.

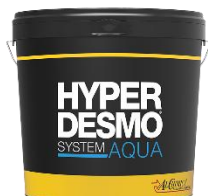
Through energy-efficient production, waste minimization, and responsible sourcing, ALCHIMICA aims to reduce its environmental footprint while delivering reliable, high-performance solutions that contribute to the long-term resilience of the built environment.

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® AQUA**

Product identification: **HYPERDESMO® AQUA** is a one-component, fully aliphatic, water-based polyurethane liquid membrane designed for UV-exposed waterproofing, protection, and energy-saving cool-roof applications on roofs, metal surfaces, and under-tile wet areas.



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

Product description:

HYPERDESMO® AQUA is a one-component, very fast-drying, fully aliphatic, water-based polyurethane liquid-applied membrane, based on ALCHIMICA's water-based polyurethane dispersion technology, forming an elastic, seamless, and hydrophobic coating for waterproofing and protection. Manufactured by ALCHIMICA S.A., its fully aliphatic chemistry provides excellent UV and weathering resistance, while its high solar reflectance (SRI 106 in white, per ASTM E-1980) reduces surface temperatures and improves building energy performance. Its formulation offers excellent ponding-water resistance, breathable water-vapor transmission, and easy application by brush, roller, or spray on vertical and horizontal substrates. It is suitable for waterproofing and protection of roofs, light metal or fibrous cement roofing, under-tile wet rooms, polyurethane foam, and protection of concrete against carbonation.

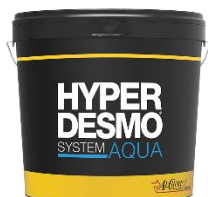
HYPERDESMO® AQUA is CE-certified under EN 1504-2:2004 (2928-CPR-55), ETA-17/0922 (EAD 030350-00-0402) for polyurethane-based liquid-applied roof waterproofing kits, and EN 14891:2012 (type DM 02P). Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it provides an environmentally responsible, UV-stable, energy-saving solution for demanding 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: 71st km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® AQUA - BLUE / BLACK**

Product identification: **HYPERDESMO® AQUA - BLUE / BLACK** is a single-component, water-based polyurethane liquid membrane designed for non-exposed and under-tile waterproofing of bathrooms, balconies, terraces, swimming pools, under-screeds, and inverted roofs, with superior low-temperature crack-bridging performance.



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

Product description:

HYPERDESMO® AQUA – BLUE/BLACK is a single-component, fast-drying, water-based polyurethane liquid-applied membrane, based on ALCHIMICA's water-based polyurethane dispersion technology, forming an elastic, seamless, and hydrophobic coating engineered for non-exposed and under-tile waterproofing applications. Manufactured by ALCHIMICA S.A., it provides exceptional low-temperature resistance, maintaining its crack-bridging ability even at –20°C for reliable performance under demanding climatic conditions. The thixotropic, quick-drying formulation offers excellent workability, breathable water-vapor transmission, easy water-based cleanup, and application by brush, roller, or airless spray on vertical and horizontal substrates. It is suitable for waterproofing beneath tiles in bathrooms, kitchens, balconies, terraces, swimming pools, and roofs, as well as non-exposed applications such as under-screed and inverted roofs.

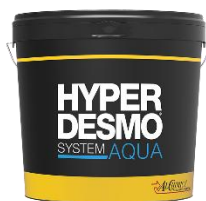
HYPERDESMO® AQUA – BLUE/BLACK is CE-certified under EN 1504-2:2004 (2928-CPR-55), ETA-17/0922 (EAD 030350-00-0402) for polyurethane-based liquid-applied roof waterproofing kits, and EN 14891:2012 (type DM 02P). Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it provides an environmentally responsible solution for under-tile and non-exposed waterproofing, including swimming pools and freeze-prone environments.

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: 71st km Athens-Lamia National Road, 341 00

Product name: **HYPERDESMO® AQUA-PB**

Product identification: **HYPERDESMO® AQUA-PB** is a water-based polyurethane-bitumen liquid membrane designed for the waterproofing and protection of foundation walls and wet rooms, offering a seamless, elastic, and environmentally responsible solution.



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

Product description:

HYPERDESMO® AQUA-PB is a water-based, bitumen-extended polyurethane liquid-applied membrane that produces a seamless, elastic, and durable waterproofing coating with true elastomeric properties—distinguishing it from conventional thermoplastic bitumen emulsion materials. Manufactured by ALCHIMICA S.A., it is a quick-drying, thixotropic formulation that can be applied in thicker coats than typical bitumen emulsions, providing strong adhesion, elasticity, and reliable long-term waterproofing performance. The membrane achieves successful application on a wide range of substrates—including concrete, fibrous cement, cement roof tiles, wood, corroded metal, and galvanized steel—making it suitable for waterproofing and protection of foundation walls and wet rooms, and it can optionally be

reinforced with geotextile fabric supplied by ALCHIMICA®. Application is straightforward by brush, roller, or airless spraying, with easy water-based cleanup and simple repairability.

HYPERDESMO® AQUA-PB offers high elongation (>600%), tensile strength of 1–2 N/mm², strong adhesion to concrete (>1.5 MPa), and Shore A hardness of 50, ensuring robust mechanical performance for below-grade and indoor wet-area applications. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and reliability while providing an environmentally responsible, low-emission alternative for waterproofing of foundation walls and wet rooms.

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: 71st km Athens-Lamia National Road, 341 00

Product name: **AQUASMART®-PB**

Product identification: **AQUASMART®-PB** is a water-based polyurethane-bitumen liquid membrane with exceptional thixotropic properties, designed for the waterproofing and protection of foundation walls and wet rooms, offering a seamless, elastic, and environmentally responsible solution.



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

Product description:

AQUASMART®-PB is a water-based, bitumen-extended polyurethane liquid-applied membrane with exceptional thixotropic properties, producing a seamless, elastic, and durable waterproofing coating with true elastomeric characteristics—distinguishing it from conventional thermoplastic bitumen emulsion materials. Manufactured by ALCHIMICA S.A., it is a quick-drying formulation that can be applied in thick coats, providing strong adhesion, reliable mechanical performance, and easy water-based application and cleanup. The membrane achieves successful application on a wide range of substrates—including concrete, fibrous cement, cement roof tiles, wood, corroded metal, and galvanized steel—making it suitable for waterproofing and protection of foundation walls and wet rooms, and it is typically reinforced with geotextile fabric supplied by ALCHIMICA®. Application is straightforward by brush, roller, or airless spraying in one or two coats, with easy repairability.

AQUASMART®-PB is CE-certified (2928-CPR-55) according to the European Standard EN 1504-2:2004 for concrete surface protection systems. It offers high elongation (>200%), tensile strength of 4.5–5.0 N/mm², Shore A hardness of 50, strong adhesion to concrete (>1.2 MPa, pull-off ≥0.8 N/mm²), Class I water vapor permeability and impact resistance, low capillary absorption ($w < 0.1 \text{ kg/m}^2 \cdot \text{h}^{0.5}$), low water absorption (<4%), and CO₂ permeability of $S_D > 50 \text{ m}$. Produced under ISO 9001, ISO 14001, and ISO

45001 management systems, it ensures consistent quality and reliability while providing an environmentally responsible, low-emission solution for waterproofing of foundation walls and wet rooms.

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: 71st km Athens-Lamia National Road, 341 00

Product name: **AQUASMART®-BITUMEN EMULSION**

Product identification: **AQUASMART®-BITUMEN EMULSION** is a water-based, quick-setting bitumen emulsion designed as a sealer and damp-proofer for below-grade foundations, walls, wet rooms, and under-tile applications.



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

Product description:

AQUASMART®-BITUMEN EMULSION is a thixotropic, premium, quick-setting bitumen emulsion designed as a sealer and damp-proofer for below-grade foundations, walls, wet rooms, and under-tile applications. Manufactured by ALCHIMICA S.A., it is a water-based formulation that produces a seamless, easy-to-apply, and easy-to-repair protective coating, suitable for application by brush, roller, or airless spraying in one or two coats, optionally reinforced with geotextile fabric supplied by ALCHIMICA®. The product is specifically suited for damp-proofing concrete substrates, providing reliable moisture protection for foundation walls and interior wet areas, with the ability to be applied on damp (though not ponding-wet) surfaces for optimum adhesion.

AQUASMART®-BITUMEN EMULSION is CE-certified (2928-CPR-55) according to the European Standard EN 1504-2:2004 for concrete surface protection systems. It delivers strong adhesion through pull-off bond strength ($\geq 1.5 \text{ N/mm}^2$), Class I water vapor permeability ($S_D < 5 \text{ m}$) and impact resistance ($\geq 4 \text{ N}$), low capillary absorption ($w < 0.1 \text{ kg/m}^2 \cdot \text{h}^{0.5}$), high CO_2 permeability barrier ($S_D > 50 \text{ m}$), and base asphalt penetration of 80–100. Produced under ISO 9001, ISO 14001, and ISO 45001 management systems, it ensures consistent quality and reliability while providing a cost-effective, water-based damp-proofing solution for below-grade construction and interior 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: 71st km Athens-Lamia National Road, 341 00

TECHNICAL SPECIFICATIONS					
PROPERTY	HYPERDESMO® AQUA	HYPERDESMO® AQUA BLUE/BLACK	AQUASMART BITUMEN EMULSION	AQUASMART PB	Method
CO ₂ Permeability	S _D > 50 m	S _D > 50 m	S _D > 50 m	S _D > 50 m	EN 1062-6:2002
Water vapour permeability	S _D < 5 m	S _D < 5 m	S _D < 5 m	S _D < 5 m	EN ISO 7783:2011
Capillary absorption & permeability to water	< 0.1 Kg/m ² .h ^{0,5}	< 0.1 Kg/m ² .h ^{0,5}	< 0.1 Kg/m ² .h ^{0,5}	< 0.1 Kg/m ² .h ^{0,5}	EN 1062-3:2008
Adhesion strength by pull-off test	≥ 1.5 N/mm ²	≥ 1.5 N/mm ²	≥ 1.5 N/mm ²	≥ 0.8 N/mm ²	EN 1542-1999

TECHNICAL SPECIFICATIONS		
PROPERTY	HYPERDESMO® AQUA-PB	Method
Hardness	50 Shore A	ASTM D2240/DIN 53505/ISO R868
Tensile strength at break (at 23°C)	1-2 N/mm ²	ASTM D412/EN ISO-527-3
Elongation (at 23°C)	>600 %	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 water-based liquid applied waterproofing 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	7.88E-02	0.00E+00	2.00E-01	0
Asphalt	1.05E-01	0.00E+00	5.00E-01	0
Fillers	4.11E-01	4.10E-02	5.30E-01	0

Acrylic binder	1.80E-01	0.00E+00	2.44E-01	0
Water	1.85E-01	1.02E-01	4.30E-01	0
Additives	4.02E-02	6.00E-03	6.20E-02	0

Packaging materials	Mass-kg (per declared unit)	Mass-% (versus the product)
PP bucket	4.71E-02	<9%
Steel bucket	4.41E-04	<0.4%
Cardboard box	1.67E-05	<0.01%
Polyethylene LDPE film	7.78E-04	<0.1%
Wood (pallets)	1.69E-02	<2.2%

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

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 ₂ Emissions (Kg CO ₂ /KWh)*
0.12	

* 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 CO₂ 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 water-based liquid applied waterproofing 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 water-based liquid applied waterproofing coatings takes place with the whole demolition of the building/ construction. Thus, it is assumed that the energy used for the demolition of water-based liquid applied waterproofing coatings has minor significance and the environmental impact of this module is set to be zero.

C2: Transportation of waste

A distance of 80 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 water-based liquid applied waterproofing coatings will be landfilled and the environmental impact of this module is set to be zero.

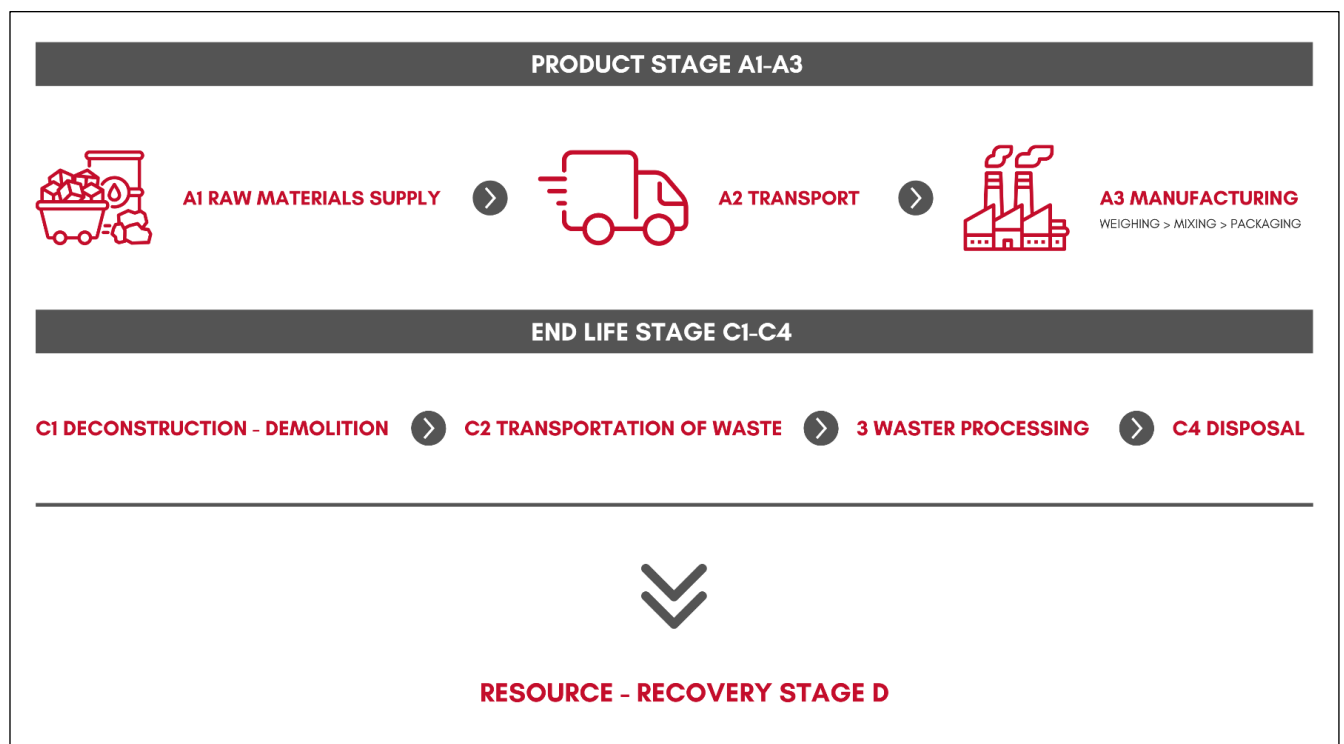
C4: Disposal

This module includes the final disposal of the discarded product. As mentioned above, 100% of the end-of-life waste of water-based liquid applied waterproofing 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/ installation stage		Use stage							End of life stage				Beyond product 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- 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	11.56%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	75.08%					-	-	-	-	-	-	-	-	-	-	-	-
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 71st 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 acrylic binder	Database	Ecoinvent v3.11	2024	Generic data	0.00%
Production of titanium dioxide	Database	Ecoinvent v3.11	2024	Generic data	0.00%
Production of raw materials and packaging	Database	Ecoinvent v3.11	2024	Generic data	0.00%
Transport of raw materials & packaging	Database	Ecoinvent v3.11	2024	Primary data	11.05%
Generation of electricity used in manufacturing of product	DAPEEP SA	Residual energy mix	2024	Primary data	0.51%
Total share of primary data, of GWP-GHG results for A1-A3					11.56%

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 ₂ eq.	1.48E+00	0.00E+00	1.11E-02	0.00E+00	6.26E-03	0.00E+00
GWP-fossil	kg CO ₂ eq.	1.47E+00	0.00E+00	1.07E-02	0.00E+00	6.25E-03	0.00E+00
GWP-biogenic	kg CO ₂ eq.	4.21E-03	0.00E+00	5.03E-06	0.00E+00	1.69E-06	0.00E+00
GWP-luluc	kg CO ₂ eq.	2.94E-03	0.00E+00	4.18E-04	0.00E+00	3.22E-06	0.00E+00
ODP	kg CFC 11 eq.	4.42E-08	0.00E+00	4.16E-10	0.00E+00	1.81E-10	0.00E+00
AP	mol H ⁺ eq.	1.52E-02	0.00E+00	3.46E-05	0.00E+00	4.43E-05	0.00E+00
EP-freshwater	kg P eq.	4.30E-04	0.00E+00	8.78E-07	0.00E+00	5.17E-07	0.00E+00
EP-marine	kg N eq.	1.47E-03	0.00E+00	1.54E-05	0.00E+00	1.69E-05	0.00E+00
EP-terrestrial	mol N eq.	1.35E-02	0.00E+00	1.30E-04	0.00E+00	1.84E-04	0.00E+00
POCP	kg NMVOC eq.	6.79E-03	0.00E+00	4.98E-05	0.00E+00	6.60E-05	0.00E+00
ADP-minerals&metals*	kg Sb eq.	1.60E-05	0.00E+00	4.18E-08	0.00E+00	0.00E+00	0.00E+00
ADP-fossil*	MJ	2.69E+01	0.00E+00	1.54E-01	0.00E+00	0.00E+00	0.00E+00
WDP*	m ³	9.73E-01	0.00E+00	1.14E-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 ¹	kg CO ₂ eq.	1.47E+00	0.00E+00	1.11E-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							

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

Resource use indicators

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
PERE	MJ	2.05E+00	0.00E+00	3.34E-03	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	2.05E+00	0.00E+00	3.34E-03	0.00E+00	1.42E-03	0.00E+00
PENRE	MJ	2.70E+01	0.00E+00	1.57E-01	0.00E+00	1.39E-01	0.00E+00
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.47E-02	0.00E+00
PENRT	MJ	2.70E+01	0.00E+00	1.57E-01	0.00E+00	1.53E-01	0.00E+00
SM	kg	1.33E-01	0.00E+00	1.74E-04	0.00E+00	7.16E-05	0.00E+00
RSF	MJ	5.01E-02	0.00E+00	1.56E-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 ³	2.33E-02	0.00E+00	4.00E-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; 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

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
HWD	kg	1.31E-01	0.00E+00	2.61E-04	0.00E+00	1.14E-04	0.00E+00
NHWD	kg	6.80E+00	0.00E+00	1.59E-03	0.00E+00	1.66E-03	0.00E+00
RWD	kg	3.59E-05	0.00E+00	3.27E-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	0.0E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	1.16E-01	0.00E+00	1.10E-04	0.00E+00	5.91E-05	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.62E-09	0.00E+00
EEE	MJ	2.83E-02	0.00E+00	1.43E-05	0.00E+00	9.19E-06	0.00E+00
EET	MJ	2.10E-01	0.00E+00	2.36E-05	0.00E+00	5.95E-06	0.00E+00

Additional impacts

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
ETP-fw	CTUe	3.13E+01	0.00E+00	5.68E-02	0.00E+00	2.10E-02	0.00E+00
HTP-nc*	CTUh	2.73E-08	0.00E+00	1.19E-10	0.00E+00	2.76E-11	0.00E+00
HTP-c*	CTUh	1.52E-09	0.00E+00	2.47E-12	0.00E+00	2.83E-11	0.00E+00
IRP**	kBq U235 eq.	1.39E-01	0.00E+00	1.35E-04	0.00E+00	9.78E-05	0.00E+00
PM	Disease Incidence	8.54E-08	0.00E+00	1.03E-09	0.00E+00	1.01E-09	0.00E+00
SQP*	Dimensionless	7.51E+00	0.00E+00	1.63E-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	379.13%
GWP-fossil	382.67%
GWP-biogenic	131.90%
GWP-luluc	2853.81%
GWP-GHG	381.85%
ODP	306.95%
AP	1195.75%
EP-freshwater	505.97%
EP-marine	321.06%
EP-terrestrial	381.94%
POCP	346.67%
ADP-minerals&metals*	456.94%

ADP-fossil*	266.47%
WDP*	1005.89%

Resource use indicators - Variations

Indicator	Variations %
PERE	730.09%
PERM	00.00%
PERT	730.09%
PENRE	266.53%
PENRM	00.00%
PENRT	266.53%
SM	1047.24%
RSF	1263.03%
NRSF	00.00%
FW	901.63%

Waste indicators – Variations

Indicator	Variations %
HWD	751.67%
NHWD	932.69%
RWD	855.08%

Output flow indicators – Variations

Indicator	Variations %
CRU	0.00%
MFR	1309.49%
MER	0.00%
EEE	1039.70%
EET	7181.87%

Additional impacts - Variations

Indicator	Variations %
ETP-fw	1855.57%
HTP-nc*	893.70%
HTP-c*	634.07%
IRP**	840.47%
PM	407.63%
SQP*	370.59%

Interpretation

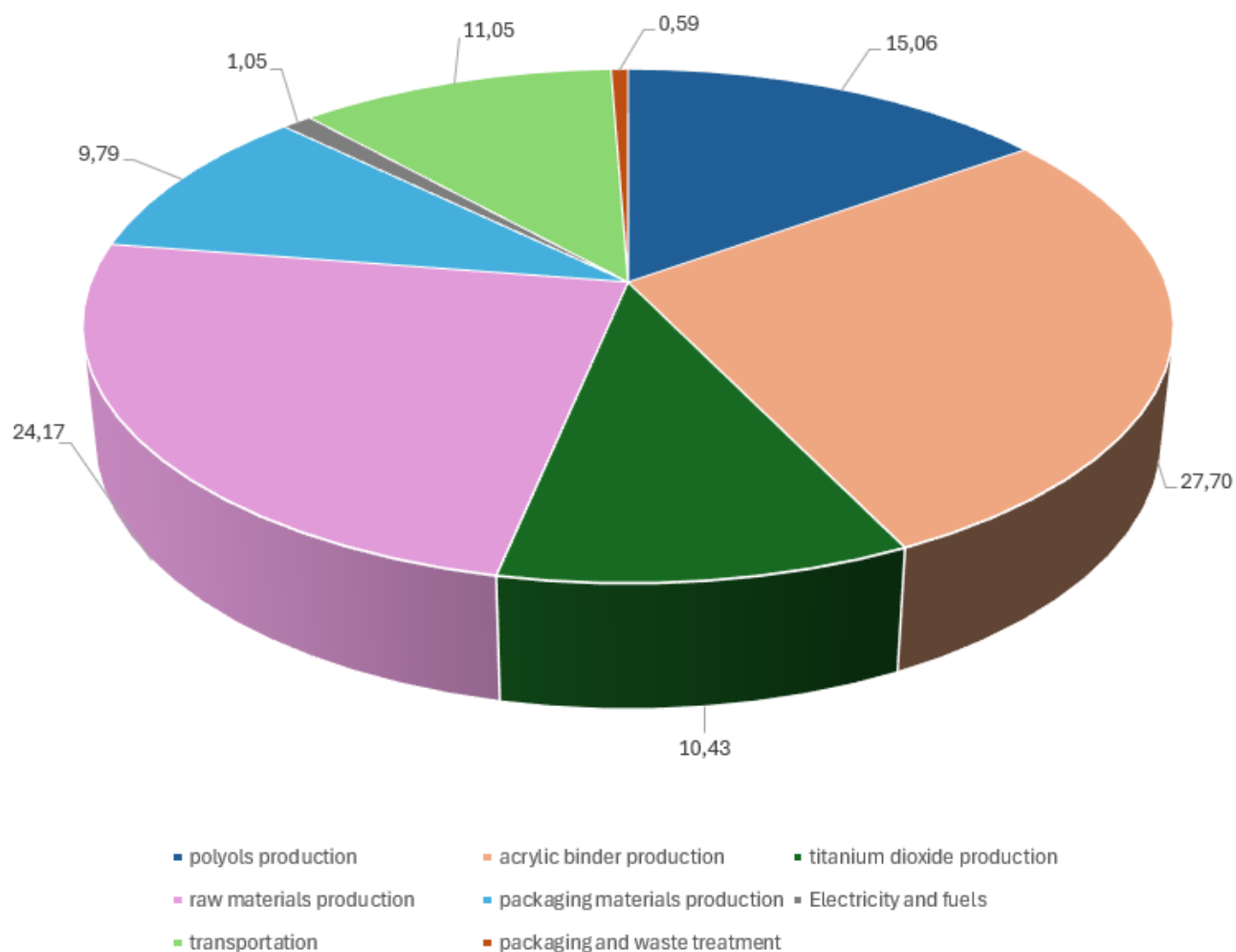
The majority of the total Global Warming Potential (GWP) is associated with upstream processes (Module A1), primarily due to the extraction and processing of raw materials. In particular, the production of polyols, acrylic binder and titanium dioxide represents the most significant contribution. In contrast, 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

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

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

References

- General Programme Instructions of the International EPD® System. Version 5.0.1.
- PCR 2019:14 v.2.0.1 Construction products. EPD System.
- EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works — Environmental Product Declarations - Core rules for the product category of construction products
- 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
- Residual Energy Mix 2024 from Renewable Energy Sources Operator & Guarantees of Origin (DAPEEP SA)

Version history

2026-06-08/ EPD Version 001 Original version of EPD

