ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Termex Cellulose Insulation

Termex-Eriste Oy

Est.1988

EPD HUB, HUB-7725

Published on 06.10.2026, last updated on 06.10.2026, valid until 05.10.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Termex-Eriste Oy
Address	Rajalantie 3, 43100 Saarijärvi FINLAND
Contact details	termex@termex.fi
Website	www.termex.fi

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025 EN 16783 Thermal insulation products
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A5, and modules C1-C4, D
EPD author	Juho Laaksonen, LCA Point
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Elma Avdyli as an authorized verifier for EPD Hub

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Termex Cellulose Insulation
Additional labels	Ekocell
Place(s) of raw material origin	Finland, Turkiye
Place of production	Saarijärvi, Finland
Place(s) of installation and use	EU
Period for data	Calendar Year 2025
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
GTIN (Global Trade Item Number)	6429830086017
A1-A3 Specific data (%)	22

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of cellulose insulation
Declared unit mass	1 kg
Mass of packaging	0,031 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	0,16
GWP-total, A1-A3 ($kgCO_2e$)	-1,23
Secondary material, inputs (%)	122
Total energy use, A1-A3 (kWh)	-0,48
Net freshwater use, A1-A3 (m^3)	0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Termex-Eriste Oy is a Finnish manufacturer of cellulose insulation, also known as blown-in insulation. The company is based in Saarijärvi. The sales and installation of Termex Cellulose insulation are handled by independent reseller companies across the country.

PRODUCT DESCRIPTION

Termex Cellulose Insulation is a blown-in insulation for modern construction. Good thermal performance is the result of several factors. The performance of Termex Cellulose Insulation is based on seamless installation, the moisture-buffering properties of porous cellulose fibres, and low air permeability. In addition, its high specific heat capacity helps reduce temperature fluctuations, contributing to indoor comfort in both summer and winter

Termex Cellulose Insulation is manufactured from recycled newspaper mixed with inorganic flame-retardant salts. It can be used as insulation in horizontal, vertical, and inclined spaces. The material is installed using blowing equipment.

Further information can be found at: www.termex.fi

BIOGENIC CARBON CONTENT

Biogenic carbon content in product, kg C	0,4
Biogenic carbon content in packaging, kg C	0,013

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg
Mass per declared unit	1 kg
Functional unit	-
Reference service life	50

SUBSTANCES, REACH - VERY HIGH CONCERN

The product contains more than 0.1% boric acid (CAS 10043-35-3), which is listed as a SVHC under the REACH regulation.

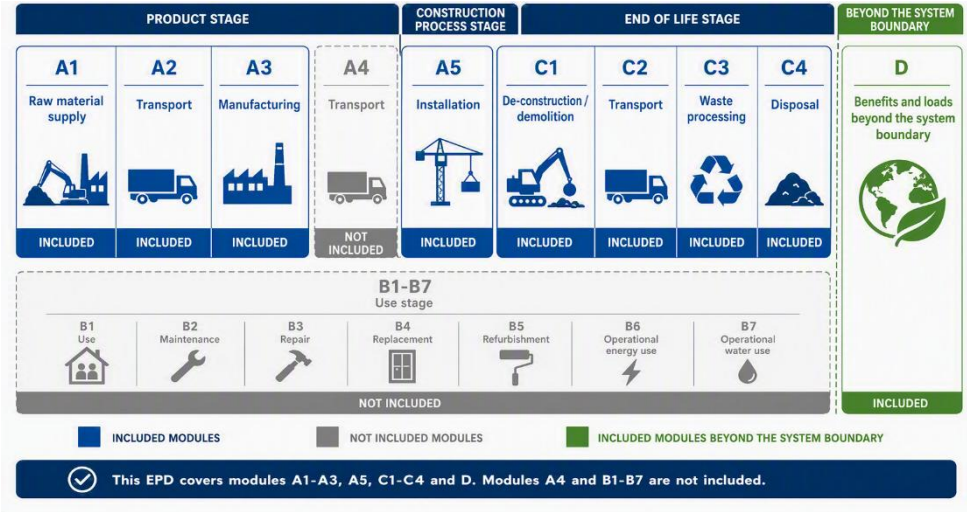
PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	10	Europe, Turkiye
Fossil materials	-	-
Bio-based materials	90	Finland

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.



MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.

The product is manufactured from recycled newsprint sourced mainly from Finland. The raw material is transported to the production facility by truck (40 t capacity), with an average transport distance of 200 km. Upon arrival, the paper undergoes a sorting and cleaning process in which suitable paper grades are directed to production, while rejected qualities are forwarded to further recycling.

During manufacturing, inorganic flame-retardant additives are added into the product.

The production line operates exclusively on electricity certified through Guarantees of Origin.

After the production, the insulation material is packed in plastic film with 15 % recycled content. The bags are palletized on wooden pallets and stabilized for transport using a thin polyethylene wrapping film.

TRANSPORT AND INSTALLATION (A4-A5)

The module A4 is not included in the LCA. The product can be transported by a truck with a capacity of >32T. At the construction site, the product is installed using an electrically powered blowing machine, and its energy consumption is accounted for in the LCA model. For the packaging waste generated during installation, the EUROSTAT waste treatment scenario has been applied.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

PRODUCT END OF LIFE (C1-C4, D)

At the end of its life cycle, the product can be processed in several ways, including reuse or recycling into new products. The material can also be converted into biochar, enabling long-term carbon storage. For this EPD, the end-of-life scenario is modelled as energy recovery, as this option provides the most comprehensive and reliable data.

The benefits related to energy recovery through incineration are accounted for in module D.

MANUFACTURING PROCESS

LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	Not applicable
Ancillary materials	Not applicable
Manufacturing energy and waste	No allocation

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-

This EPD is product and factory specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

The carbon content of the product is calculated in accordance with IPCC (2006). Transmission and conversion losses related to energy consumption are calculated based on the Council of European Energy Regulators, 2nd CEER Report on Power Losses (Energy Quality of Supply Work Stream, Ref: C19-EQS-101-03, 23 March 2020). The energy consumption data for dismantling is based on the values presented by Bozdağ, Ö. & Seçer, M. (2007).

ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	-1,26E+00	1,65E-02	7,09E-03	-1,23E+00	ND	5,22E-02	ND	ND	ND	ND	ND	ND	ND	3,61E-03	9,57E-03	1,36E+00	0,00E+00	-4,65E-02
GWP – fossil	kg CO_2e	9,17E-02	1,65E-02	5,06E-02	1,59E-01	ND	8,50E-03	ND	ND	ND	ND	ND	ND	ND	3,60E-03	9,57E-03	1,55E-02	0,00E+00	-4,39E-02
GWP – biogenic	kg CO_2e	-1,35E+00	1,12E-08	-4,36E-02	-1,39E+00	ND	4,37E-02	ND	ND	ND	ND	ND	ND	ND	3,68E-07	0,00E+00	1,35E+00	0,00E+00	-2,22E-03
GWP – LULUC	kg CO_2e	1,47E-04	6,70E-06	5,55E-05	2,10E-04	ND	1,85E-05	ND	ND	ND	ND	ND	ND	ND	3,69E-07	4,33E-06	4,29E-06	0,00E+00	-3,94E-04
Ozone depletion pot.	kg CFC_{-11}e	1,01E-09	3,32E-10	9,10E-10	2,25E-09	ND	2,85E-11	ND	ND	ND	ND	ND	ND	ND	5,52E-11	1,42E-10	1,74E-10	0,00E+00	-7,31E-09
Acidification potential	mol H^+e	1,18E-03	8,93E-05	2,59E-04	1,53E-03	ND	1,10E-05	ND	ND	ND	ND	ND	ND	ND	3,25E-05	2,19E-05	1,61E-04	0,00E+00	-1,68E-03
EP-freshwater[2)]	kg Pe	4,26E-05	1,08E-06	1,14E-05	5,51E-05	ND	6,97E-07	ND	ND	ND	ND	ND	ND	ND	1,04E-07	7,50E-07	6,72E-06	0,00E+00	-1,15E-05
EP-marine	kg Ne	1,57E-04	2,30E-05	8,41E-05	2,64E-04	ND	7,25E-06	ND	ND	ND	ND	ND	ND	ND	1,51E-05	5,08E-06	8,56E-05	0,00E+00	-4,90E-04
EP-terrestrial	mol Ne	1,73E-03	2,53E-04	8,61E-04	2,85E-03	ND	3,77E-05	ND	ND	ND	ND	ND	ND	ND	1,65E-04	5,49E-05	8,22E-04	0,00E+00	-8,19E-03
POCP ("smog")[3)]	kg NMVOCe	5,41E-04	1,02E-04	3,24E-04	9,67E-04	ND	1,13E-05	ND	ND	ND	ND	ND	ND	ND	4,93E-05	3,07E-05	2,07E-04	0,00E+00	-1,42E-03
ADP-minerals & metals[4)]	kg Sbe	7,94E-05	4,38E-08	3,41E-07	7,98E-05	ND	9,80E-09	ND	ND	ND	ND	ND	ND	ND	1,29E-09	3,20E-08	3,18E-08	0,00E+00	-1,33E-07
ADP-fossil resources	MJ	1,19E+00	2,43E-01	8,16E-01	2,25E+00	ND	6,11E-02	ND	ND	ND	ND	ND	ND	ND	4,72E-02	1,34E-01	1,38E-01	0,00E+00	-5,22E-01
Water use[5)]	m^3e depr.	4,87E-02	1,19E-03	1,78E-02	6,77E-02	ND	1,75E-03	ND	ND	ND	ND	ND	ND	ND	1,18E-04	6,30E-04	3,26E-02	0,00E+00	-4,23E-02

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	1,37E-08	1,49E-09	5,42E-09	2,06E-08	ND	2,05E-10	ND	ND	ND	ND	ND	ND	ND	9,25E-10	7,13E-10	1,81E-09	0,00E+00	-2,35E-08
Ionizing radiation[6)]	kBq U235e	5,77E-03	2,76E-04	2,89E-03	8,93E-03	ND	2,76E-03	ND	ND	ND	ND	ND	ND	ND	2,09E-05	1,10E-04	1,57E-04	0,00E+00	-3,48E-03
Ecotoxicity (freshwater)	CTUe	6,63E-01	2,76E-02	2,14E-01	9,05E-01	ND	5,51E-02	ND	ND	ND	ND	ND	ND	ND	2,60E-03	2,14E-02	1,05E-01	0,00E+00	-4,08E-01
Human toxicity, cancer	CTUh	4,74E-11	2,84E-12	7,29E-11	1,23E-10	ND	1,39E-12	ND	ND	ND	ND	ND	ND	ND	3,71E-13	1,60E-12	2,89E-11	0,00E+00	-1,35E-10
Human tox. non-cancer	CTUh	3,35E-09	1,48E-10	5,63E-10	4,06E-09	ND	4,76E-11	ND	ND	ND	ND	ND	ND	ND	5,87E-12	8,48E-11	1,95E-09	0,00E+00	-4,72E-09
SQP[7)]	-	5,46E-01	2,23E-01	5,88E+00	6,65E+00	ND	3,29E-02	ND	ND	ND	ND	ND	ND	ND	3,30E-03	8,15E-02	3,86E-02	0,00E+00	-3,01E+01

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1,20E-01	3,76E-03	-3,86E+00	-3,74E+00	ND	-3,55E-01	ND	ND	ND	ND	ND	ND	ND	2,99E-04	1,87E-03	-1,69E+01	0,00E+00	-7,19E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,83E-01	3,83E-01	ND	-3,83E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,20E-01	3,76E-03	-3,48E+00	-3,36E+00	ND	-7,38E-01	ND	ND	ND	ND	ND	ND	ND	2,99E-04	1,87E-03	-1,69E+01	0,00E+00	-7,19E+00
Non-re. PER as energy	MJ	1,19E+00	2,43E-01	5,59E-01	1,99E+00	ND	-1,60E-01	ND	ND	ND	ND	ND	ND	ND	4,72E-02	1,34E-01	1,38E-01	0,00E+00	-5,23E-01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	2,57E-01	2,57E-01	ND	-2,57E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	1,19E+00	2,43E-01	8,16E-01	2,25E+00	ND	-4,17E-01	ND	ND	ND	ND	ND	ND	ND	4,72E-02	1,34E-01	1,38E-01	0,00E+00	-5,23E-01
Secondary materials	kg	1,22E+00	1,06E-04	3,06E-03	1,23E+00	ND	2,11E-05	ND	ND	ND	ND	ND	ND	ND	1,96E-05	6,12E-05	3,22E-04	0,00E+00	-6,29E-04
Renew. secondary fuels	MJ	5,26E-06	1,23E-06	1,03E-02	1,03E-02	ND	1,72E-07	ND	ND	ND	ND	ND	ND	ND	5,12E-08	7,82E-07	7,62E-07	0,00E+00	-3,73E-06
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,24E-03	3,40E-05	4,05E-04	1,68E-03	ND	-8,95E-06	ND	ND	ND	ND	ND	ND	ND	3,12E-06	1,84E-05	2,01E-04	0,00E+00	-1,92E-04

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	7,08E-03	3,48E-04	9,37E-03	1,68E-02	ND	3,95E-04	ND	ND	ND	ND	ND	ND	ND	5,25E-05	2,36E-04	6,47E-03	0,00E+00	-7,91E-03
Non-hazardous waste	kg	4,03E-01	6,78E-03	2,17E-01	6,27E-01	ND	4,21E-02	ND	ND	ND	ND	ND	ND	ND	7,15E-04	4,43E-03	1,03E+00	0,00E+00	-8,95E-02
Radioactive waste	kg	1,42E-06	6,82E-08	7,26E-07	2,21E-06	ND	5,95E-07	ND	ND	ND	ND	ND	ND	ND	5,12E-09	2,69E-08	3,90E-08	0,00E+00	-8,56E-07

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	3,22E-01	3,22E-01	ND	1,03E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	7,26E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,01E+01	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	3,07E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,52E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	4,19E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,57E+00	0,00E+00	0,00E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	9,19E-02	1,65E-02	5,07E-02	1,59E-01	ND	8,52E-03	ND	ND	ND	ND	ND	ND	ND	3,61E-03	9,57E-03	1,55E-02	0,00E+00	-4,43E-02

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

Electricity production, wind, 1-3MW turbine, onshore, Finland, Ecoinvent, 0.0190 kgCO2e/kWh

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	100
Bulk density of transported products	1,03E+02
Volume capacity utilization factor	1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	Market for electricity, medium voltage (Ecoinvent 3.11): 0,007 kWh/kg
Water use (m^3)	-
Ancillary materials: type and mass (kg)	-
Waste materials: type and mass (kg)	Wood packaging EU scenario (Ecoinvent 3.11): 0,025 kg/kg Plastic packaging EU scenario (Ecoinvent 3.11): 0,0059 kg/kg
Waste materials: output routes	30% of the wooden packaging is incinerated 32% of the wooden packaging is recycled 23% of the plastic packaging is landfilled 37% of the plastic packaging is incinerated 40% of the plastic packaging is recycled (source: EUROSTAT)
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	1 kg
Collection process: Mixed waste (kg)	-
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0
Recovery: energy recovery (kg)	1
Disposal (kg)	0
Scenario assumptions e.g. transportation (mode, km) & other	Truck 50 km

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Elma Avdyli as an authorized verifier for EPD Hub Limited 06.10.2026