ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Fuse switch Disconnector
Melbye As

EPD HUB, HUB-6768
Published on 23.06.2026, last updated on 23.06.2026, valid until 22.06.2031

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.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Melbye As
Address	Prost Stabels Vei 22, 2019 Skedsmokorset, Norway
Contact details	kontakt@melbye.no
Website	https://melbye.com/

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
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A5, and modules C1-C4, D
EPD author	Aditya Dharmendra Nishad
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Yazan Badour 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	Fuse switch Disconnector
Additional labels	-
Product reference	-
Place(s) of raw material origin	France
Place of production	CS 90100, 01160 Pont-d'Ain, France
Place(s) of installation and use	Global
Period for data	1st January 2023 - 31st December 2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	9.8% - 28%
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	5.38

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
Mass of packaging	0.34 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	8.38
GWP-total, A1-A3 ($kgCO_2e$)	7.93
Secondary material, inputs (%)	30.2
Total energy use, A1-A3 (kWh)	33.7
Net freshwater use, A1-A3 (m^3)	0.13

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Melbye As is one of Norway's oldest family-owned companies, with a history dating all the way back to 1907. We have a proud tradition of technical innovation and trade, and today, we are a leading provider of forward-thinking products and system solutions for critical infrastructure. We have expertise in transmission and utilities, fiber, ducts and chambers and safety. We serve customers throughout the Nordic region and the United Kingdom, engage with stakeholders across Europe, and collaborate with around 200 partners and suppliers.
While our headquarters are located just outside Oslo, Norway, we also have offices at multiple locations in Norway, Sweden, and the United Kingdom, as well as representatives in Finland, India and China. Together, we are more than 120 co-workers who share the company's core values: Innovation, teamwork, and professionalism.
With advanced expertise spread across our core areas and a dedication to long-term operation and future-oriented development, we stand at the forefront of addressing future challenges. We take pride in contributing to the development of critical infrastructure that will shape tomorrow's society.
Note: Melbye As is a distributor and not the original manufacturer of the product

PRODUCT DESCRIPTION

This Environmental Product Declaration (EPD) covers a 160 A modular fuse switch disconnector (ISO-Switch) with spike terminals, designed for low-voltage electrical distribution systems.
The product is a 3-pole modular load break switch, expandable with an additional pole for neutral protection. It is designed for use with NH00 / NH000 fuse links and provides manual switching, isolation, and overcurrent protection of electrical circuits. The breaking capacity is 160 A when used with NH00 fuses. The product does not provide earth-leakage protection.
The switch features a modular design with spike terminals equipped with grease-filled rubber seals, protecting cable ends from external influences. Terminal end stops ensure correct cable insertion length, and torque screws provide reliable electrical connections. The insulation level is 1000 V, with a rated operating voltage of 1000 V.
The product complies with IEC 60947-3 and IEC 60269-2.
The fuse switch disconnector is intended for installation in low-voltage distribution boards and control panels within buildings.
All products within the group have a rated operating voltage of 1000 V and an insulation level of 1000 V. Overcurrent and short-circuit protection are provided by the installed fuse links. The products do not provide earth-leakage protection.
Product Variants Included
160 A variants
Fuse size: NH00 / NH000
Breaking capacity: 160 A with NH00 / NH000 fuses
Terminal types: spike terminals or standard connection terminals
Configurations: 3P and 3P+N
Typical product weight range: 3.6–4.65 kg

This EPD covers Fuse switch connector of the following mentioned products codes:
2873014
2873015
2873016
2873017

Further information can be found at:

https://melbye.com/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	64.89	France
Minerals	-	-
Fossil materials	35.11	France
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	0.1472

FUNCTIONAL UNIT AND SERVICE LIFE

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

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

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

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	ND	x	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Not declared = ND.

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 manufacturing of the fuse switch disconnector consists of in-house assembly and minor component processing of glass-fiber reinforced plastic, polyamide, rubber, and metallic components, including fitting, trimming, adjustment, fastening, terminal assembly, and final product assembly. Manufacturing waste generation is assumed to be 2% for glass-fiber reinforced plastic and polyamide and 2% for Rubber, arising from trimming, adjustment, handling losses, and rejected components during assembly, based on internal manufacturing data. Packaging materials consist mainly of cardboard and wooden boxes. Generated manufacturing waste is collected and treated according to standard practice, with recyclable waste sent for recycling and remaining waste sent to landfill. Transport distances of 50 km for recycling and 50 km for landfill are assumed using truck transport.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

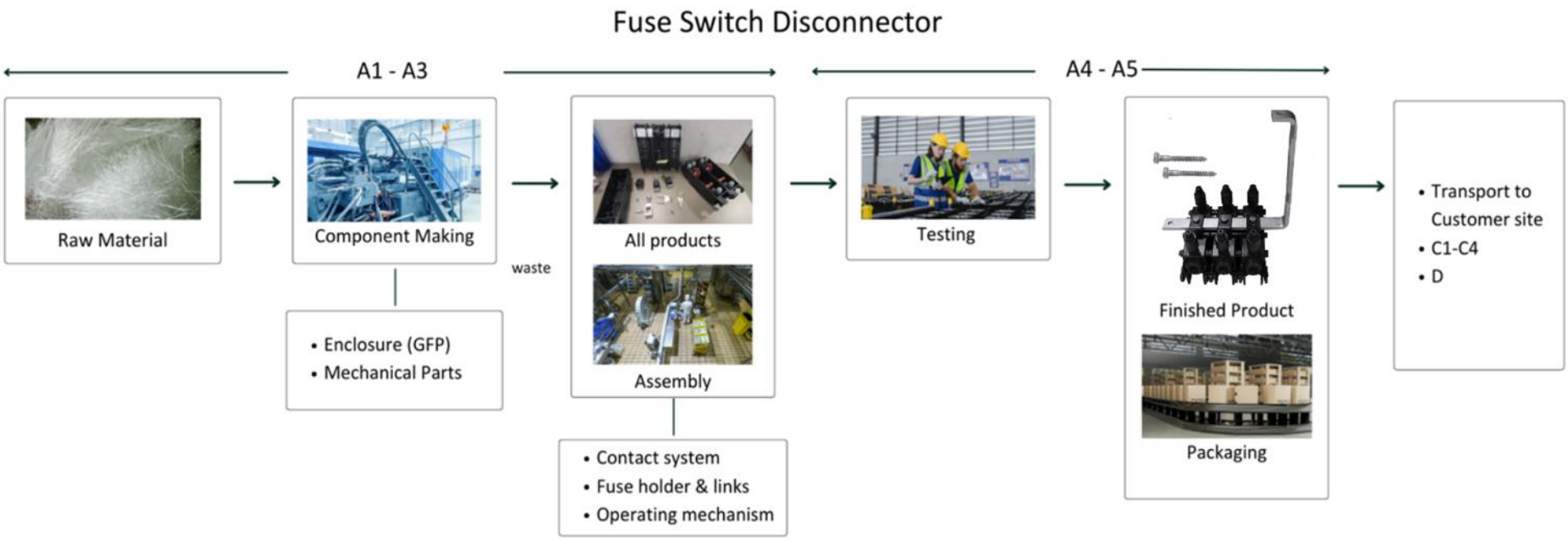
A5 – Installation Phase
Material Loss: There is no material loss during installation, as fuse switch connectors are robust electrical components designed for long-term durability.
Additional Materials: Fuse switch connectors are installed directly into the electrical system without requiring additional materials such as adhesives or consumables.
Installation Method: Installation is conducted manually using standard hand tools. An energy consumption of 0.01 kWh/kg is considered a standard assumption for manual installation activities.
A5 – End-of-Life Waste Management
Transport to Waste Facility: The average distance to the recycling or disposal facility is assumed to be 50 km, carried out by a lorry (>32 metric tons, EURO 5 standard).
Packaging Waste: Fuse switch connectors are typically packaged using wooden boxes or cardboard. Untreated wood waste is assumed to be incinerated with energy and heat recovery, following the EU waste wood packaging scenario.

PRODUCT END OF LIFE (C1-C4, D)

At end of life, fuse switch connectors are manually removed from the electrical installation (C1), with a standard energy consumption of 0.01 kWh/kg, consistent with typical assumptions for small electrical components. After dismantling, products are transported to waste treatment facilities (C2), with average assumed distances of 250 km to recycling facilities and 50 km to landfill, using 16–32 t EURO 6 lorries. In the waste processing stage (C3), end-of-life treatment depends on material type: plastic and rubber components are assumed to be 23% recycled, 50% incinerated with energy recovery, and 27% landfilled; copper components are assumed to be 60% recycled and 40% landfilled; aluminium components are assumed to be 70% recycled and 30% landfilled; and steel components are assumed to be 85% recycled and 15% landfilled. Recycling and incineration processes are assumed to take place within Europe. The non-recycled fractions are disposed of in landfill (C4) and modelled using standard European landfill datasets.
D – Benefits and Loads Beyond the System Boundary
Includes loads and benefits beyond the system boundary (Module D) arising from energy recovery through incineration of plastics, rubber, and packaging materials and from recycling of metals. Benefits are calculated from the substitution of average European energy production (for incinerated fractions) and average European primary metal production (for recycled metal fractions), while all treatment-related loads are accounted for to avoid double counting. Substituted processes are modelled using European average datasets representative of current conditions, with the

reference year aligned with the background database used in One Click LCA, in accordance with EN 15804 and EPD Hub PCR requirements.
The end-of-life scenarios applied in modules C1–C4 and D reflect current and commonly used practices in Europe and are considered representative of one of the most likely end-of-life scenarios for fuse switch connectors.

LIFE CYCLE FLOW DIAGRAM



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	Multiple products
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	9.8% - 28%

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 v3.2.5. 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‘.

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	7.85E+00	5.87E-02	2.58E-02	7.93E+00	ND	5.54E-01	ND	ND	ND	ND	ND	ND	ND	3.61E-03	2.82E-02	1.17E-02	8.56E-01	-1.57E-01
GWP – fossil	kg CO_2e	7.76E+00	5.87E-02	5.63E-01	8.38E+00	ND	1.53E-02	ND	ND	ND	ND	ND	ND	ND	3.60E-03	2.82E-02	1.17E-02	8.56E-01	-3.90E-02
GWP – biogenic	kg CO_2e	8.19E-02	1.17E-05	-5.39E-01	-4.57E-01	ND	5.39E-01	ND	ND	ND	ND	ND	ND	ND	3.68E-07	6.15E-06	-2.72E-05	6.75E-06	-1.18E-01
GWP – LULUC	kg CO_2e	1.08E-02	2.62E-05	2.36E-03	1.32E-02	ND	1.65E-05	ND	ND	ND	ND	ND	ND	ND	3.69E-07	1.24E-05	1.42E-05	5.00E-06	-5.79E-05
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	7.83E-08	8.64E-10	3.53E-08	1.14E-07	ND	2.35E-10	ND	ND	ND	ND	ND	ND	ND	5.52E-11	4.03E-10	1.49E-10	1.93E-10	-4.82E-10
Acidification potential	mol H^+e	3.61E-02	2.01E-04	3.03E-03	3.94E-02	ND	9.46E-05	ND	ND	ND	ND	ND	ND	ND	3.25E-05	9.39E-05	1.35E-04	1.29E-04	-2.45E-04
EP-freshwater[2)]	kg Pe	2.90E-01	4.90E-06	5.84E-05	2.90E-01	ND	3.15E-06	ND	ND	ND	ND	ND	ND	ND	1.04E-07	2.22E-06	7.22E-06	1.63E-06	-2.45E-05
EP-marine	kg Ne	6.33E-03	6.61E-05	7.75E-04	7.17E-03	ND	8.55E-05	ND	ND	ND	ND	ND	ND	ND	1.51E-05	3.05E-05	3.00E-05	2.85E-04	-3.77E-05
EP-terrestrial	mol Ne	5.73E-02	7.18E-04	7.53E-03	6.56E-02	ND	4.12E-04	ND	ND	ND	ND	ND	ND	ND	1.65E-04	3.32E-04	3.39E-04	6.35E-04	-3.71E-04
POCP ("smog")[3)]	kg NMVOCe	2.41E-02	2.96E-04	2.08E-03	2.65E-02	ND	1.32E-04	ND	ND	ND	ND	ND	ND	ND	4.93E-05	1.32E-04	1.00E-04	1.65E-04	-1.18E-04
ADP-minerals & metals[4)]	kg Sbe	8.81E-05	1.65E-07	2.36E-06	9.06E-05	ND	3.98E-08	ND	ND	ND	ND	ND	ND	ND	1.29E-09	9.20E-08	7.93E-07	3.10E-08	-4.96E-08
ADP-fossil resources	MJ	6.41E+01	8.49E-01	3.05E+01	9.55E+01	ND	2.05E-01	ND	ND	ND	ND	ND	ND	ND	4.72E-02	3.96E-01	1.52E-01	1.40E-01	-6.37E-01
Water use[5)]	m^3e depr.	2.20E+00	4.33E-03	2.60E+00	4.81E+00	ND	4.36E-03	ND	ND	ND	ND	ND	ND	ND	1.18E-04	1.87E-03	2.66E-03	2.30E-02	-1.26E-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	4.26E-07	5.85E-09	2.10E-08	4.52E-07	ND	2.00E-09	ND	ND	ND	ND	ND	ND	ND	9.25E-10	2.26E-09	1.85E-09	8.81E-10	-2.06E-09
Ionizing radiation[6)]	kBq U235e	1.98E-01	7.35E-04	1.21E+00	1.41E+00	ND	4.96E-04	ND	ND	ND	ND	ND	ND	ND	2.09E-05	3.30E-04	1.12E-03	1.68E-04	-1.23E-02
Ecotoxicity (freshwater)	CTUe	1.47E+02	1.30E-01	9.73E+00	1.57E+02	ND	1.33E-01	ND	ND	ND	ND	ND	ND	ND	2.60E-03	6.31E-02	8.85E-02	6.31E+00	-1.01E+00
Human toxicity, cancer	CTUh	1.36E-08	9.60E-12	5.70E-10	1.42E-08	ND	6.50E-12	ND	ND	ND	ND	ND	ND	ND	3.71E-13	4.78E-12	1.02E-11	2.72E-11	-6.89E-12
Human tox. non-cancer	CTUh	7.83E-08	5.46E-10	4.49E-09	8.33E-08	ND	3.40E-10	ND	ND	ND	ND	ND	ND	ND	5.87E-12	2.48E-10	6.81E-10	1.56E-09	-2.70E-10
SQP[7)]	-	1.79E+01	8.54E-01	1.53E+01	3.41E+01	ND	1.47E-01	ND	ND	ND	ND	ND	ND	ND	3.30E-03	2.45E-01	2.94E-01	1.34E-01	-1.97E-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	7.35E+00	1.17E-02	3.25E-01	7.69E+00	ND	-5.06E+00	ND	ND	ND	ND	ND	ND	ND	2.99E-04	5.50E-03	2.73E-02	3.39E-03	8.05E-01
Renew. PER as material	MJ	1.26E-02	0.00E+00	3.54E+00	3.55E+00	ND	-3.54E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	-1.23E-02	1.17E+00
Total use of renew. PER	MJ	7.36E+00	1.17E-02	3.86E+00	1.12E+01	ND	-8.60E+00	ND	ND	ND	ND	ND	ND	ND	2.99E-04	5.50E-03	2.73E-02	-8.91E-03	1.98E+00
Non-re. PER as energy	MJ	8.29E+01	8.49E-01	3.00E+01	1.14E+02	ND	2.05E-01	ND	ND	ND	ND	ND	ND	ND	4.72E-02	3.96E-01	1.52E-01	-1.43E+01	-6.37E-01
Non-re. PER as material	MJ	8.23E+00	0.00E+00	-1.59E-01	8.07E+00	ND	-2.09E-03	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	-8.06E+00	7.80E-02
Total use of non-re. PER	MJ	9.11E+01	8.49E-01	2.99E+01	1.22E+02	ND	2.03E-01	ND	ND	ND	ND	ND	ND	ND	4.72E-02	3.96E-01	1.52E-01	-2.23E+01	-5.59E-01
Renew. secondary fuels	MJ	5.84E-03	4.60E-06	4.65E-03	1.05E-02	ND	1.15E-06	ND	ND	ND	ND	ND	ND	ND	5.12E-08	2.26E-06	8.48E-06	1.45E-06	-5.55E-07
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	1.01E-01	1.25E-04	3.15E-02	1.33E-01	ND	-3.73E-04	ND	ND	ND	ND	ND	ND	ND	3.12E-06	5.27E-05	7.75E-05	-2.88E-04	-2.91E-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	1.35E+00	2.17E-03	2.76E-02	1.38E+00	ND	1.22E-03	ND	ND	ND	ND	ND	ND	ND	5.25E-05	7.81E-04	1.04E-03	8.67E-03	-2.59E-03
Non-hazardous waste	kg	1.32E+01	4.14E-02	2.23E+00	1.55E+01	ND	6.76E-01	ND	ND	ND	ND	ND	ND	ND	7.15E-04	1.49E-02	3.53E-02	1.01E+00	-1.24E-01
Radioactive waste	kg	9.27E-05	1.79E-07	4.60E-04	5.53E-04	ND	1.24E-07	ND	ND	ND	ND	ND	ND	ND	5.12E-09	8.09E-08	2.87E-07	4.15E-08	-3.16E-06

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	1.57E+00	1.57E+00	ND	1.35E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	4.95E-01	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	0.00E+00	2.63E-01	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	4.80E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	1.98E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Heat	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	2.82E-01	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	7.75E+00	5.84E-02	5.55E-01	8.37E+00	ND	2.66E-02	ND	ND	ND	ND	ND	ND	ND	3.59E-03	2.81E-02	1.16E-02	8.56E-01	-3.89E-02
Ozone depletion Pot.	kg $CFC_{-11}e$	7.37E-08	6.90E-10	2.81E-08	1.03E-07	ND	1.89E-10	ND	ND	ND	ND	ND	ND	ND	4.37E-11	3.22E-10	1.23E-10	1.61E-10	-4.00E-10
Acidification	kg SO_2e	3.03E-02	1.53E-04	2.42E-03	3.29E-02	ND	6.91E-05	ND	ND	ND	ND	ND	ND	ND	2.29E-05	7.19E-05	1.09E-04	9.09E-05	-2.08E-04
Eutrophication	kg PO_4^3e	6.16E-03	3.82E-05	3.43E-03	9.63E-03	ND	2.84E-05	ND	ND	ND	ND	ND	ND	ND	5.34E-06	1.76E-05	1.57E-05	4.11E-05	-2.21E-05
POCP (“smog”)	kg C_2H_4e	2.15E-03	1.36E-05	1.36E-04	2.30E-03	ND	8.00E-06	ND	ND	ND	ND	ND	ND	ND	1.71E-06	6.45E-06	6.45E-06	7.33E-06	-1.17E-05
ADP-elements	kg Sbe	6.96E-05	1.60E-07	2.35E-06	7.22E-05	ND	3.84E-08	ND	ND	ND	ND	ND	ND	ND	1.26E-09	8.98E-08	7.91E-07	2.46E-08	-4.88E-08

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADP-fossil	MJ	8.72E+01	8.38E-01	3.03E+01	1.18E+02	ND	1.97E-01	ND	ND	ND	ND	ND	ND	ND	4.68E-02	3.91E-01	1.33E-01	1.37E-01	-4.19E-01

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	7.77E+00	5.87E-02	5.65E-01	8.39E+00	ND	1.54E-02	ND	ND	ND	ND	ND	ND	ND	3.61E-03	2.82E-02	1.17E-02	8.56E-01	-3.91E-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

1. Electricity, France, residual mix, 2022, France, One Click LCA, 0.20 kgCO2e/kWh

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	-
Water use (m^3)	-
Ancillary materials: type and mass (kg)	-
Waste materials: type and mass (kg)	- Packaging Waste: Fuse switch connectors are typically packaged using wooden boxes or cardboard. Untreated wood waste is assumed to be incinerated with energy and heat recovery, following the EU waste wood packaging scenario.
Waste materials: output routes	-
Direct emissions (kg)	-

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	-
Collection process: Mixed waste (kg)	-
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0.49
Recovery: energy recovery (kg)	0.26
Disposal (kg)	0
Scenario assumptions e.g. transportation (mode, km) & other	-

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

Yazan Badour as an authorized verifier for EPD Hub Limited 23.06.2026

VERIFIED ISO 14025