SMISSLINE- S400 (M,E,P) MCBS - 0.5A TO 63A, 1,2,3,4, 1P+N & 3P+N POLES, B,C,D AND K CURVES

PEP ecopassport®

Product Environmental Profile

Document in compliance with ISO 14025: 2010 "Environmental labels and declarations. Type III environmental declarations"

ORGANIZATION		CONTACT INFORMATION	
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ADDRESS OF THE ASSEMBLY SITE		WEBSITE	
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STATUS	SECURITY LEVEL	REGISTRATION NUMBER	PAGE
Approved	Public	ABBG-00557-V01.01-EN	1/15

ABB Purpose & Embedding Sustainability

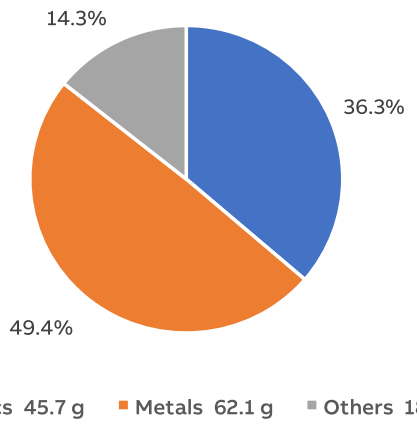
ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow.
With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

This study is related to ABB Schweiz AG plant that produces MCBs in different ranges. The plant already has the following certifications besides product standard certifications:
•ISO 9001
•ISO 14001
•ISO 45001
•ISO/TS 22163:2017

General Information

Reference product	S400M -(2CCS571001R0134) Miniature Circuit Breaker - 1P - C - 13 A
Description of the product	Miniature Circuit Breaker (MCB), 1 Pole, 13A, 440 V AC, C Curve, 10kA MCB is widely used for domestic and industrial applications, the purpose of a Miniature circuit breaker (MCB) is as a protective device to protect the infrastructure from overload and short circuit. Parallelly MCB can be used for ON/OFF of the electric current.
Functional unit	Protect the Household/ commercial installation from overloads and short circuits in a circuit with rated voltage 440 V AC, rated current 13A with 1 Pole (1P), a rated Breaking capacity 10kA and tripping curve C, according to the appropriate use scenario, and during the reference service life of the product of 20 years
Other products covered	It is a "Product family declaration" which covers Miniature Circuit Breaker (MCB) - S400 Series - S400E and S400P with Standard Product Characteristics Rated current (In): 0.5A to 63A, Rated Voltage (Ue): 440 V AC Number of Poles (Np): 1Pole,2Poles , 3 Poles, 4Poles 1Pole +N & 3 Pole +N, C Curve Rated Breaking Capacity(Icn): 10kA,15kA and 25kA Tripping Curve (Cd): B,C,D and K Curves

Constituent Materials



Total weight of Reference product	125.8	**g**

Total weight of reference product also included product packaging

Plastics as % of weight		**Metals as % of weight**		**Others as % of weight**	
Name and CAS number	Weight%	Name and CAS number	Weight%	Name and CAS number	Weight%
PA Glass Reinforced	31.7	Steel,	37.9	Carton/Packaging	14.2
POM, 9002-81-7	3.2	Copper, 7440-50-8	9.1	Miscellaneous Other material	0.1
Miscellenous Plastics	1.4	Aluminum, 7429-90-5	1.8	–	–
–	–	Miscellaneous Metals	0.6	–	–

These products comply with actual requirements of EU Directives 2011/65/EU of 8 June 2011 (ROHS) materials and do not contain or only contain in the authorised proportions lead, mercury, cadmium, hexavalent chromium or flame retardants (polybrominated biphenyls -PBB, polybrominated diphenyl ethers - PBDE) as mentioned in the Directive.

Manufacturing,distribution,Installation,Use and End-of-life stages are taken into consideration in the environmental impact analysis of this study.

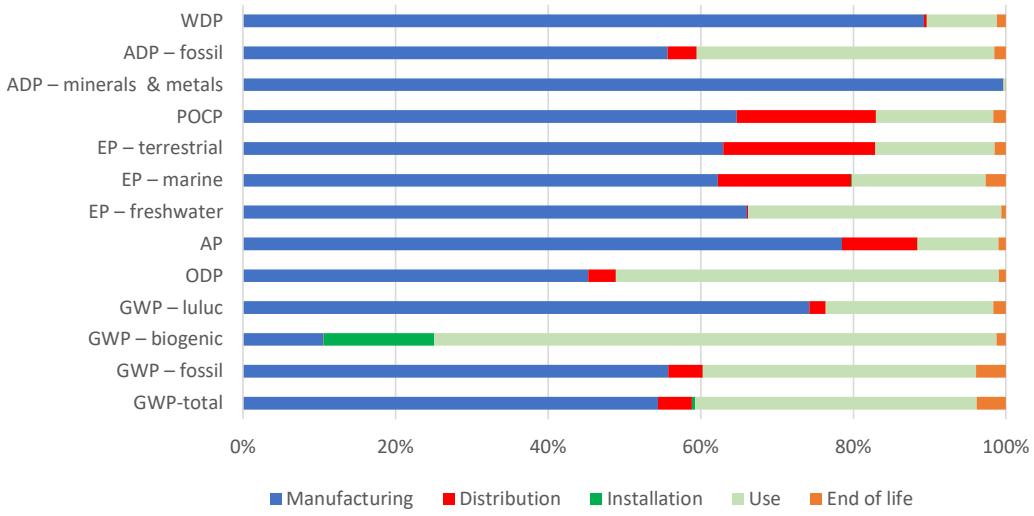
Additional Information

Manufacturing	Manufactured at ABB Schweiz AG that is ISO 14001 Certified. In the manufacturing stage, raw material and the processes are considered. Packaging of the raw material, transport to the manufacturing site is considered.
Distribution	Distribution to different countries is modelled by considering the average distances from manufacturing site to distance at delivery point. The distribution is done globally to various countries with complete packaging.
Installation	End of life of MCB packaging considered in Installation phase.
Use	MCB does not require special maintenance or operations or consumables. And does not need any special process while in use.The energy consumption of the MCB is 2.398kWh at 15% loading rate.
End of life	Standard procedure according to PCR has been considered.

Environmental impacts

Reference lifetime	20 Years
Product category	Circuit Breakers
Installation elements	Does not required any special process. Packaging waste generated as output in installation phase.
Use scenario	At loading rate 15% of rated current & use time rate 30% of reference lifetime total energy consumption is 2.398kWh
Geographical representativeness	Manufacutring Stage - Europe Distribution, Installation, Use and End of Life stages - Global
Technological representativeness	Technology is specific to ABB MCBs which is common for all ABB manufacturing factories at global level
Software and database used	SimaPro 9.5.0.2 and Data base Ecoinvent 3.9
Energy model used	
Manufacturing	Electricity Medium Voltage, Switzerland and Bulgaria
Installation	Electricity Mediun Voltage, Global
Use	Electricity Medium Voltage, Global
End of life	Electricity Medium Voltage, Global

Common base of mandatory indicators



% Environmental Impact per Life Cycle Stage of Reference Product

Environmental impact indicators

Indicator	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
GWP-total	kg CO_2 eq.	2.46E+00	1.34E+00	1.08E-01	1.12E-02	9.09E-01	9.46E-02
GWP-fossil	kg CO_2 eq.	2.39E+00	1.33E+00	1.08E-01	7.00E-04	8.55E-01	9.36E-02
GWP-biogenic	kg CO_2 eq.	7.24E-02	7.63E-03	1.05E-05	1.05E-02	5.33E-02	9.19E-04
GWP-luluc	kg CO_2 eq.	3.31E-03	2.46E-03	7.08E-05	3.13E-07	7.28E-04	5.45E-05
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	kg CFC-11 eq.	4.55E-08	2.06E-08	1.64E-09	1.44E-11	2.28E-08	4.27E-10
ODP = Depletion potential of the stratospheric ozone layer							
AP	H+ eq.	2.69E-02	2.11E-02	2.65E-03	3.03E-06	2.85E-03	2.68E-04
AP = Acidification potential, Accumulated Exceedance							
EP-freshwater	kg P eq.	2.40E-03	1.59E-03	4.26E-06	1.06E-07	7.97E-04	1.40E-05
EP-marine	kg N eq.	3.84E-03	2.39E-03	6.73E-04	3.57E-06	6.71E-04	1.02E-04
EP-terrestrial	mol N eq.	3.73E-02	2.35E-02	7.44E-03	1.04E-05	5.83E-03	5.55E-04
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	kg NMVOC eq.	1.12E-02	7.23E-03	2.04E-03	3.91E-06	1.72E-03	1.86E-04
POCP = Formation potential of tropo-spheric ozone							
ADP-minerals & metals	kg Sb eq.	5.22E-04	5.20E-04	1.31E-07	3.68E-09	1.53E-06	3.16E-07
ADP-fossil	MJ	3.55E+01	1.98E+01	1.36E+00	6.00E-03	1.38E+01	5.49E-01
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic deple-tion for fossil resources potential							
WDP	m^3 e depr.	9.86E-01	8.79E-01	3.84E-03	2.05E-04	9.03E-02	1.17E-02
WDP = Water Deprivation potential							

Common base of mandatory indicators

Inventory flows indicator – Resource use indicators

Indicator	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
PERE	MJ	7.91E+00	3.31E+00	1.05E-02	5.06E-04	4.55E+00	4.37E-02
PERM	MJ	2.65E-01	2.65E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	8.18E+00	3.58E+00	1.05E-02	5.06E-04	4.55E+00	4.37E-02
PENRE	MJ	3.40E+01	1.84E+01	1.36E+00	6.00E-03	1.37E+01	5.49E-01
PENRM	MJ	1.38E+00	1.38E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	3.54E+01	1.98E+01	1.36E+00	6.00E-03	1.37E+01	5.49E-01

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)

Inventory flows indicator – Indicators describing the use of secondary materials, water, and energy re-sources

Indicator	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.87E-02	2.71E-02	1.28E-04	7.91E-06	1.11E-02	3.27E-04

SM = Use of secondary material
RSF = Use of renewable secondary fuels
NRSF = Use of non-renewable secondary fuels
FW = Use of net fresh water

Inventory flows indicator – Waste category indicators

Indicator	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
Hazardous waste disposed	kg	3.19E-04	2.82E-04	7.12E-06	3.34E-08	2.59E-05	3.94E-06
Non- hazardous waste disposed	kg	3.98E-01	2.60E-01	2.82E-02	1.78E-03	4.43E-02	6.34E-02
Radioactive waste disposed	kg	1.14E-04	5.67E-05	1.68E-07	8.74E-09	5.65E-05	5.95E-07

Common base of mandatory indicators

Inventory flows indicator – Output flow indicators

Indicator	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	1.41E-02	2.06E-03	0.00E+00	1.20E-02	0.00E+00	0.00E+00
Materials for energy recovery	kg	4.72E-03	2.26E-04	0.00E+00	4.49E-03	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Inventory flow indicator – other indicators

Indicator	Unit	Total
Biogenic carbon content of the product	kg of C	0.00E+00
Biogenic carbon content of the associated packaging	kg of C	8.90E-03

Optional indicators

Environmental indicators

Indicator	Unit	Total	Manu-facturing	Distri-bution	Instal-lation	Use	End of life
Total use of primary energy during the life cycle	MJ	4.36E+01	2.33E+01	1.37E+00	6.50E-03	1.83E+01	5.93E-01
Emissions of fine particles	incidence of diseases	9.64E-08	7.91E-08	3.89E-09	3.90E-11	8.77E-09	4.63E-09
Ionizing radiation, human health	kBq U235 eq.	4.78E-01	2.33E-01	7.31E-04	3.58E-05	2.41E-01	2.45E-03
Ecotoxicity (fresh water)	CTUe	2.47E+01	2.27E+01	7.25E-01	1.70E-02	9.82E-01	2.67E-01
Human toxicity, carcinogenic effects	CTUh	5.12E-09	4.16E-09	4.40E-11	1.07E-12	1.95E-10	7.19E-10
Human toxicity, non-carcinogenic effects	CTUh	2.53E-07	2.32E-07	7.74E-10	2.98E-11	6.73E-09	1.35E-08
Impact related to land use/soil quality	kg	2.11E+00	1.64E+00	1.15E-01	1.40E-03	2.72E-01	8.46E-02

Extrapolation of Coefficients
Extrapolation rules are established according to EN 50693. Results of LCA performed for a reference product extrapolated to other products, these products are belonged to a same homogeneous product family as the reference product. The group of products have the following same characteristics:
-Same main function, Same product standards,
-Similar manufacturing technology: same type of materials and manufacturing processes
Coefficients factors have been extrapolated with division of environment indicators value of homogeneous product by reference product environment indicator value.

For other products than the Reference product covered by this PEP, the environmental impacts for each phase of the lifecycle are obtained by multiplying the values of the Reference product by the following coefficients:

Note: If the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product.

Manufacturing and Distribution phase: To calculate environmental impact of covered product, nominal value of reference product environment category to be multiplied with corresponding rating Impact category's coefficient, then value to be multiplied by the number of poles.
i.e. y=a*x/2*n
Where a= Coefficient of corresponding rating impact category
y= Homogeneous product environmental category
x=Nominal value of reference product environmental category
n=Number of poles including neutral poles

	S400M				S400E		S400P		
Rating	B	C	D	K	B	C	B	C	K
0.5	N/A	1.026	N/A	1.066	N/A	N/A	N/A	N/A	N/A
1	N/A	1.042	N/A	1.082	N/A	N/A	N/A	N/A	N/A
1.6	N/A	1.038	N/A	1.078	N/A	N/A	N/A	N/A	N/A
2	N/A	1.030	N/A	1.070	N/A	N/A	1.070	1.057	1.098
3	N/A	1.019	N/A	1.058	N/A	N/A	1.059	1.045	1.086
4	1.040	1.026	N/A	1.066	N/A	N/A	1.081	1.053	1.093
6	1.014	1.001	1.034	1.039	1.014	1.001	1.054	1.026	1.066
8	1.012	0.998	1.031	1.037	1.012	0.998	1.051	1.024	1.063
10	0.997	0.983	1.016	1.021	0.997	0.983	1.036	1.008	1.047
13	1.008	**1.000**	1.027	1.033	1.008	0.994	1.047	1.020	1.059
16	1.010	0.996	1.029	1.034	1.010	0.996	1.049	1.021	1.061
20	1.031	1.018	1.051	1.057	1.031	1.017	1.071	1.044	1.084
25	1.047	1.033	1.067	1.073	1.047	1.033	1.087	1.059	1.100
32	1.053	1.039	1.073	1.079	1.053	1.039	1.094	1.066	1.107
40	1.034	1.020	1.054	1.059	1.034	1.020	1.074	1.046	1.086
50	1.152	1.136	1.174	1.181	1.087	1.072	1.129	1.100	1.143
63	1.138	1.122	1.160	1.166	1.138	1.122	1.181	1.152	1.197

Use phase: To calculate environmental impact of covered product, nominal value of reference product environment category to be multiplied with corresponding rating Impact category's coefficient, then value to be multiplied by the number of poles.

i.e. y=a*x/2*n

Where a= Coefficient of corresponding rating impact category

y= Homogeneous product environmental category

x=Nominal value of reference product environmental category

n=Number of poles including neutral poles

	S400M				S400E		S400P		
Rating	B	C	D	K	B	C	B	C	K
0.5	N/A	0.619	N/A	1.008	N/A	N/A	N/A	N/A	N/A
1	N/A	0.702	N/A	1.072	N/A	N/A	N/A	N/A	N/A
1.6	N/A	0.855	N/A	1.312	N/A	N/A	N/A	N/A	N/A
2	N/A	0.667	N/A	1.028	N/A	N/A	0.657	0.657	0.657
3	N/A	0.648	N/A	1.043	N/A	N/A	0.608	0.608	0.608
4	0.860	0.860	N/A	1.041	N/A	N/A	0.655	0.655	0.655
6	0.888	0.888	1.189	1.189	0.888	0.888	0.799	0.799	0.799
8	0.694	0.694	0.915	0.915	0.694	0.694	0.600	0.600	0.600
10	0.838	0.838	0.986	0.986	0.838	0.838	0.641	0.641	0.641
13	1.000	1.000	1.250	1.250	1.000	1.000	0.833	0.833	0.833
16	1.060	1.060	1.262	1.262	1.060	1.060	0.959	0.959	0.959
20	1.006	1.006	1.105	1.105	1.006	1.006	0.986	0.986	0.986
25	1.202	1.202	1.325	1.325	1.202	1.202	1.140	1.140	1.140
32	1.565	1.565	1.868	1.868	1.565	1.565	1.464	1.464	1.464
40	1.815	1.815	2.051	2.051	1.815	1.815	1.815	1.815	1.815
50	1.849	1.849	2.096	2.096	1.849	1.849	1.849	1.849	1.849
63	2.740	2.740	2.740	2.740	2.740	2.740	1.000	2.740	2.740

Installation phase: To calculate environmental impact of covered product, nominal value of reference product environment category to be multiplied with the number of poles.

i.e. y=a*x/2*n

Where a= Coefficient of corresponding rating impact category

y= Homogeneous product environmental category

x=Nominal value of reference product environmental category

n=Number of poles including neutral poles

End of life phase: To calculate environmental impact of covered product, nominal value of reference product environment category to be multiplied with corresponding rating Impact category's coefficient, then value to be multiplied by the number of poles.

i.e. y=a*x/2*n

Where a= Coefficient of corresponding rating impact category

y= Homogeneous product environmental category

x=Nominal value of reference product environmental category

n=Number of poles including neutral poles

The use phase for Industrial application is at 50% of the energy consumption and 15% for Commercial or Residential use.

	S400M				S400E		S400P		
Rating	B	C	D	K	B	C	B	C	K
0.5	N/A	1.031	N/A	1.077	N/A	N/A	N/A	N/A	N/A
1	N/A	1.049	N/A	1.096	N/A	N/A	N/A	N/A	N/A
1.6	N/A	1.045	N/A	1.091	N/A	N/A	N/A	N/A	N/A
2	N/A	1.035	N/A	1.082	N/A	N/A	1.082	1.066	1.114
3	N/A	1.022	N/A	1.068	N/A	N/A	1.069	1.053	1.100
4	1.047	1.031	N/A	1.077	N/A	N/A	1.094	1.061	1.109
6	1.017	1.001	1.039	1.046	1.017	1.001	1.063	1.031	1.077
8	1.014	0.998	1.036	1.043	1.014	0.998	1.060	1.028	1.074
10	0.996	0.981	1.018	1.025	0.996	0.981	1.042	1.010	1.055
13	1.009	**1.000**	1.032	1.038	1.009	0.994	1.055	1.023	1.069
16	1.011	0.995	1.034	1.040	1.011	0.995	1.057	1.025	1.071
20	1.037	1.020	1.060	1.066	1.037	1.020	1.083	1.051	1.098
25	1.055	1.038	1.078	1.085	1.055	1.038	1.102	1.069	1.117
32	1.062	1.046	1.085	1.092	1.062	1.046	1.110	1.077	1.125
40	1.039	1.023	1.062	1.069	1.039	1.023	1.086	1.054	1.101
50	1.177	1.159	1.203	1.211	1.102	1.084	1.150	1.117	1.167
63	1.161	1.143	1.187	1.194	1.161	1.143	1.211	1.177	1.230

Environmental Impact Indicator Glossary

Impact indicators

Indicator	Description	Unit
Global warming potential (GWP) - total	Indicator of potential global warming caused by emissions to air contributing to the greenhouse effect. The total global warming potential (GWP-total) is the sum of three sub-categories of climate change. GWP-total = GWP-fossil + GWP-biogenic + GWP- land use and land use change	kg CO_2 eq.
Ozone depletion (OD)	Emissions to air that contribute to the destruction of the stratospheric ozone layer	kg CFC-11 eq.
Acidification of soil and water (A)	Acidification of soils and water caused by the release of certain gases to the atmosphere, such as nitrogen oxides and sulphur oxides	H+ eq.
Eutrophication (E)	Indicator of the contribution to eutrophication of water by the enrichment of the aquatic ecosystem with nutritional elements, e.g. industrial or domestic effluents, agriculture, etc. This indicator is divided to three: freshwater, marine and terrestrial.	kg P eq., kg N eq., mole N eq.
Photochemical ozone creation (POCP)	Indicator of emissions of gases that affect the creation of photochemical ozone in the lower atmosphere (smog) because of the rays of the sun.	kg NMVOC eq.
Depletion of abiotic resources – elements (ADPe)	Indicator of the depletion of natural non-fossil resources	kg Sb eq.
Depletion of abiotic resources – fossil fuels (ADPf)	The use of non-renewable fossil resources in an unsustainable way (e.g. from material to waste)	MJ (lower heating value)
Water Deprivation potential (WDP)	Deprivation-weighted water consumption. Assesses the potential of water deprivation, to either humans or ecosystems, building on the assumption that the less water remaining available per area, the more likely another user will be deprived.	m^3 e depr.

Resource use indicators

Indicator	Description	Unit
Total use of primary energy	Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) + Total use of renewable primary energy re-sources (primary energy and primary energy resources used as raw materials)	MJ (lower heating value)

Environmental Impact Indicator Glossary

Inventory flows indicator -Indicators describing the use of secondary materials, water, and

Indicator	Description	Unit
SM = Use of secondary material	Material recovered from previous use by recycling or from waste which substitutes primary materials and use in product.	kg
RSF = Use of renewable secondary fuels	Fuel recovered after a first use or retrieved from waste of renewable fuel, that replaces primary fuels.	MJ
NRSF = Use of non-renewable secondary fuels	Fuel recovered after a first use or retrieved from waste of non-renewable fuel, that replaces primary fuels.	MJ
FW = Use of net fresh water	Freshwater use in absolute values	m^3

Inventory flows indicator – Waste category indicators

Indicator	Description	Unit
Hazardous waste disposed	A hazardous waste is a special type of waste because it cannot be disposed of by common means like other by-products of our everyday lives.	Kg
Non- hazardous waste disposed	Non-hazardous waste is any waste that does not cause harm to people or the environment.	Kg
Radioactive waste disposed	Radioactive waste is a type of hazardous waste that contains radioactive material.	Kg

Inventory flows indicator – Output flow indicators

Indicator	Description	Unit
Components for reuse	Material or components leaving the modelled system boundary which is destined for reuse	Kg
Materials for recycling	Material leaving the modelled system boundary which is destined for recycling	Kg
Materials for energy recovery	Material leaving the modelled system boundary which is destined for use in power stations using secondary fuels.	Kg
Exported energy	Energy exported from waste incineration and landfill	MJ

Inventory flow indicator – other indicators

Indicator	Description	Unit
Biogenic carbon content of the product, and Biogenic carbon content of the associated packaging	Biogenic carbon is the carbon that is stored in biological materials, such as plants or soil.	kg of C

Environmental Impact Indicator Glossary

Inventory flow indicator – other indicators

Indicator	Description	Unit
Total use of primary energy during the life cycle	Sum of the primery renewable and non-renewable energy	MJ
Emissions of fine particles	Indicator of the potential incidence of disease due to particulate matter emissions.	incidence of diseases
Ionizing radiation, human health	Damage to human health and ecosystems linked to the emissions of radionuclides.	kBq U235 eq.
Ecotoxicity (fresh water)	Impact on freshwater organisms of toxic substances emitted to the environment.	CTUe
Human toxicity, carcinogenic effects and non-carcinogenic effects	Impact on humans of toxic substances emitted to the environment. Divided into non-cancer and cancer related toxic substances.	CTUh
Impact related to land use/soil quality	Measure of the changes in soil quality (Biotic production, Erosion resistance, Mechanical filtration).	kg

References

• Product Category Rules for Electrical, Electronic and HVAC-R Products - PEP-PCR–ed4-EN-2021 09 06

• SPECIFIC RULES FOR Electrical switchgear and control gear Solutions - PSR-0005-ed2-EN-2016 03 29

• IEC 60947-1 - Low-voltage switchgear and controlgear - Part 1: General rules

• IEC 60947-2 - Low-voltage switchgear and controlgear - Part 2: Circuit-breakers

• ISO 14067:2018 Greenhouse gases — Carbon footprint of products — requirements and guidelines for quantification

• ISO 14044 Environmental management — Life cycle assessment — Requirements and guidelines

• ISO14040 Environmental management — Life cycle assessment — Principles and framework

• ISO 14025 - Environmental management — Life cycle assessment — Principles and framework

• IEC/TR 62635 Guidelines for end-of-life information provided by manufacturers and recyclers and for recyclability rate calculation of electrical and electronic equipment

• IEC 62474 Material declaration for products of and for the electrotechnical industry

• EN 50693:2019 – Product category rules for life cycle assessments of electronic and electrical products and systems

Registration number:		Drafting Rules:	PCR-ed4-EN-2021 09 06
ABBG-00557-V01.01-EN		Supplemented by:	PSR-0005-ed3-EN-2023 06 06
Verifier accreditation number:		Information and reference documents:	
VH50		www.pep-ecopassport.org	
Date of issue:	05.2024	Validity period:	5 years

Independent verification of the declaration and data, in compliance with ISO 14025: 2010

Internal	○	External	◉

The PCR review was conducted by a panel of experts chaired by
Julie Orgelet (DDemain)

PEP are compliant with EN 50693:2019
The components of the present PEP cannot be compared with components from another program

Document in compliance with ISO 14025: 2010 "Environmental labels and declarations. Type III environmental declarations"