

SAGA™ SOCKET OUTLET WITH HINGED LID AND LOCK

PEP ecopassport®

Product Environmental Profile



Document in compliance with ISO 14025: 2006 "Environmental labels and declarations. Type III environmental declarations"

ORGANIZATION		CONTACT INFORMATION			
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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.



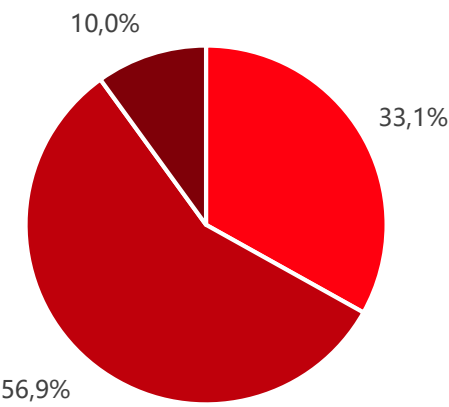
General Information

Reference product	Socket outlet with hinged lid and lock (2CKA002018A1572)
Description of the product	The product covered in this study is called Socket outlet with hinged lid and lock. It is a socket outlet used in private applications, in rooms which can be used by different renters of a multi dwelling unit. The product is often installed for the connection of washing machines and it is designed for indoor use only.
Functional unit	Connect/disconnect the plug of a load consuming 16A maximum under a voltage of 230V while protecting the user from direct contact with live parts during 20 years, with a protection class IP20 and IK03.
Other products covered	This EPD covers no other product variations than the one mentioned above (reference product).

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Constituent Materials



■ Plastics 38,08 g ■ Metals 65,44 g ■ Others 11,44 g

Total weight of Reference product	114,95	g
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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%
Polycarbonate	19,44	Stainless steel	7,44	Cardboard (packaging)	9,92
Polyamide 6 with 30% glass fibre	2,05	Low alloyed steel	2,30	Chemical Oil	0,03
Duroplast	10,87	Unalloyed steel	37,41	–	x
LDPE film (packaging)	0,77	Brass	9,78	–	x

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Additional Environmental Information

Manufacturing	<p>The Socket outlet with hinged lid and lock is produced at and delivered from two internal BJE sites in Germany. The thermoplastic moulding, assembly and packaging are performed in Bad Berleburg/Aue, while the metal parts stamping, storage and distribution take place at Lüdenscheid. No recycled material content is assumed and the manufacturing waste for all materials is included. All components are transported by lorry from the supplier to these two manufacturing sites.</p> <p>The energy BJE in Lüdenscheid purchases for the manufacturing consists of 58% hydropower, 23% solar power, and 19% CHP (combined heat and power). For the Bad Berleburg/Aue manufacturing site, this consists of 82% hydropower and 18%. Instead of hydropower, a German electricity market mix was modelled to avoid double counting of renewable energy. The remaining power and heating demand is met by combustion of natural gas, for which all CO₂ emissions are compensated through ClimatePartner. Nevertheless, this compensation is not accounted for in the model of this EPD.</p> <p>Production waste is assumed to be transported by lorry (100 km in line with the PSR) and treated by incineration (without energy recovery).</p> <p>Specific one-year data from 2022 on manufacturing site level was collected and allocated to the product by economic as well as mass partitioning following the requirements of ISO 14044.</p>
Distribution	<p>The transport scenario is estimated based on the distance to the capital city of the countries it is sold to, according to the sales data for 2022.</p>
Installation	<p>Installation is done manually without using energy or other auxiliary materials. Treatment of packaging waste is included in this stage, assuming the European end-of-life scenario mentioned in chapter 5.1.5.2.1 of the PSR.</p>
Use	<p>The power dissipation is 0,062 W which comes down to a power consumption of 0,98 kWh over its reference life time at a use time rate of 30% and a load rate of 30% since it is a passive product with non-continuous operation.</p>
End of life	<p>The standard scenario set in the PCR is considered.</p>
Benefits and loads beyond the system boundaries	<p>Steel has a recovery rate of 80% and brass has one of 60% according to the PCR. The Module D formula from the PCR was used to calculate the benefits of these components. Other materials were not included here due to a material recovery rate of 0. For the product packaging, the default (European) end-of-life data from chapter 3.1.5.2.1 of the PSR is used to determine the recycling rates. According to that, cardboard has a recovery rate of 82% and plastic has one of 41%, which are also included in this stage.</p>

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Environmental Impacts

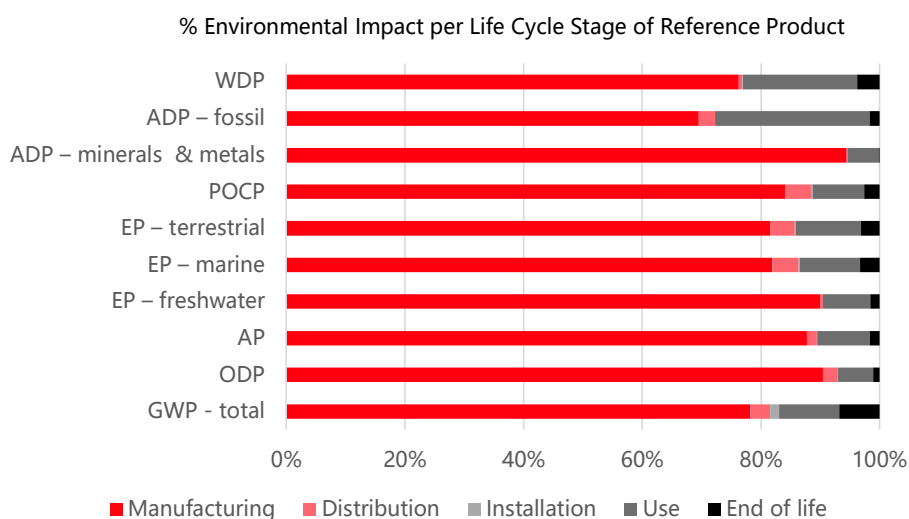
Reference lifetime	20 years
Product category	3.13 "Other equipment"
Installation elements	Not applicable
Use scenario	Passive product - non-continuous operation
Geographical representativeness	Production site data is for Germany, and all other data has a European scope.
Technological representativeness	Materials and process data are specific for the production of the SAGA™ Socket outlet with hinged lid and lock
Software and database used	SimaPro version 9.5.0.1, Ecoinvent 3.9.1

Energy model used

Manufacturing	Electricity, high voltage {DE} market for Cut-off, U Electricity, low voltage {DE} electricity production, photovoltaic, 3kWp slanted-roof installation, single-Si, panel, mounted Cut-off, U Natural gas, high pressure {DE} market for Cut-off, S
Installation	Not applicable
Use	Electricity, low voltage {SE} market for electricity, low voltage Cut-off, S Electricity, low voltage {NO} market for electricity, low voltage Cut-off, S Electricity, low voltage {FI} market for electricity, low voltage Cut-off, S
End of life	Not applicable

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Common base of mandatory indicators



Environmental impact indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Benefits
GWP-total	kg CO ₂ eq.	1,43E+00	1,12E+00	4,80E-02	2,12E-02	1,45E-01	9,78E-02	-1,66E-01
GWP-fossil	kg CO ₂ eq.	1,38E+00	1,10E+00	4,79E-02	3,34E-03	1,40E-01	9,73E-02	-1,68E-01
GWP-biogenic	kg CO ₂ eq.	4,14E-02	2,10E-02	3,82E-05	1,79E-02	2,09E-03	3,93E-04	1,93E-03
GWP-luluc	kg CO ₂ eq.	5,33E-03	2,76E-03	2,15E-05	4,13E-07	2,52E-03	3,23E-05	-3,06E-04
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.	4,16E-08	3,76E-08	1,02E-09	2,35E-11	2,48E-09	4,54E-10	-2,92E-09
ODP = Depletion potential of the stratospheric ozone layer								
AP	H ⁺ eq.	8,82E-03	7,74E-03	1,45E-04	4,66E-06	7,87E-04	1,40E-04	-3,25E-03
AP = Acidification potential, Accumulated Exceedance								
EP-freshwater	kg P eq.	8,31E-05	7,48E-05	3,67E-07	1,49E-08	6,66E-06	1,26E-06	-1,81E-05
EP-marine	kg N eq.	1,11E-03	9,10E-04	4,92E-05	1,92E-06	1,13E-04	3,63E-05	-2,60E-04
EP-terrestrial	mol N eq.	1,28E-02	1,04E-02	5,25E-04	1,99E-05	1,41E-03	3,94E-04	-3,22E-03
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.	4,85E-03	4,08E-03	2,18E-04	5,44E-06	4,24E-04	1,24E-04	-1,13E-03
POCP = Formation potential of tropospheric ozone								
ADP-minerals & metals	kg Sb eq.	7,44E-05	7,03E-05	1,49E-07	1,77E-09	3,84E-06	1,42E-07	-3,83E-05
ADP-fossil	MJ	2,44E+01	1,70E+01	6,57E-01	7,27E-03	6,38E+00	4,00E-01	-1,85E+00
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic depletion for fossil resources potential								
WDP	m ³ eq. depr.	4,15E-01	3,16E-01	2,52E-03	4,83E-04	7,98E-02	1,57E-02	-7,54E-02
WDP = Water Deprivation potential								
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Common base of mandatory indicators

Inventory flows indicator – Resource use indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
PERE	MJ	4,62E+00	2,12E+00	1,15E-02	9,85E-04	2,44E+00	5,00E-02	-2,55E-01
PERM	MJ	9,53E-02	9,53E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,66E-02
PERT	MJ	4,71E+00	2,21E+00	1,15E-02	9,85E-04	2,44E+00	5,00E-02	-3,32E-01
PENRE	MJ	2,43E+01	1,69E+01	6,57E-01	7,27E-03	6,33E+00	4,00E-01	-1,85E+00
PENRM	MJ	6,50E-02	6,50E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,90E-04
PENRT	MJ	2,44E+01	1,70E+01	6,57E-01	7,27E-03	6,33E+00	4,00E-01	-1,85E+00
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 resources								

Inventory flows indicator – Indicators describing the use of secondary materials, water, and energy resources

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
SM	kg	0,00E+00	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	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m³	1,86E-02	9,74E-03	9,49E-05	1,53E-05	8,24E-03	5,10E-04	-1,98E-03
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	Installation	Use	End of life	Bene- fits
Hazardous waste disposed	kg	4,22E-04	4,22E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste	kg	5,55E-02	3,47E-04	0,00E+00	2,58E-03	0,00E+00	5,26E-02	0,00E+00
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

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Common base of mandatory indicators

Inventory flows indicator – Output flow indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	2,74E-01	2,14E-01	0,00E+00	9,70E-03	0,00E+00	5,01E-02	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	0,00E+00

Inventory flow indicator – other indicators

Indicator	Unit	
Biogenic carbon content of the product	kg of C	0,00E+00
Biogenic carbon content of the associated packaging	kg of C	5,17E-03

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Optional indicators

Environmental indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
Total use of primary energy during the life cycle	MJ	2,91E+01	1,92E+01	6,68E-01	8,26E-03	8,77E+00	4,50E-01	-2,19E+00
Emissions of fine particles	incidence of diseases	6,12E-08	5,02E-08	3,17E-09	4,89E-11	4,22E-09	3,55E-09	-1,52E-08
Ionizing radiation, human health	kBq U235 eq.	2,16E-01	3,51E-02	3,86E-04	1,12E-05	1,78E-01	2,07E-03	-4,24E-03
Ecotoxicity (fresh water)	CTUe	1,47E+01	1,35E+01	3,52E-01	2,27E-02	5,43E-01	2,79E-01	-3,25E+00
Human toxicity, car-cinogenic effects	CTUh	7,90E-09	6,56E-09	1,96E-11	1,22E-12	1,26E-10	1,19E-09	-1,16E-09
Human toxicity, non- carcinogenic effects	incidence of diseases	9,24E-08	8,58E-08	5,75E-10	5,10E-11	5,00E-09	9,73E-10	-3,93E-08
Impact related to land use/soil quality		8,00E+00	5,51E+00	3,37E-01	6,01E-03	1,99E+00	1,52E-01	-1,64E+00

Other indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Installation	Use	End of life	Bene- fits
No Other indicators used								

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Environmental Impact Indicator Glossary


Impact indicators

Indicator	Description	Distribution
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 (ODP)	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 eq. depr.

Resource use indicators

Indicator	Description	Distribution
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 resources (primary energy and primary energy resources used as raw materials)	MJ (lower heating value)

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