

Environmental Product Declaration



In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

Altech Ball valves PS / Altech Kulventiler PS

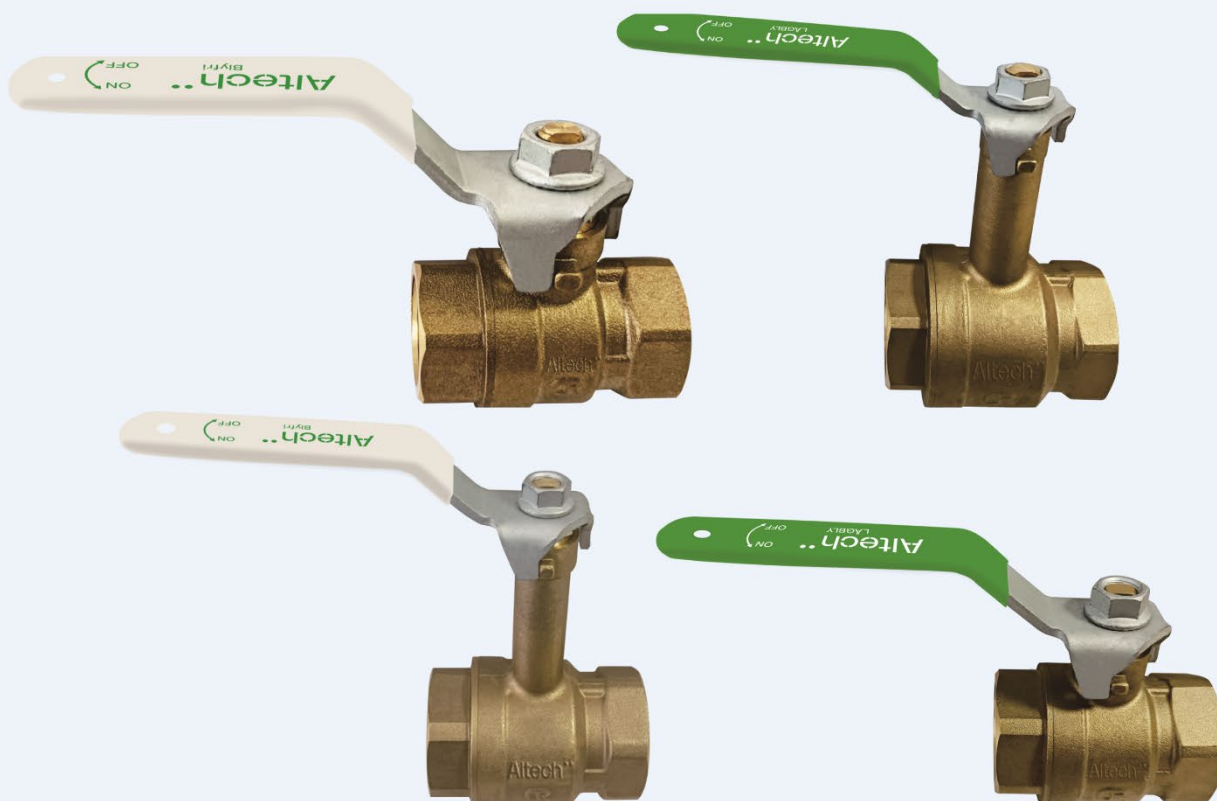
from

Saint-Gobain Building Distribution (SGDS)



Program:	The International EPD® System, www.environdec.com
Program operator:	EPD International AB
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*This EPD covers multiple products and is based on the average results of the product group.
An EPD should provide current information and may be updated if conditions change. The stated
validity is therefore subject to the continued registration and publication at www.environdec.com*



General information

Program Information

Program:	The International EPD® System
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CEN standard EN 15804:2012 +A2 (2019) serves as the Core Product Category Rules (PCR)

Product category rules (PCR): PCR 2019:14 Construction products (EN 15804: A2) (1.3.3)

PCR review was conducted by: *The Technical Committee of the International EPD® System. Chair: Claudia A. Peña. Contact via info@environdec.com*

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

☐ EPD process certification ☒ EPD verification

Third-party verifier: *Vladimir Koci, vladimir.koci@lcastudio.cz*



The procedure for follow-up of data during EPD validity involves third-party verifier:

☐ Yes ☒ No

The EPD owner has 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. EPDs made according to EN15804+A1, and EN15804+A2 are not comparable, especially since a majority of the environmental indicators are based on different versions. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD	Saint-Gobain Distribution Sweden
Contact	Beriar Maroof (beriar.maroof@sgdsgruppen.se)
Description of the organisation	SGDS Gruppen - specialists in collaboration for more efficient business in construction and installation. SGDS Gruppen AB is the head company of some of Sweden's leading trading companies in construction, sheet metal, tiles, and installation. All the companies have long and solid industry experience and provide most of Sweden's craftsmen with materials for various projects. Customers in different companies can also buy support items from the sister companies in the group. In selected cases, we take joint projects to facilitate the logistics of the supply of goods, which is then often critical for a smooth construction project. • Optimera - construction trade for professional carpenters • Dahl – heat, plumbing, and sanitary specialist • Bevego - building sheet metal, ventilation, and technical insulation • Kakelspecialisten and Konradsson's Tiles - tiles, tiling, and bathroom fittings The company focuses on sales and services, with direct contact with about 150,000 customers regularly. Saint-Gobain Distribution Sweden group (SGDS) is owned by Saint-Gobain with a presence in 64 countries and over 190 000 employees worldwide.
Location of production site	China

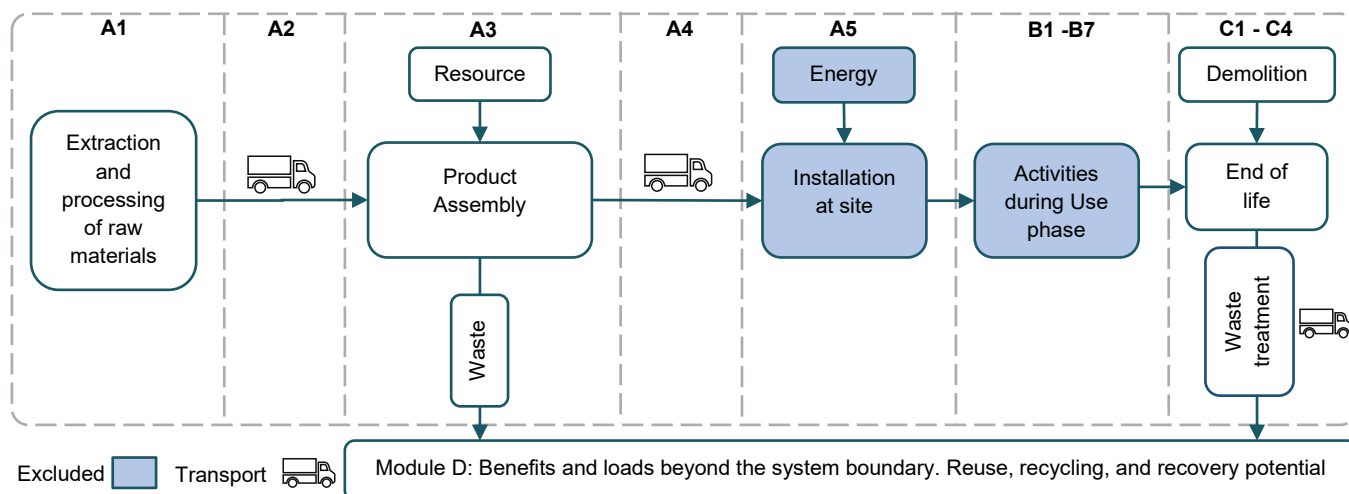


Product information

Product name	Altech Ball valves PS / Altech Kulventiler PS by SGDS Gruppen
Product Identification	Altech Ball valves PS / Altech Kulventiler PS
Product Description	Ball valves are mechanical devices used to control the flow of fluids through a system of pipes. They consist of a spherical closure with a hole (the ball) that can be rotated to either allow or block the flow of fluid. When the hole is aligned with the pipe, fluid can pass through; when it's perpendicular to the pipe, the flow is blocked. They can be installed in both indoors and outdoors.
UN CPC code	415 - Semi-finished products of copper, nickel, aluminium, lead, zinc and tin or their alloys
Use	As control devices in piping systems

LCA information

Functional unit	1 kg of Product
Reference service life	Not Declared
Database(s) and LCA software used	LCA for Experts (fka GaBi) with MLC Professional Database 2023.1 with an integrated Ecoinvent database 3.9.1
System boundaries	Cradle to Gate with options (A1-A3, A4, C1-C4, D).



The manufacturers procure raw materials and manufacture finished products. The finished products are then transported and distributed locally to customers across Sweden. Environmental impact data for the product stage, A1-A3 sub-modules are adopted from the manufacturer-provided data, and the transport associated with A4 from SGDS Gruppen's manufacturing units to local distribution in Sweden was assumed. The end-of-life reflects the Swedish market, for the credit for recovered material (module D) due to the avoided production, EU or GLO datasets were used.

Content Declaration

Product Components	Weight Percentage	Post-consumer materials weight %	Biogenic materials weight % and kg C / FU
Brass	85 – 90 %	0	0
Carbon Steel	< 8 %	0	0
PTFE	< 6 %	0	0
FKM	< 1 %	0	0
TPU Adhesive	< 1 %	0	0
Total Product weight	100 %	0	0
Packaging Materials	Weight (kg/FU)	Weight-% (versus the product)	Weight biogenic carbon, kg C / FU
Cardboard	0,0602	6,02 %	2,67E-02
Pallet	0,0064	0,64 %	2,64E-03
Total Packaging weight	0,0666	6,66 %	2,94E-02

FU – Functional Unit; For confidentiality reasons, the precise specification is not given here but was used in the calculations. This is the average material composition of the products considered.

Information on the biogenic carbon content

Biogenic carbon content	Unit per FU	Amount
Biogenic carbon content in the product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	2,94E-02

1 kg of biogenic carbon is equivalent to 44/12 kg of CO₂.

Information on energy content

Energy content	Unit per FU	Amount
Energy content in the product	MJ	7,06E-02

Data

Generic database data was used for the foreground data for raw materials, energy, transportation, packaging, and end-of-life. Specific data collected from the factory was used for manufacturing.

Data quality

All datasets used came from reputable databases Sphera MLC professional database (fka GaBi), version 2023.1, and Ecoinvent 3.9.1 database, with good technological representativeness and which represents China, Global, Sweden, or EU28 average for all the life cycle stages. As the specific data is less than 5 years old, the data quality can be considered good.

Time representativeness

The primary data (foreground data) used for the product manufacturing corresponds to the period from 1st April 2021 to 31st March 2022. The age of data from generic databases varies from 2019 to 2022.

Allocation

No co-product allocation has been applied since no co-products are generated, and therefore allocation has not been relevant.

Cut-off Criteria

The general rules for the exclusion of inputs and outputs follow the requirements in EN 15804+A2.

Further Information

This EPD uses 1 kg of Product with packaging as the functional unit for the life cycle assessment as it covers products with varying dimensions. An average material composition was assumed to include all products for the study.

Modules Declared

X = modules included; ND = Not Declared

	Product stage			Assembly stage		Use stage							End-of-life stage				BSB
	Raw materials	Transport	Manufacturing	Transport	Assembly*	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling-potential
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Declared	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	CN	CN	CN	GL	-	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Specific data used	> 90 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-Products	< 5 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-Sites	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-

BSB-Benefits & loads beyond system boundary; ND – Not Declared; X – Declared; Reading example: $9,0E-03 = 9,0 \cdot 10^{-3} = 0,009$

* Module A5 is only partially declared, GWP biogenic arising due to packaging material in A1-A3 stages are balanced in A5 where it exits the product system boundary.

Environmental Information

Potential environmental impact – indicators according to EN 15804+A2

Indicator	Unit	Results per functional unit: 1 kg of Product							
		A1–A3	A4	A5*	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	1,31E+01	2,28E-02	1,08E-01	0,00E+00	6,10E-03	4,08E-02	8,14E-02	-7,69E+00
GWP-fossil	kg CO ₂ eq.	1,33E+01	2,18E-02	ND	0,00E+00	5,82E-03	6,87E-02	1,18E-02	-7,64E+00
GWP-biogenic	kg CO ₂ eq.	-1,51E-01	1,04E-03	1,08E-01	0,00E+00	2,77E-04	-2,79E-02	6,95E-02	-3,38E-02
GWP-LULUC	kg CO ₂ eq.	1,25E-02	3,95E-09	ND	0,00E+00	4,21E-09	5,06E-06	5,27E-05	-1,03E-02
ODP	kg CFC-11 eq.	1,76E-04	2,19E-16	ND	0,00E+00	2,33E-16	1,31E-10	8,69E-11	-7,42E-05
AP	mole H ⁺ eq.	3,81E-01	4,02E-05	ND	0,00E+00	1,08E-05	7,76E-05	3,69E-05	-3,18E-01
EP-freshwater**	kg P eq.	2,83E-02	1,91E-09	ND	0,00E+00	7,12E-10	1,34E-06	3,74E-06	-2,52E-02
EP-marine	kg N eq.	2,48E-02	1,43E-05	ND	0,00E+00	3,83E-06	2,91E-05	2,41E-05	-1,71E-02
EP-terrestrial	mole N eq.	3,19E-01	1,58E-04	ND	0,00E+00	4,22E-05	3,05E-04	1,20E-04	-2,30E-01
POCP	kg NMVOC eq.	8,98E-02	2,96E-05	ND	0,00E+00	7,91E-06	7,87E-05	6,84E-05	-6,54E-02
ADP-minerals & metals***	kg Sb eq.	4,86E-03	6,74E-12	ND	0,00E+00	7,19E-12	5,84E-08	6,13E-09	-4,34E-03
ADP-fossil***	MJ	9,67E+01	1,27E-03	ND	0,00E+00	1,35E-03	2,09E-01	8,16E-02	-7,17E+01
WDP***	m ³	6,61E+00	8,12E-05	ND	0,00E+00	2,96E-05	1,70E-02	7,20E-04	-5,72E+00
Acronyms	GWP-total: Global Warming Potential; 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								

* A5 is only partially declared where only biogenic emission from the packaging was presented.

**Results in kg PO₄ eq. can be obtained by multiplying the results in kg P eq. by a factor of 3,07.

***Results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Additional Mandatory indicator

Results per functional unit: 1 kg of Product								
Indicator	Unit	A1–A3	A4	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq.	1,33E+01	2,18E-02	0,00E+00	5,82E-03	6,87E-02	1,18E-02	-7,65E+00

GWP-GHG 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. This means that the uptake and emissions of biogenic CO2 are “balanced out” already in modules A1-A3, instead of in modules A1-A5 (for packaging) or modules A-C (for product).

Use of resources

Results per functional unit: 1 kg of Product								
Indicator	Unit	A1–A3	A4	C1	C2	C3	C4	D
PERE	MJ	1,76E+01	1,15E-03	0,00E+00	1,22E-03	6,58E-02	-5,36E-03	-1,56E+01
PERM	MJ	1,20E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	1,88E+01	1,15E-03	0,00E+00	1,22E-03	6,58E-02	-5,36E-03	-1,56E+01
PENRE	MJ	9,76E+01	1,27E-03	0,00E+00	1,35E-03	2,09E-01	8,16E-02	-7,26E+01
PENRM	MJ	7,06E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	9,77E+01	1,27E-03	0,00E+00	1,35E-03	2,09E-01	8,16E-02	-7,26E+01
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	1,54E-01	3,32E-06	0,00E+00	2,21E-06	4,21E-04	7,54E-06	-1,33E-01

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 and Output Flows

Waste

Results per functional unit: 1 kg of Product								
Indicator	Unit	A1–A3	A4	C1	C2	C3	C4	D
HWD	kg	3,10E-10	-2,42E-13	0,00E+00	-2,58E-13	-4,20E-12	9,10E-12	-6,79E-11
NHWD	kg	2,40E-03	1,49E-06	0,00E+00	1,58E-06	6,93E-03	7,11E-02	-6,93E-03
RWD	kg	1,15E-05	4,33E-07	0,00E+00	4,62E-07	1,63E-05	-6,91E-06	-1,63E-06
Acronyms	HW Hazardous waste disposed; NHW Non-hazardous waste disposed; RW Radioactive waste disposed							

Output Flows

Results per functional unit: 1 kg of Product									
Indicator	Unit	A1–A3	A4	A5	C1	C2	C3	C4	D
CRU	kg	0,00E+00	0,00E+00	6,36E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,74E-01	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	1,29E-01	0,00E+00	0,00E+00	8,35E-02	0,00E+00	0,00E+00
EET	MJ	0,00E+00	0,00E+00	2,34E-01	0,00E+00	0,00E+00	1,50E-01	0,00E+00	0,00E+00
Acronyms	CRU Components for reuse; MFR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy								

Note: It is discouraged to use the results of modules A1-A3 (A1-A5 for services) without considering the results of module C.

Additional Requirements

Location-based electricity mix from the use of electricity in manufacturing

The manufacturing process has been modeled and calculated according to the national residual mix with data retrieved from the Energy Institute (2023).

National electricity grid	Data source	GWP excl. biogenic[kg CO ₂ -eq/kWh]
<i>Chinese Grid Mix*</i>	Energy Institute (2023)	9,47E-01

*As per the recommendations of the c-PCR, from the statistics provided by the Energy Institute, a conservative approach was adopted by subtracting renewables from the consumption mix on the market due to the non-availability of data on the residual energy mix of China.

Disclaimers

ILCD classification	Indicator	Disclaimer
ILCD Type 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD Type 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD Type 3	Abiotic depletion potential for non-fossil resources (ADP-minerals & metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted	2
	water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2

Disclaimer 1 – 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.

Disclaimer 2 – 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.

References

- EN 15804:2012+A2 Sustainability of construction works: Environmental product declaration – Core rules for the product category of construction products
- EPD International (2021) General Programme Instructions of the International EPD® System, version 4.0
- EPD International (2021) PCR 2019:14. Construction products and construction services (EN 15804: A2) v1.3.1.
- ISO 14020:2000 Environmental labels and declarations: General principles
- ISO 14025:2006 International Standard ISO 14025: Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- ISO 14040:2006 International Standard ISO 14040: Environmental Management – Life cycle assessment – Principles and framework. Second edition 2006-07-01.
- ISO 14044:2006 International Standard ISO 14044: Environmental Management – Life cycle assessment – Requirements and Guidelines.
- SCB (2023) https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START__MI__MI0305/MI0305T003/table/tableViewLayout1/
Accessed 2023-08-03
- Searates (2024) <https://www.searates.com/services/distances-time/>
Accessed 2024-02-03
- Energy Institute <https://www.energyinst.org/statistical-review>
Accessed 2024-03-25

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