THE INTERNATIONAL EPD® SYSTEM

Environmental Product Declaration

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

Diverter shower set, a-collection

from

Ahlsell AB

Programme	EPD International AB
Programme operator	The International EPD® System
EPD registration number	S-P-10609
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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

Programme information	
Programme	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website	www.environdec.com
E-mail	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification	
Product Category Rules (PCR)	Product Category Rules (PCR): Construction products, 2019:14, Version 1.3.1
Life Cycle Assessment (LCA)	Carbonzero AB
Third-party verification:	Independent third-party verification of the declaration and data, according to ISO 14025:2006: ☑ EPD process certification Vladimír Kocí, LCA Studio Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☑ No	

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

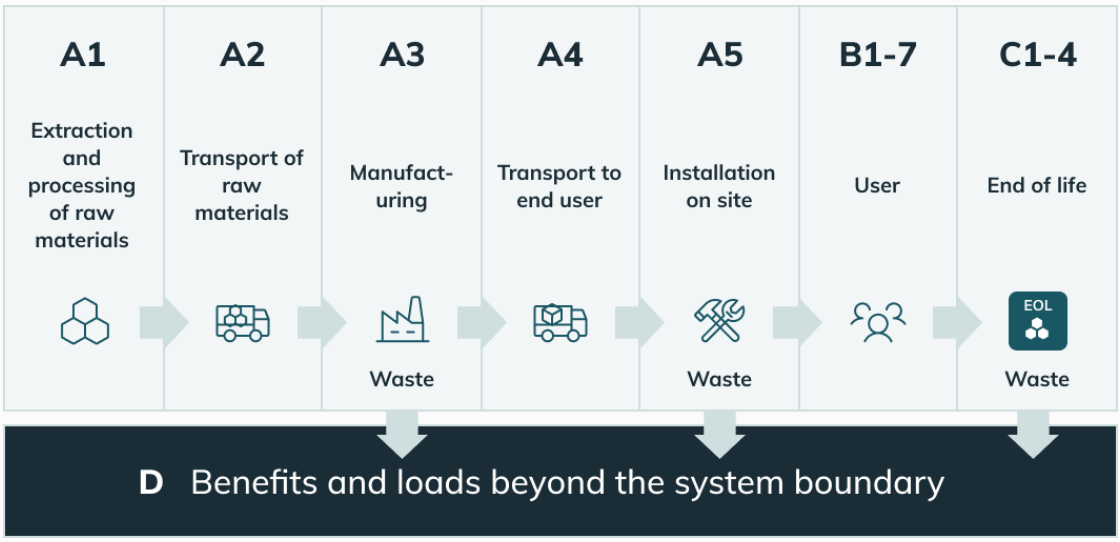
EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information	
Owner of the EPD	Ahlsell AB
Contact	Andrea Wästlund
Description of the organisation	Ahlsell is present where people reside, work, and live their lives. Ahlsell is currently the Nordic region's leading community-building distributor of installation products, tools, and supplies for installation, construction, real estate management, industrial and power companies, and the public sector. With around 7,500 employees, 300 stores, e-commerce, and four central warehouses, we are working daily to achieve our vision of building a more sustainable society.
Product-related or management system-related certifications:	ISO 9001 & ISO 14001
Name and location of production site(s):	**Name of plant:** Manufacturing plant **Location:** Sweden

Product information	
Product name(s)	CEILING & HAND SHOWER SET, WITH DIVERTER, ROUND, CHROME
Product description:	Ceiling shower set with thermostatic mixer c/c 150 or 160 mm. Colors: Chrome, Black, Gold, and Brushed Gold. The representative product was chosen because it had the highest GWP total impacts per kilogram of product amongst the included list of products. Therefore, this study represents the worst-case scenario, and products are grouped together as the difference in material composition per kilogram of product is < 10 %.
RSL	16 years
UN CPC code	42911 - Sinks, wash-basins, baths and other sanitary ware and parts thereof, of iron, steel, copper or aluminium

LCA information	
Functional unit / declared unit	1 kg of Ceiling Shower Set
Time representative-ness	Data obtained refer to the year 2022
System Boundary	The system boundaries are set to be "cradle-to-gate" with modules A4, B7, C1-C4, and D for end-of-life.
Database(s) and LCA software used	Eando X version 1.01

System diagram



A1	Raw material supply	This module considers the extraction and processing of all raw materials, energy, and transportation which occur upstream to the studied manufacturing process, including packaging material.
A2	Transport to the manufacturer	The raw materials are transported to the manufacturing site.
A3	Manufacturing	This module includes all resources used to produce and waste produced. This also includes additives and packaging material.
A4	Transport	Transportation from the manufacturing site to distribution centre and then from the distribution centre to the building site is included.
	Transport Scenario	Truck: 200km
A5	Construction installation	This stage is not included in this EPD, although the impact is expected to be negligible.
B1-B7	Use stage	B7: This module contains the production, heating, and wastewater treatment of tap water related to the use of washbasin faucets. The scenario for operational water use is described more precisely in the chapter “Additional Information”. B1-B6 stages are not included in this study.
C1	Deconstruction/Demolition	This stage includes the de-construction and/or demolition of the building. This is not relevant as the product included in this study is not used in the construction process.
C2	Transport	This stage represents the transport distance to the waste processing facility.
C3	Waste processing	This stage includes any waste treatment needed.
	EOL Scenario	Landfill 11.46%. Incineration 14.5%. Recycling 74.04%.
C4	Final disposal	This includes any material that is landfilled.
D	Benefits	Emission credits obtained from energy recovery and/or recycling materials

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beoyond system boundary
	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	X	X	X	X	X	X
Geography	CN	GL	SE	SE	-	-	-	-	-	-	-	SE	SE	SE	SE	SE	SE
Specific data used	Factory supplied specific data for A1- A3			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-Products	< 10 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation-Sites	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Content Information

Product Components	Weight, kg	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Metal	0.823	0.000	0.000
Plastic	0.096	0.000	0.000
Rubber	0.049	0.000	0.000
Polymer	0.032	0.000	0.000
Total	1.000	0.000	0.000

Packaging Materials	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Carton	0.338	33.780	0.150
Plastic wrapping	0.001	0.100	0.000
Polystyrene	0.309	30.910	0.000
EU pallet normal	0.171	17.120	0.071
Total	0.819	81.900	0.221

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither does the packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals)

Environmental Information

Potential environmental impact – indicators according to EN 15804+A2

Results per functional unit: 1 kg									
Indicator	Unit	A1 - A3	A4	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	6.11e+0	1.78e-2	1.62e+2	0.00e+0	7.14e-3	3.40e-1	4.26e-3	-2.57e+0
GWP-fossil	kg CO2 eq	6.08e+0	1.71e-2	1.61e+2	0.00e+0	6.84e-3	3.40e-1	4.33e-3	-2.57e+0
GWP-biogenic	kg CO2 eq	2.38e-2	7.30e-4	5.32e-1	0.00e+0	2.92e-4	1.25e-5	-6.41e-5	-2.64e-3
GWP-luluc	kg CO2 eq	5.93e-3	4.72e-7	5.40e-2	0.00e+0	1.89e-7	1.46e-5	5.42e-6	-2.33e-3
ODP	kg CFC-11 eq	1.61e-8	1.03e-15	2.99e-9	0.00e+0	4.13e-16	1.42e-13	7.58e-15	-5.32e-9
AP	mole H+ eq	6.50e-2	1.47e-4	5.28e-1	0.00e+0	5.88e-5	5.72e-5	1.58e-5	-4.57e-2
EP-freshwater	kg P eq	3.07e-3	2.20e-9	3.45e-3	0.00e+0	8.80e-10	4.14e-8	4.46e-9	-2.47e-3
EP-marine	kg N eq	6.10e-3	7.32e-5	1.95e-1	0.00e+0	2.93e-5	1.68e-5	3.99e-6	-3.22e-3
EP-terrestrial	mole N eq	7.15e-2	8.02e-4	1.69e+0	0.00e+0	3.21e-4	2.52e-4	4.39e-5	-3.97e-2
POCP	kg NMVOC eq	2.06e-2	1.38e-4	4.26e-1	0.00e+0	5.53e-5	4.83e-5	1.24e-5	-1.12e-2
ADP-minerals & metals	kg Sb eq	7.21e-4	1.14e-10	9.31e-5	0.00e+0	4.56e-11	1.25e-9	1.28e-10	-5.80e-4
ADP-fossil	MJ	9.91e+1	2.46e-1	1.73e+4	0.00e+0	9.84e-2	3.19e-1	6.40e-2	-3.56e+1
WDP	m3	2.25e+0	7.70e-5	1.35e+2	0.00e+0	3.08e-5	3.27e-2	1.11e-6	-1.05e+0
Acronyms	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								

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator*

Use of resources

Results per functional unit: 1 kg									
Indicator	Unit	A1 - A3	A4	B7	C1	C2	C3	C4	D
PERE	MJ	2.28e+1	1.35e-3	1.57e+4	0.00e+0	5.41e-4	7.51e-2	6.22e-3	-8.41e+0
PERM	MJ	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
PERT	MJ	2.16e+1	1.35e-3	1.57e+4	0.00e+0	5.41e-4	7.51e-2	6.22e-3	-7.42e+0
PENRE	MJ	9.16e+1	2.46e-1	1.73e+4	0.00e+0	9.84e-2	3.19e-1	6.40e-2	-2.95e+1
PENRM	MJ	4.99e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	-4.49e-1
PENRT	MJ	9.93e+1	2.46e-1	1.73e+4	0.00e+0	9.84e-2	3.19e-1	6.40e-2	-3.57e+1
SM	kg	4.94e-1	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	-4.00e-1
RSF	MJ	4.75e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	-3.85e+0
NRSF	MJ	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
FW	m3	6.16e-2	2.06e-6	2.27e+1	0.00e+0	8.24e-7	7.98e-4	2.28e-6	-2.93e-2
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								

** This 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.*

Additional voluntary indicators

Results per functional unit: 1 kg									
Indicator	Unit	A1 - A3	A4	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO2 eq	5.96e+0	1.75e-2	0.00e+0	0.00e+0	7.02e-3	3.40e-1	4.18e-3	-2.53e+0
EP	kg PO4 eq	1.04e-2	0.00e+0	0.00e+0	0.00e+0	0.00e+0	8.04e-6	1.41e-6	-8.34e-3
Acronyms	GWP-GHG global warming potential - greenhouse gases; EP eutrophication potential								

Additional voluntary indicators
This indicator supports comparability with EPDs based on the previous version of EN 15804 (EN 15804:2012+A1:2013).

Waste and output flows

Results per functional unit: 1 kg									
Indicator	Unit	A1 - A3	A4	B7	C1	C2	C3	C4	D
HWD	kg	3.14e-6	6.12e-14	-3.31e-6	0.00e+0	2.45e-14	1.44e-12	4.89e-12	-8.90e-7
NHWD	kg	9.21e-1	9.34e-6	2.03e+1	0.00e+0	3.74e-6	8.12e-2	1.15e-1	-6.92e-1
RWD	kg	1.99e-3	8.88e-8	5.93e+0	0.00e+0	3.55e-8	9.46e-6	7.42e-7	-1.26e-3
Acronyms	HW Hazardous waste disposed; NHW Non-hazardous waste disposed; RW Radioactive waste disposed								

Output flows

Results per functional unit: 1 kg									
Indicator	Unit	A1 - A3	A4	B7	C1	C2	C3	C4	D
CRU	kg	4.75e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	-3.85e+0
MFR	kg	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
MER	kg	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0
EEE	MJ	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	5.75e-1	0.00e+0	0.00e+0
EET	MJ	0.00e+0	0.00e+0	0.00e+0	0.00e+0	0.00e+0	1.03e+0	0.00e+0	0.00e+0
Acronyms	CRU Components for reuse; MFR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy								

Product Table

Name	Weight, kg	Unit
CEILING & HAND SHOWER SET, WITH DIVERTER, ROUND, CHROME	2.103	pc
CEILING & HAND SHOWER SET, WITH DIVERTER, SQUARE, CHROME	2.103	pc

Additional information

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins, and/or risks. It is advised not to use the results of modules A1-A3 (A1-A5 for services) without considering the results of module C.

The end-of-life reflects the Swedish market, where 1 % of ferrous metallic waste is landfilled, and 99 % recycled, a wastage of 10 % is considered during the recycling process. The other materials' EoL scenarios are as per SCB data for 2020. For the credit for recovered material (module D), EU datasets were used.

The scenario for module B7 “Operational water use” is based on the Unified Water Label (UWL), which is a product label developed by the European bathroom industry to demonstrate the water and energy efficiency of bathroom products. The technical criteria of UWL correlate with existing European and National standards while establishing harmonised calculation criteria for bathroom products.

The annual water consumption according to the parameters stated above is 2 555 l. It is assumed that all of the water consumption for the washbasin faucet is hot water. 66,94 kWh of energy is consumed annually for the heating of water. The scenario for operational water use covers 16 years which is the reference service life of washbasin faucets. The energy profile for water heating is based on Eurostat statistics describing disaggregated final energy consumption in households used for water heating in 2018 (Unified Water Label, 2020).

Data quality: All datasets used came from reputable databases Sphera Managed LCA Content (MLC) (formerly known as GaBi database) and Ecoinvent, with good technological representativeness. Therefore, it could be considered good.

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.

References

EPD International (2021)	General Programme Instructions of the International EPD® System, version 4.0
EN 15804:2012+A2	Sustainability of construction works – Environmental product declaration – Core rules for the product category of constructions products
SCB (2023)	https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START__MI__MI0305/MI0305T003/table/tableViewLayout1/ Accessed 2023-08-03
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.
PCR 2019:14	PCR 2019:14. v1.3.1. Construction products (EN 15804: A2)
Taps & showers technical criteria. Unified Water Label (2020)	https://uwla.eu/wp-content/uploads/2021/02/2020-10-14-UWL-scheme-draft-ts.pdf

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