

Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Garden Valve 4296 FM Mattsson

from

FM Mattsson AB

EPD of multiple products, based on a representative product Garden Valve 42960400.
Other included products are Garden Valve 42960600 and Garden Valve 42961000.

FM Mattsson

Programme:	The International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products, based on a representative product
EPD registration number:	EPD-IES-0032953:001
Version date:	2026-09-11
Validity date:	2031-09-10
<i>An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com</i>	



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
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Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): <i>Construction products 2019:14, version 2.0.1, valid until 2030-04-07, UN CPC code: 42911</i>
PCR review was conducted by: <i>The Technical Committee of the International EPD® System.</i> <i>See www.environdec.com for a list of members.</i> <i>Review chair: Rob Rouwette (chair), Noa Meron (cochair).</i> <i>The review panel may be contacted via the Secretariat www.environdec.com/contact</i>

Third-party Verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
☒ Individual EPD verification without a pre-verified LCA/EPD tool Third-party verifier: <i>Mats Zackrisson, RISE Research Institutes of Sweden</i> Approved by: 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 published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

INFORMATION ABOUT EPD OWNER

Owner of the EPD: FM Mattsson AB

Address: FM Mattsson AB, Östnorsvägen 95, 792 95 Mora, Sweden

Contact:

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Address and contact information of the LCA practitioner commissioned by the EPD owner:

Miljögiraff AB

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Description of the organisation:

FM Mattsson Group conducts the sale, manufacturing and product development of water mixers and related products under the established brands of FM Mattsson, Mora, Damixa, Hotbath, Aqualla and Adamsez.

The group's vision is to be the customer's first choice in the bathroom, kitchen and beyond.

In 2025 the business generated sales of more than 1.97 billion SEK from its companies in Sweden, Norway, Denmark, Finland, Benelux, UK, Germany and Italy and had 557 employees.

FM Mattsson Group is listed on Nasdaq Stockholm.

Product-related or management system-related certifications:

ISO 9001:2015

ISO 14001:2015

PRODUCT INFORMATION

Product name: Garden Valve 4296 FM Mattsson

Product identification:

Garden Valve 42960400 (representative product), for wall thickness max. 400 mm

Garden Valve 42960600, for wall thickness max. 600 mm

Garden Valve 42961000, for wall thickness max. 1000 mm

Product group identification:

Building valves - Frost resistant taps for outdoor use according to EN 17821

Visual representation of the product



UN CPC code: 42911 - Sinks, washbasins, baths and other sanitary ware and parts thereof, of iron, steel, copper or aluminium

GTIN:

7391887274671: Garden Valve 42960400

7391887275401: Garden Valve 42960600

7391887275418: Garden Valve 42961000

Product description:

The Garden Valve 4296 FM Mattsson is a plumbing component intended for outdoor use, enabling the control and distribution of water. It is designed to be installed in connection with building water systems and is manually operated to regulate water flow for garden and outdoor applications. It is also designed with an integrated vacuum valve and features a self-draining function that automatically drains the water when the tap is turned off to prevent frost damage.

A reliable backflow protection prevents contaminated water from flowing back into the system during sudden pressure changes

Name and location of production site(s):

FM Mattsson AB
Östnorsvägen 95
792 95 Mora, Sweden

Multiple products:

All products included in this EPD are Garden Valves 4296 FM Mattsson and share the same geographical scope and production site. Garden Valve 4296 FM Mattsson is available in three pipe lengths depending on wall thickness (400 mm, 600 mm, and 1000 mm). Garden Valve 4296 400mm is chosen as the representative product as it is the most sold product and stands for more than 80% of the three types. All included products consist of the same material composition with the only exception being the length of the pipe in copper. As the declared unit is per 1 kg product, the variation between products per kg will be minimal and will mainly result in a higher share of copper and a small increase in plastics. The table below shows the product weight of each included product.

Product	Product weight (kg/product)
Garden Valve 42960400 FM Mattsson (representative product)	0,764 kg
Garden Valve 42960600 FM Mattsson	0,885 kg
Garden Valve 42961000 FM Mattsson	1,13 kg

The deviation of the GWP-GHG value relative to the representative product can be seen in “Additional LCA results”, as well as the variation of the environmental impact indicator results for modules A-C between any of the products that exceeds 10%.

CONTENT DECLARATION

Product content declaration of representative product Garden Valve 42960400, per declared unit 1 kg. The variation of the two additional included products only varies in additional copper and plastic weight (Garden valve 42960600, copper: 0,441 kg/kg, plastic: 0,029 kg/kg and Garden valve 42961000, copper: 0,562 kg/kg, plastic: 0,024 kg/kg).

No Substances of Very High Concern (SVHCs) has been reported constituting more than 0,1% of the weight of the product or any component of the product.

Product content	Mass, kg/kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product
Brass	0,468	46%	0%	0
Stainless steel	0,140	0%	0%	0
Copper	0,356	0%	0%	0
Plastic	0,030	0%	0%	0
Rubber	0,0027	0%	0%	0
Nickel	0,0032	0%	0%	0
Chromium	0,000035	0%	0%	0
Steel	0,00021	0%	0%	0
Total	1,0	21%	0%	0

Packaging materials	Mass, kg/kg	Mass-% (versus the product)	Biogenic material, kg C/product
Carton	0,264	0,264	0,12
Wood pallet	0,0037	0,0037	0,0016
Total	0,27	0,27	0,12

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

LCA INFORMATION

Declared unit: 1 kg Garden Valve

Reference service life: Not applicable.

Time representativeness: The data used for the LCA calculation covers bill-of-materials as well as operations at FM Mattsson AB, Mora for the year 2025.

Geographical scope: The supply of raw material A1 is modelled representing geographical production areas Global, Germany and Sweden. The raw material transport is modelled covering Global and Rest of Europe geography. The manufacturing A3 is modelled for production at FM Mattsson in Sweden. Module C and D scenarios are modelled for a Swedish scenario.

Database(s) and LCA software used: Ecoinvent 3.11 and SimaPro Craft 10.3.0.1.

LCIA method:

The LCIA method follows the standard for Construction Products EN 15804:2012+A2:2019/AC:2021. EN 15804:2012+A2:2019/AC:2021 uses the impact categories and characterization factors of the LCIA methods used in Environmental Footprint 3.1 (EF 3.1), with the only difference that biogenic carbon dioxide uptake is calculated as -1 and biogenic carbon dioxide emissions as +1, where EF 3.1 calculates this as 0 and 0, respectively.

Cut-off criteria:

The cut-off criteria established by the PCR is 1% of all material and energy flows to a single unit process and 5% of total inflows (mass and energy) per module. No cut-offs exceeding this limit have been made.

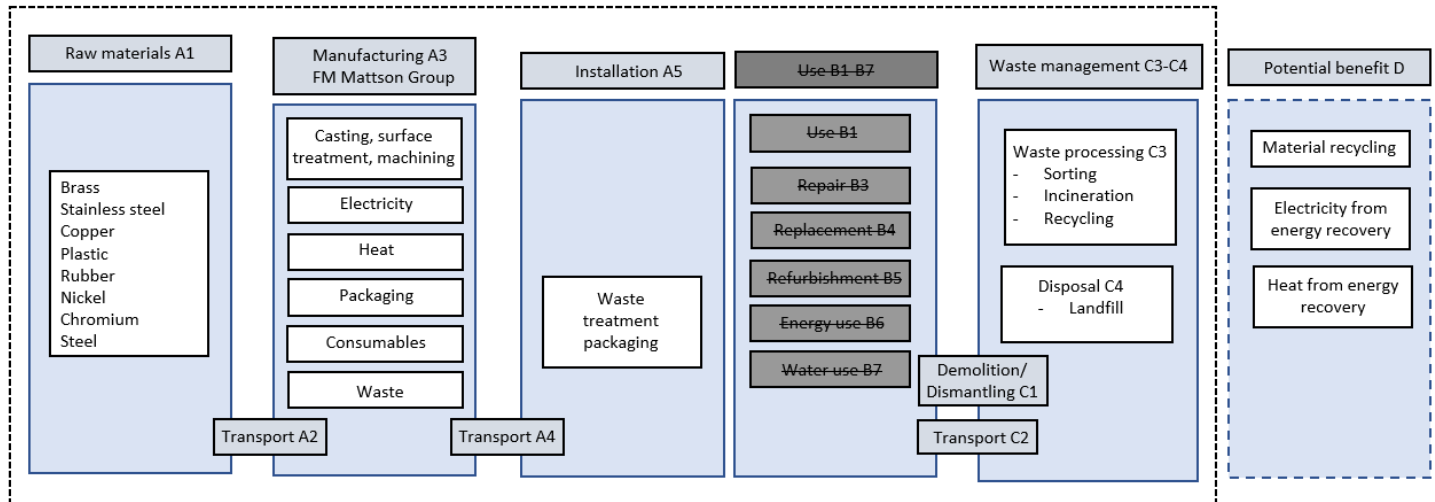
In this study, the infrastructure and capital goods are included in the LCA analysis since it is not possible within reasonable effort to subtract the data on infrastructure/capital goods.

Description of system boundaries:

The system boundary of the studied system is structured according to EN 15804 and PRC 2019:14 option "b) Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules)." The additional modules in this study are A4 and A5.

Process flow diagram:

System boundary



More information:

A1 Raw materials: This module relates to raw material extraction and processing, processing of secondary material input (e.g. recycling processes), transport to component manufacturing and component manufacturing.

A2 Transportation: This module relates to transport from raw material extraction and processing, and component manufacturing to FM Mattsson AB, Mora.

A3 Manufacturing: This module covers the relevant production processes at FM Mattsson AB, Mora. The processes cover casting, machining, surface treatment and assembling of components. Treatment of waste is also included.

Purchased electricity for operations at FM Mattsson AB, Mora is 100% renewable based from hydro with a GWP-GHG impact of 0,056 kg CO₂-eq/kWh.

Shared site-level inputs and outputs are allocated by mass.

A4 Distribution: This module relates to transport of finished product from FM Mattsson AB, Mora to wholesaler consumers in Sweden. In this study, the majority of products are distributed 280 km by truck.

A5 Installation: This module covers the waste treatment of the product packaging which follows the same modelling and waste scenarios as module C.

C1 De-construction: This module relates to the dismantling of the product at the end-of-life and follows PCR default values.

C2 Waste Transport: This module relates to the transport of the dismantled product at end-of-life to a waste processing site which follows PCR default values.

C3 Waste processing: This module covers impacts related to sorting and recycling processes as well as incineration with energy recovery. The distribution of waste flows between recycling, incineration, and landfill is based on the PEF (Product Environmental Footprint) statistical data presented in Annex C with 85% of metals being recycled and 0% for polymers. Remaining shares are assumed to be treated with 99% incineration and 1% landfill.

C4 Waste disposal: This module relates to waste disposal processes such as landfilling.

D Benefits and loads beyond system boundary: This module covers benefits and loads associated with recovery/recycling beyond the defined system boundary. For this product, this covers benefits from recycling and waste incineration.

Data quality summary according to EN 15941:

The data is representative of the production of 1 kg Garden Valve by FM Mattsson AB in Sweden during 2025. The end-of-life stage of the EPD covers Sweden. Primary data have been collected about manufacturing processes and is combined with representative secondary data from the ecoinvent database v.3.11. The quality of the relevant data used for the EPD using EN 15804:2012+A2:2019, Annex E, E.1, is in terms of geographical representativeness good, technical representativeness very good or fair, and for time representativeness very good. The reason for using a dataset with fair technology representativeness is that it was stated to as “unknown” in ecoinvent 3.11 due to being a market dataset, but the input transformation datasets was stated as “current”. The relevant data assessed included no other poor or very poor data.

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

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	GLO/DE/SE	GLO/EUR	SE	SE	SE	-	-	-	-	-	-	-	SE	SE	SE	SE	SE
Share of primary data	12,4%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-23%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

Declaration of data sources, reference years, data categories, and share of primary data:

Process	Source type	Source	Reference year	Data category	Share of primary data, of GWP-GHG results for A1-A3
Copper, cathode	Collected data, Database	EPD Owner, Ecoinvent v3.11	2024	Secondary representative data	0%
Steel, chromium steel 18/8	Collected data, Database	EPD Owner, Ecoinvent v3.11	2024	Secondary representative data	0%
Electricity	Collected data, Database	EPD Owner, Supplier, Ecoinvent v3.11	2024	Primary data	4,9%
Transportaton	Collected data, Database	EPD Owner, Ecoinvent v3.11	2024	Primary data	7,5%
Other processes	Collected data, EPD, Database	EPD Owner, EPD confidential, Ecoinvent v3.11	2024	Primary data, Secondary representative data	0%
Copper, cathode	Collected data, Database	EPD Owner, Ecoinvent v3.11	2024	Secondary representative data	0%
Total share of primary data, of GWP-GHG results for A1-A3					12,4%

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

Mandatory impact category indicators according to EN 15804

Results per 1 kg Garden Valve										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	5,5E+00	6,6E-02	8,0E-02	ND	4,0E-04	1,7E-02	7,9E-02	4,1E-03	-5,5E-01
GWP-fossil	kg CO ₂ eq.	5,5E+00	6,6E-02	7,0E-03	ND	4,0E-04	1,7E-02	7,9E-02	1,8E-03	-7,3E-01
GWP-biogenic	kg CO ₂ eq.	-2,3E-02	4,6E-05	7,3E-02	ND	8,1E-08	1,2E-05	1,6E-05	2,4E-03	1,9E-01
GWP-luluc	kg CO ₂ eq.	9,6E-03	2,2E-05	4,2E-06	ND	4,1E-08	5,6E-06	8,8E-06	5,7E-07	-1,5E-03
ODP	kg CFC 11 eq.	1,0E-07	1,4E-09	1,3E-10	ND	5,9E-12	3,7E-10	7,3E-11	3,8E-11	-2,7E-09
AP	mol H ⁺ eq.	1,9E-01	1,4E-04	3,6E-05	ND	3,6E-06	5,4E-05	4,6E-05	1,0E-05	-4,3E-02
EP-freshwater	kg P eq.	6,5E-04	4,9E-07	5,9E-08	ND	1,4E-09	1,2E-07	3,3E-08	3,2E-08	-1,9E-04
EP-marine	kg N eq.	9,9E-03	3,3E-05	1,5E-05	ND	1,7E-06	1,8E-05	2,2E-05	4,2E-06	-2,1E-03
EP-terrestrial	mol N eq.	1,3E-01	3,7E-04	1,5E-04	ND	1,8E-05	2,0E-04	2,3E-04	4,6E-05	-3,1E-02
POCP	kg NMVOC eq.	4,2E-02	2,3E-04	4,9E-05	ND	5,4E-06	8,2E-05	6,5E-05	1,6E-05	-9,1E-03
ADP-minerals&metals*	kg Sb eq.	2,5E-03	2,3E-07	2,2E-08	ND	1,4E-10	5,7E-08	1,3E-08	4,4E-09	-5,5E-04
ADP-fossil*	MJ	7,9E+01	9,4E-01	8,7E-02	ND	5,2E-03	2,4E-01	6,4E-02	3,0E-02	-1,0E+01
WDP*	m ³	3,8E+00	3,7E-03	6,5E-04	ND	1,1E-05	9,3E-04	5,7E-04	2,4E-04	-6,1E-01
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 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. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3). Negative values in Module D represent potential net benefits from material recycling and energy recovery beyond the system boundary.

Note: Biogenic carbon in packaging is balanced in A1 - A3.

** Disclaimer: 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.*

Additional mandatory and voluntary impact category indicators

Results per 1 kg Garden Valve

Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-GHG¹	kg CO ₂ eq.	5,5E+00	6,6E-02	7,0E-03	ND	4,0E-04	1,7E-02	7,9E-02	1,8E-03	-7,3E-01
PM	disease inc.	5,7E-07	4,9E-09	6,1E-10	ND	1,0E-10	1,3E-09	9,1E-10	3,9E-10	-1,2E-07
IR²	kBq U-235 eq	2,1E-01	4,1E-04	1,4E-04	ND	8,6E-07	1,0E-04	3,8E-04	1,9E-05	-8,6E-02
ETP - FW*	CTUe	1,8E+02	1,3E-01	1,3E-01	ND	2,8E-04	3,2E-02	1,6E-01	3,7E-02	-4,7E+01
HTP - C*	CTUh	2,3E-08	1,1E-11	4,7E-12	ND	4,1E-14	2,9E-12	4,7E-12	2,9E-12	-4,6E-09
HTP - NC*	CTUh	2,1E-06	5,9E-10	2,0E-10	ND	6,4E-13	1,5E-10	1,9E-10	1,6E-11	-4,3E-07
Land use, SQP*	Pt	9,2E+01	5,7E-01	4,4E-02	ND	3,4E-04	1,4E-01	8,3E-03	4,0E-02	-2,8E+01
Acronyms	GWP-GHG: Global Warming Potential, Greenhouse Gases, PM: Particulate Matter, IRP: Ionizing Radiation - Human Health, ETP-FW: Ecotoxicity Potential - Freshwater, HTP-C: Human Toxicity Potential - Cancer, HTP-NC: Human Toxicity Potential - Non-Cancer, SQP: Soil Quality Potential Index									

Additional voluntary indicators e.g. the voluntary indicators from EN 15804 or the global indicators according to ISO 21930:2017

Disclaimer: The results of the impact categories land use, human toxicity (cancer), human toxicity, non-cancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets, in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes. Negative values in Module D represent potential net benefits from material recycling and energy recovery beyond the system boundary.

** 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.*

¹ 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.

² 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.

Resource use indicators

Results per 1 kg Garden Valve										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ	5,8E+01	1,5E-02	3,6E-03	ND	3,2E-05	3,8E-03	7,4E-03	9,5E-04	-5,4E+00
PERM	MJ	4,3E+00	0,0E+00	-4,1E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
PERT	MJ	6,3E+01	1,5E-02	-4,1E+00	ND	3,2E-05	3,8E-03	7,4E-03	9,5E-04	-5,4E+00
PENRE	MJ	7,7E+01	9,4E-01	8,7E-02	ND	5,2E-03	2,4E-01	6,4E-02	3,0E-02	-1,0E+01
PENRM	MJ	1,0E+00	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	-8,0E-01	0,0E+00	0,0E+00
PENRT	MJ	7,8E+01	9,4E-01	8,7E-02	ND	5,2E-03	2,4E-01	-7,3E-01	3,0E-02	-1,0E+01
SM	kg	0,0E+00	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
RSF	MJ	0,0E+00	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
NRSF	MJ	0,0E+00	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
FW	m ³	9,3E+01	1,7E-02	4,2E-03	ND	3,7E-05	4,3E-03	8,0E-03	1,2E-03	-5,9E+00
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									

Disclaimer: Negative values in Module D represent potential net benefits from material recycling and energy recovery beyond the system boundary.

Waste indicators

Results per 1 kg Garden Valve										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2,1E-02	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
Non-hazardous waste disposed	kg	7,4E-01	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
Radioactive waste disposed	kg	9,6E-05	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00

Output flow indicators

Results per 1 kg Garden Valve										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Components for re-use	kg	0,0E+00	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
Material for recycling	kg	1,0E+00	0,0E+00	2,0E-01	ND	0,0E+00	0,0E+00	8,2E-01	0,0E+00	0,0E+00
Materials for energy recovery	kg	0,0E+00	0,0E+00	0,0E+00	ND	0,0E+00	0,0E+00	0,0E+00	0,0E+00	0,0E+00
Exported energy, electricity	MJ	9,9E-01	0,0E+00	2,6E-01	ND	0,0E+00	0,0E+00	2,4E-01	0,0E+00	0,0E+00
Exported energy, thermal	MJ	2,3E+00	0,0E+00	6,1E-01	ND	0,0E+00	0,0E+00	5,6E-01	0,0E+00	0,0E+00

Additional LCA results (other environmental performance results) of the product(s)

The deviation of the GWP-GHG value for A1-A3 relative the representative product for the different products included in this EPD can be seen in the table below.

Product	Difference relative to the representative product (%)
Garden Valve 42960400 FM Mattsson (representative product)	0%
Garden Valve 42960600 FM Mattsson	-10%
Garden Valve 42961000 FM Mattsson	-23%

The variation of the environmental impact indicators which differ more than 10% between any of the included products are declared below. Variation is calculated as the maximum deviation between any of the included products, using absolute values.

For the indicator Climate change – biogenic, the result includes both negative values (carbon storage or credits) and positive values (emissions). For this indicator, percentage-based variation is not considered meaningful and is therefore not quantified.

The observed variation is mainly driven by differences in material composition, especially the amount of brass per kg as this lowers in relation to the increased amount of copper with the increased length of copper pipe for the 600 mm and 1000 mm garden valves.

Indicator	Variation between products (%)
Climate change	32%
Climate change - Fossil	31%
Climate change - Land use and LU change	35%
Ozone depletion	15%
Acidification	46%
Eutrophication, freshwater	43%
Eutrophication, marine	38%
Eutrophication, terrestrial	40%
Photochemical ozone formation	38%
Resource use, minerals and metals	48%
Resource use, fossils	19%
Water use	37%
Climate change - GWP-GHG	31%
Particulate matter	37%
Ionising radiation	37%
Ecotoxicity, freshwater	41%
Human toxicity, cancer	45%
Human toxicity, non-cancer	47%
Land use	35%

100% Recycling Scenario for modules A5, C1-C4 & D

Mandatory impact category indicators according to EN 15804

Results per 1 kg Garden Valve							
Indicator	Unit	A5	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	-3,3E-02	4,0E-04	1,5E-02	3,4E-03	0,0E+00	-1,0E+00
GWP-fossil	kg CO ₂ eq.	4,5E-03	4,0E-04	1,5E-02	3,3E-03	0,0E+00	-1,3E+00
GWP-biogenic	kg CO ₂ eq.	-3,7E-02	8,1E-08	1,0E-05	3,5E-06	0,0E+00	3,0E-01
GWP-luluc	kg CO ₂ eq.	3,6E-06	4,1E-08	5,0E-06	8,5E-06	0,0E+00	-4,3E-04
ODP	kg CFC 11 eq.	9,5E-11	5,9E-12	3,3E-10	5,1E-11	0,0E+00	-1,6E-08
AP	mol H ⁺ eq.	1,7E-05	3,6E-06	4,9E-05	3,0E-05	0,0E+00	-8,2E-02
EP-freshwater	kg P eq.	3,3E-08	1,4E-09	1,1E-07	1,7E-08	0,0E+00	-3,6E-04
EP-marine	kg N eq.	5,9E-06	1,7E-06	1,6E-05	1,4E-05	0,0E+00	-3,9E-03
EP-terrestrial	mol N eq.	6,5E-05	1,8E-05	1,8E-04	1,5E-04	0,0E+00	-5,8E-02
POCP	kg NMVOC eq.	2,5E-05	5,4E-06	7,4E-05	4,5E-05	0,0E+00	-1,8E-02
ADP-minerals&metals*	kg Sb eq.	1,6E-08	1,4E-10	5,1E-08	1,0E-08	0,0E+00	-1,1E-03
ADP-fossil*	MJ	6,5E-02	5,2E-03	2,2E-01	5,3E-02	0,0E+00	-2,0E+01
WDP*	m ³	2,7E-04	1,1E-05	8,4E-04	2,4E-04	0,0E+00	-1,2E+00
GWP-GHG ³	kg CO ₂ eq.	4,5E-03	4,0E-04	1,5E-02	3,4E-03	0,0E+00	-1,3E+00

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, GWP-GHG: Global Warming Potential for Greenhouse Gases

Disclaimer: 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. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3). Negative values in Module D represent potential net benefits from material recycling and energy recovery beyond the system boundary.

Note: Biogenic carbon in packaging is balanced in A1 - A3.

** Disclaimer: 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.*

³ 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.

100% Incineration Scenario for modules A5, C1-C4 & D

Mandatory impact category indicators according to EN 15804

Results per 1 kg Garden Valve							
Indicator	Unit	A5	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	4,0E-01	4,0E-04	2,5E-02	8,0E-02	2,8E-02	-8,2E-02
GWP-fossil	kg CO ₂ eq.	1,4E-02	4,0E-04	2,5E-02	8,0E-02	1,2E-02	-3,5E-02
GWP-biogenic	kg CO ₂ eq.	3,9E-01	8,1E-08	1,7E-05	1,6E-05	1,6E-02	-4,4E-02
GWP-luluc	kg CO ₂ eq.	5,9E-06	4,1E-08	8,2E-06	8,8E-06	3,9E-06	-2,5E-03
ODP	kg CFC 11 eq.	2,4E-10	5,9E-12	5,4E-10	7,4E-11	2,6E-10	-8,0E-10
AP	mol H ⁺ eq.	9,3E-05	3,6E-06	7,9E-05	4,6E-05	7,0E-05	-1,5E-04
EP-freshwater	kg P eq.	1,4E-07	1,4E-09	1,8E-07	3,3E-08	2,1E-07	-7,4E-07
EP-marine	kg N eq.	4,0E-05	1,7E-06	2,6E-05	2,2E-05	2,8E-05	-4,1E-05
EP-terrestrial	mol N eq.	4,1E-04	1,8E-05	2,9E-04	2,3E-04	3,1E-04	-5,2E-04
POCP	kg NMVOC eq.	1,2E-04	5,4E-06	1,2E-04	6,5E-05	1,0E-04	-1,5E-04
ADP-minerals&metals*	kg Sb eq.	3,8E-08	1,4E-10	8,3E-08	1,3E-08	2,9E-08	-1,4E-07
ADP-fossil*	MJ	1,5E-01	5,2E-03	3,5E-01	6,4E-02	2,0E-01	-3,3E+00
WDP*	m ³	1,7E-03	1,1E-05	1,4E-03	5,7E-04	1,6E-03	-4,1E-02
GWP-GHG ⁴	kg CO ₂ eq.	1,5E-02	4,0E-04	2,5E-02	8,0E-02	1,2E-02	-3,8E-02
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, GWP-GHG: Global Warming Potential for Greenhouse Gases						

Disclaimer: 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. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3). Negative values in Module D represent potential net benefits from material recycling and energy recovery beyond the system boundary.

Note: Biogenic carbon in packaging is balanced in A1 - A3.

** Disclaimer: 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.*

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100% Landfill Scenario for modules A5, C1-C4 & D

Mandatory impact category indicators according to EN 15804

Results per 1 kg Garden Valve							
Indicator	Unit	A5	C1	C2	C3	C4	D
GWP-total	kg CO ₂ eq.	4,5E-01	4,0E-04	1,5E-02	3,4E-03	8,9E-03	0,0E+00
GWP-fossil	kg CO ₂ eq.	8,4E-03	4,0E-04	1,5E-02	3,3E-03	8,9E-03	0,0E+00
GWP-biogenic	kg CO ₂ eq.	4,4E-01	8,1E-08	1,0E-05	3,5E-06	1,4E-05	0,0E+00
GWP-luluc	kg CO ₂ eq.	4,4E-06	4,1E-08	5,0E-06	8,5E-06	1,1E-06	0,0E+00
ODP	kg CFC 11 eq.	1,9E-10	5,9E-12	3,3E-10	5,1E-11	2,1E-10	0,0E+00
AP	mol H ⁺ eq.	6,9E-05	3,6E-06	4,9E-05	3,0E-05	4,3E-05	0,0E+00
EP-freshwater	kg P eq.	6,1E-08	1,4E-09	1,1E-07	1,7E-08	3,5E-08	0,0E+00
EP-marine	kg N eq.	2,9E-04	1,7E-06	1,6E-05	1,4E-05	2,1E-05	0,0E+00
EP-terrestrial	mol N eq.	1,9E-04	1,8E-05	1,8E-04	1,5E-04	2,0E-04	0,0E+00
POCP	kg NMVOC eq.	1,9E-04	5,4E-06	7,4E-05	4,5E-05	7,5E-05	0,0E+00
ADP-minerals&metals*	kg Sb eq.	2,5E-08	1,4E-10	5,1E-08	1,0E-08	7,5E-09	0,0E+00
ADP-fossil*	MJ	1,4E-01	5,2E-03	2,2E-01	5,3E-02	1,6E-01	0,0E+00
WDP*	m ³	-1,0E-03	1,1E-05	8,4E-04	2,4E-04	3,3E-04	0,0E+00
GWP-GHG ⁵	kg CO ₂ eq.	3,9E-01	4,0E-04	1,5E-02	3,4E-03	8,9E-03	0,0E+00

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, GWP-GHG: Global Warming Potential for Greenhouse Gases

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Note: Biogenic carbon in packaging is balanced in A1 - A3.

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⁵ 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.

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EPD	Environmental Product Declaration
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
PCR	Product Category Rules
c-PCR	Complementary Product Category Rules
CEN	European Committee for Standardization
CPC	Central product classification
GHG	Greenhouse Gas
PEF	Product Environmental Footprint
Environmental Impact Indicators (EN 15804)	
GHG	Greenhouse Gas
GWP	Global Warming Potential (kg CO ₂ eq.)
GWP-fossil	Global Warming Potential from fossil sources (kg CO ₂ eq.)
GWP-biogenic	Global Warming Potential from biogenic sources (kg CO ₂ eq.)
GWP-luluc	Global Warming Potential from land use and land use change (kg CO ₂ eq.)
GWP-total	Total Global Warming Potential (kg CO ₂ eq.)
GWP-GHG	Global Warming Potential for greenhouse gases (kg CO ₂ eq.)
ODP	Ozone Depletion Potential (kg CFC-11 eq.)
AP	Acidification Potential (mol H ⁺ eq.)
EP	Eutrophication Potential
EP-freshwater	Freshwater eutrophication potential (kg P eq.)
EP-marine	Marine eutrophication potential (kg N eq.)
EP-terrestrial	Terrestrial eutrophication potential (mol N eq.)
POCP	Photochemical Ozone Creation Potential (kg NMVOC eq.)
ADP	Abiotic Depletion Potential
ADP-minerals&metals	Abiotic depletion potential for non-fossil resources (kg Sb eq.)
ADP-fossil	Abiotic depletion potential for fossil resources (MJ)
WDP	Water Deprivation Potential (m ³)
Resource Use Indicators	
PERE	Renewable primary energy (excluding as raw materials) (MJ)
PERM	Renewable primary energy used as raw materials (MJ)
PERT	Total renewable primary energy (MJ)
PENRE	Non-renewable primary energy (excluding as raw materials) (MJ)
PENRM	Non-renewable primary energy used as raw materials (MJ)
PENRT	Total non-renewable primary energy (MJ)
SM	Use of secondary material (kg)
RSF	Use of renewable secondary fuels (MJ)
NRSF	Use of non-renewable secondary fuels (MJ)
FW	Use of net fresh water (m ³)
HW	Hazardous Waste (disposed) (kg)
NHW	Non-Hazardous Waste (disposed) (kg)
RW	Radioactive Waste (disposed) (kg)
Output Flow Indicators	
CFR	Components for Reuse (kg)
MR	Material for Recycling (kg)
MER	Materials for Energy Recovery (kg)
EEE	Exported Energy, Electricity (MJ)
EET	Exported Energy, Thermal (MJ)
Lifecycle Stages / Modules	

A1	Raw material supply
A2	Transport
A3	Manufacturing
A4	Transport to site
A5	Construction/Installation
B1	Use
B2	Maintenance
B3	Repair
B4	Replacement
B5	Refurbishment
B6	Operational energy use
B7	Operational water use
C1	Deconstruction/Demolition
C2	Transport to waste processing
C3	Waste processing
C4	Disposal
D	Reuse-Recovery-Recycling potential
Other Relevant Terms	
CAS No.	Chemical Abstracts Service Number
CF	Characterisation Factor
CFC-11 eq.	Chlorofluorocarbon-11 Equivalents
CO ₂ eq.	Carbon Dioxide Equivalents
CTUe	Comparative Toxic Unit for Ecosystems
CTUh	Comparative Toxic Unit for Humans
DE	Germany
EC No.	European Community Number
EUR	Europe
GLO	Global
GTIN	Global Trade Item Number
inc.	Incidence
kBq	Kilobecquerel
kg	Kilogram
kg C	Kilograms of Carbon
kg CO ₂ eq.	Kilograms of Carbon Dioxide Equivalent
km	Kilometre
kWh	Kilowatt-hour
LCI	Life Cycle Inventory
LCIA	Life Cycle Impact Assessment
m ³	Cubic Meter
MJ	Megajoule
N eq.	Nitrogen Equivalents
ND	Not Declared
NM VOC	Non-Methane Volatile Organic Compounds
P eq.	Phosphorus Equivalents
PEF	Product Environmental Footprint
Pt	Points
Sb eq.	Antimony Equivalents
SE	Sweden
SEK	Swedish krona
SVHC	Substances of Very High Concern
UK	United Kingdom
UN	United Nations

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Life Cycle Assessment of Garden Valve 4296 FM Mattsson by FM Mattsson AB, 2026

VERSION HISTORY

Original Version of the EPD, 2026-09-11

