Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.64

Product:	3003796 - PE Concentric Reducer S12,5 63x40
Unit:	1 piece
Manufacturer:	Wavin - IT - SM Maddalena

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	24-11-2022
End of validity:	24-11-2027
Verifier:	Martijn van Hövell - SGS Search

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - IT - SM Maddalena (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

Environmental impacts and parameters

GWP-total = EF Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total 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 [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

Statement of Confidentiality

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	7.44E-2	1.03E-2	6.00E-3	9.06E-2	1.05E-3	5.23E-2	5.83E-4	-5.18E-2	9.28E-2
GWP-f	kg CO2 eq	8.86E-2	1.03E-2	5.14E-3	1.04E-1	1.05E-3	3.48E-2	5.84E-4	-5.80E-2	8.25E-2
GWP-b	kg CO2 eq	-1.42E-2	5.81E-6	4.34E-4	-1.38E-2	6.39E-7	1.75E-2	4.38E-7	6.21E-3	9.90E-3
GWP-luluc	kg CO2 eq	6.80E-5	3.76E-6	4.34E-4	5.05E-4	3.73E-7	6.12E-6	8.37E-9	-6.35E-5	4.48E-4
ODP	kg CFC11 eq	5.46E-9	2.35E-9	5.15E-10	8.32E-9	2.43E-10	8.74E-10	1.24E-11	-3.22E-9	6.24E-9
AP	mol H+ eq	3.50E-4	7.19E-5	2.07E-5	4.42E-4	6.00E-6	3.60E-5	2.97E-7	-1.89E-4	2.96E-4
EP-fw	kg P eq	1.85E-6	8.22E-8	7.98E-8	2.01E-6	8.66E-9	1.79E-7	3.86E-10	-1.30E-6	8.94E-7
EP-m	kg N eq	6.54E-5	2.39E-5	3.50E-6	9.29E-5	2.15E-6	1.08E-5	2.10E-7	-3.71E-5	6.89E-5
EP-T	mol N eq	7.21E-4	2.64E-4	3.93E-5	1.02E-3	2.36E-5	1.19E-4	1.21E-6	-4.18E-4	7.49E-4
POCP	kg NMVOC eq	3.08E-4	7.43E-5	1.22E-5	3.95E-4	6.76E-6	3.72E-5	4.73E-7	-1.73E-4	2.67E-4
ADP-mm	kg Sb eq	1.21E-6	2.56E-7	1.25E-7	1.59E-6	2.72E-8	1.43E-7	2.98E-10	-4.16E-7	1.34E-6
ADP-f	MJ	2.97E+0	1.56E-1	6.76E-2	3.20E+0	1.62E-2	1.10E-1	9.09E-4	-1.67E+0	1.65E+0
WDP	m3 depriv.	6.42E-2	4.68E-4	2.39E-2	8.85E-2	4.96E-5	2.07E-3	4.16E-6	-4.04E-2	5.03E-2
PM	disease inc.	3.70E-9	8.96E-10	2.07E-10	4.80E-9	9.50E-11	5.86E-10	6.24E-12	-2.02E-9	3.47E-9
IR	kBq U-235 eq	2.86E-3	6.82E-4	6.31E-5	3.60E-3	7.06E-5	3.40E-4	4.24E-6	-1.44E-3	2.58E-3
ETP-fw	CTUe	1.38E+0	1.26E-1	1.07E-1	1.61E+0	1.31E-2	1.29E-1	8.01E-4	-7.70E-1	9.87E-1
HTP-c	CTUh	3.25E-11	4.59E-12	5.69E-12	4.28E-11	4.67E-13	1.49E-11	2.21E-14	-1.99E-11	3.83E-11
HTP-nc	CTUh	6.61E-10	1.48E-10	1.18E-10	9.27E-10	1.56E-11	1.86E-10	5.09E-13	-4.15E-10	7.15E-10
SQP	Pt	1.61E+0	1.29E-1	1.23E-2	1.76E+0	1.38E-2	8.61E-2	2.33E-3	-2.23E+0	-3.73E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.78E-1	2.19E-3	2.34E-1	5.14E-1	2.32E-4	5.27E-3	3.60E-5	-3.86E-1	1.34E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.78E-1	2.19E-3	2.34E-1	5.14E-1	2.32E-4	5.27E-3	3.60E-5	-3.86E-1	1.34E-1
PENRE	MJ	3.19E+0	1.66E-1	7.37E-2	3.43E+0	1.72E-2	1.17E-1	9.64E-4	-1.80E+0	1.76E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.19E+0	1.66E-1	7.37E-2	3.43E+0	1.72E-2	1.17E-1	9.64E-4	-1.80E+0	1.76E+0
PET	MJ	3.47E+0	1.68E-1	3.08E-1	3.94E+0	1.74E-2	1.22E-1	1.00E-3	-2.19E+0	1.90E+0
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	1.03E-3	1.73E-5	5.68E-4	1.62E-3	1.83E-6	6.21E-5	1.12E-6	-7.25E-4	9.56E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.62E-7	3.89E-7	6.57E-8	1.12E-6	4.13E-8	1.86E-7	1.09E-9	-6.23E-7	7.22E-7
NHWD	kg	4.97E-3	9.30E-3	6.40E-4	1.49E-2	1.00E-3	5.35E-3	4.00E-3	-2.36E-3	2.29E-2
RWD	kg	3.12E-6	1.06E-6	7.01E-8	4.25E-6	1.10E-7	4.36E-7	5.94E-9	-1.37E-6	3.43E-6
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0

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