Environmental Profile

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

Ecochain v4.3.1

Product:	3051113 - PPr Reducer F/M WT 32/20
Unit:	1 piece
Manufacturer:	Wavin - TR - Adana
Location:	Güzelevler Mahallesi
Address:	Girne Bulvarı 294 01321 Adana Turkey

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	04-10-2022
End of validity:	04-10-2027
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 - TR - Adana (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 EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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-f** = EF Resource use, fossils [MJ]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.20E-2	3.92E-3	1.26E-3	6.72E-2	1.21E-3	5.64E-2	5.69E-4	-3.29E-2	9.25E-2
GWP-f	kg CO2 eq	6.21E-2	3.92E-3	1.22E-3	6.72E-2	1.21E-3	5.43E-2	5.69E-4	-3.53E-2	8.80E-2
GWP-b	kg CO2 eq	-3.03E-4	-4.11E-7	4.26E-5	-2.61E-4	7.35E-7	2.15E-3	4.90E-7	2.42E-3	4.31E-3
GWP-luluc	kg CO2 eq	1.84E-4	2.37E-6	7.44E-7	1.87E-4	4.29E-7	7.07E-6	1.07E-8	-2.33E-5	1.71E-4
ODP	kg CFC11 eq	2.36E-9	8.07E-10	9.78E-11	3.26E-9	2.79E-10	1.00E-9	1.44E-11	-1.81E-9	2.74E-9
AP	mol H+ eq	3.29E-4	9.97E-5	7.76E-6	4.36E-4	6.90E-6	4.25E-5	3.47E-7	-9.57E-5	3.90E-4
EP-fw	kg P eq	1.45E-6	2.17E-8	9.74E-8	1.56E-6	9.96E-9	2.06E-7	4.76E-10	-5.40E-7	1.24E-6
EP-m	kg N eq	4.73E-5	2.51E-5	2.71E-6	7.51E-5	2.47E-6	1.29E-5	2.16E-7	-1.81E-5	7.26E-5
EP-T	mol N eq	4.99E-4	2.79E-4	1.83E-5	7.97E-4	2.72E-5	1.42E-4	1.40E-6	-2.02E-4	7.66E-4
POCP	kg NMVOC eq	2.11E-4	7.29E-5	5.98E-6	2.90E-4	7.77E-6	4.43E-5	5.24E-7	-8.47E-5	2.58E-4
ADP-f	MJ	1.95E+0	5.24E-2	1.21E-2	2.02E+0	1.86E-2	1.26E-1	1.05E-3	-1.01E+0	1.15E+0
ADP-mm	kg Sb eq	7.65E-7	4.75E-8	9.68E-8	9.09E-7	3.13E-8	1.62E-7	3.58E-10	-2.06E-7	8.97E-7
WDP	m3 depriv.	4.57E-2	1.08E-4	2.52E-3	4.83E-2	5.70E-5	2.40E-3	8.65E-6	-1.94E-2	3.14E-2
PM	disease inc.	2.36E-9	1.80E-10	1.07E-10	2.65E-9	1.09E-10	6.81E-10	7.24E-12	-9.17E-10	2.53E-9
IR	kBq U-235 eq	1.55E-3	2.23E-4	3.64E-5	1.81E-3	8.12E-5	3.89E-4	4.82E-6	-6.00E-4	1.69E-3
ETP-fw	CTUe	8.60E-1	3.75E-2	6.56E-2	9.63E-1	1.51E-2	1.49E-1	8.80E-4	-3.09E-1	8.20E-1
HTP-c	CTUh	3.13E-11	2.08E-12	3.99E-12	3.74E-11	5.37E-13	2.11E-11	2.82E-14	-6.58E-12	5.24E-11
HTP-nc	CTUh	5.78E-10	3.41E-11	7.04E-11	6.82E-10	1.80E-11	2.32E-10	5.82E-13	-1.89E-10	7.43E-10
SQP	Pt	2.63E-1	1.80E-2	1.62E-2	2.97E-1	1.59E-2	9.99E-2	2.69E-3	-4.78E-1	-6.29E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.69E-2	4.27E-4	2.20E-1	2.88E-1	2.67E-4	6.09E-3	3.89E-5	-9.33E-2	2.01E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.69E-2	4.27E-4	2.20E-1	2.88E-1	2.67E-4	6.09E-3	3.89E-5	-9.33E-2	2.01E-1
PENRE	MJ	2.10E+0	5.56E-2	1.29E-2	2.16E+0	1.97E-2	1.35E-1	1.12E-3	-1.09E+0	1.23E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.10E+0	5.56E-2	1.29E-2	2.16E+0	1.97E-2	1.35E-1	1.12E-3	-1.09E+0	1.23E+0
PET	MJ	2.16E+0	5.60E-2	2.33E-1	2.45E+0	2.00E-2	1.41E-1	1.16E-3	-1.19E+0	1.43E+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	8.40E-4	3.75E-6	6.03E-5	9.04E-4	2.10E-6	7.40E-5	1.28E-6	-3.33E-4	6.48E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.19E-6	7.36E-8	7.80E-8	1.34E-6	4.75E-8	2.17E-7	1.30E-9	-3.50E-7	1.25E-6
NHWD	kg	7.16E-3	1.03E-3	1.45E-3	9.64E-3	1.15E-3	6.97E-3	4.61E-3	-9.24E-4	2.14E-2
RWD	kg	1.48E-6	3.58E-7	4.45E-8	1.88E-6	1.26E-7	4.98E-7	6.83E-9	-5.60E-7	1.95E-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	5.27E-2	5.27E-2	0	0	0	0	5.27E-2
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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