Environmental Profile

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

Ecochain v3.5.80

Product:	3061211 - Tigris PEXc/Al/PE Pipe WT 16x2.0 L=5
Unit:	1 piece
Manufacturer:	Wavin - PL - MPC

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	30-06-2023
End of validity:	30-06-2028
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 - PL - MPC (2021). (☑ = 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-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	2.88E+0	7.14E-2	4.26E-2	3.00E+0	7.75E-3	1.22E+0	2.72E-2	1.91E-1	4.44E+0
GWP-f	kg CO2 eq	2.99E+0	7.14E-2	2.63E-2	3.09E+0	7.75E-3	1.10E+0	2.71E-2	1.91E-1	4.41E+0
GWP-b	kg CO2 eq	-1.11E-1	3.23E-5	1.63E-2	-9.47E-2	4.70E-6	1.18E-1	1.23E-4	-2.76E-3	2.10E-2
GWP-luluc	kg CO2 eq	7.43E-3	2.64E-5	1.08E-5	7.47E-3	2.74E-6	3.01E-6	6.51E-7	2.74E-3	1.02E-2
ODP	kg CFC11 eq	1.23E-7	1.57E-8	1.54E-9	1.40E-7	1.79E-9	1.36E-9	7.73E-10	-4.20E-8	1.02E-7
AP	mol H+ eq	1.68E-2	4.36E-4	9.84E-5	1.73E-2	4.41E-5	1.50E-4	1.91E-5	4.64E-3	2.22E-2
EP-fw	kg P eq	1.05E-4	7.15E-7	6.71E-7	1.06E-4	6.37E-8	1.57E-7	3.01E-8	2.43E-5	1.30E-4
EP-m	kg N eq	2.63E-3	1.51E-4	2.07E-5	2.81E-3	1.58E-5	6.68E-5	1.20E-5	6.08E-4	3.51E-3
EP-T	mol N eq	2.97E-2	1.66E-3	1.89E-4	3.16E-2	1.74E-4	7.59E-4	7.76E-5	6.68E-3	3.93E-2
POCP	kg NMVOC eq	9.75E-3	4.73E-4	6.06E-5	1.03E-2	4.97E-5	2.03E-4	2.79E-5	2.13E-3	1.27E-2
ADP-mm	kg Sb eq	2.09E-5	1.79E-6	9.73E-7	2.37E-5	2.00E-7	7.95E-8	1.91E-8	-1.58E-4	-1.34E-4
ADP-f	MJ	5.17E+1	1.07E+0	1.92E-1	5.30E+1	1.19E-1	8.24E-2	5.81E-2	1.15E+0	5.44E+1
WDP	m3 depriv.	1.08E+0	3.82E-3	5.06E-3	1.09E+0	3.65E-4	1.14E-3	2.89E-4	1.45E-1	1.24E+0
PM	disease inc.	1.82E-7	6.36E-9	1.02E-9	1.90E-7	6.99E-10	1.39E-9	3.84E-10	5.77E-8	2.50E-7
IR	kBq U-235 eq	6.76E-2	4.50E-3	2.89E-4	7.24E-2	5.20E-4	2.69E-4	3.01E-4	8.60E-3	8.20E-2
ETP-fw	CTUe	5.98E+1	9.55E-1	7.79E-1	6.16E+1	9.66E-2	3.84E-1	2.74E+1	1.62E+1	1.06E+2
HTP-c	CTUh	2.97E-9	3.12E-11	4.12E-11	3.04E-9	3.44E-12	1.58E-10	2.28E-12	9.64E-10	4.17E-9
HTP-nc	CTUh	5.64E-8	1.04E-9	9.64E-10	5.85E-8	1.15E-10	1.14E-9	4.86E-11	1.67E-8	7.64E-8
SQP	Pt	1.77E+1	9.24E-1	1.54E-1	1.88E+1	1.02E-1	5.31E-2	1.40E-1	-1.44E+0	1.77E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.91E+0	7.26E-5	1.08E+0	6.00E+0	1.71E-3	3.82E-3	3.76E-3	4.50E-1	6.46E+0
PERM	MJ	0	1.33E-2	0	1.33E-2	0	0	0	0	1.33E-2
PERT	MJ	4.91E+0	1.34E-2	1.08E+0	6.01E+0	1.71E-3	3.82E-3	3.76E-3	4.50E-1	6.47E+0
PENRE	MJ	5.53E+1	1.14E-2	2.07E-1	5.55E+1	1.26E-1	8.81E-2	6.16E-2	7.54E-1	5.65E+1
PENRM	MJ	0	1.13E+0	0	1.13E+0	0	0	0	0	1.13E+0
PENRT	MJ	5.53E+1	1.14E+0	2.07E-1	5.66E+1	1.26E-1	8.81E-2	6.16E-2	7.54E-1	5.76E+1
PET	MJ	6.02E+1	1.15E+0	1.29E+0	6.26E+1	1.28E-1	9.20E-2	6.54E-2	1.20E+0	6.41E+1
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	2.74E-2	1.30E-4	1.40E-4	2.77E-2	1.35E-5	2.04E-4	7.29E-5	4.97E-3	3.29E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.14E-4	2.71E-6	2.33E-7	8.17E-4	3.04E-7	3.77E-7	6.93E-8	-3.35E-4	4.83E-4
NHWD	kg	4.55E-1	6.75E-2	3.81E-3	5.27E-1	7.37E-3	9.55E-3	2.36E-1	1.34E-1	9.13E-1
RWD	kg	6.95E-5	7.06E-6	3.41E-7	7.69E-5	8.09E-7	3.35E-7	3.86E-7	8.35E-6	8.67E-5
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

Ecochain

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777