Environmental Profile

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

Ecochain v3.5.80

Product:	3085343 - PERT/EVOH/PERT Pipe IV 12x1.4 L=100
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	9.20E+0	3.48E-1	1.47E+0	1.10E+1	5.12E-2	1.13E+1	2.24E-1	-6.33E+0	1.62E+1
GWP-f	kg CO2 eq	1.06E+1	3.47E-1	1.36E+0	1.23E+1	5.11E-2	9.89E+0	2.24E-1	-6.35E+0	1.61E+1
GWP-b	kg CO2 eq	-1.36E+0	1.29E-4	1.09E-1	-1.26E+0	3.10E-5	1.40E+0	1.70E-4	1.28E-2	1.52E-1
GWP-luluc	kg CO2 eq	6.71E-3	1.40E-4	1.27E-3	8.12E-3	1.81E-5	2.98E-5	3.30E-6	-9.60E-4	7.21E-3
ODP	kg CFC11 eq	3.12E-7	7.58E-8	7.71E-8	4.64E-7	1.18E-8	1.23E-8	4.84E-9	-6.64E-7	-1.71E-7
AP	mol H+ eq	3.98E-2	3.19E-3	1.25E-2	5.55E-2	2.91E-4	1.25E-3	1.16E-4	-5.73E-3	5.14E-2
EP-fw	kg P eq	2.04E-4	3.24E-6	7.04E-5	2.78E-4	4.21E-7	1.39E-6	1.51E-7	-1.77E-5	2.62E-4
EP-m	kg N eq	7.03E-3	9.73E-4	1.39E-3	9.39E-3	1.04E-4	5.59E-4	8.74E-5	-1.80E-3	8.33E-3
EP-T	mol N eq	7.90E-2	1.08E-2	1.61E-2	1.06E-1	1.15E-3	6.33E-3	4.69E-4	-2.01E-2	9.38E-2
POCP	kg NMVOC eq	3.67E-2	2.97E-3	5.44E-3	4.51E-2	3.28E-4	1.69E-3	1.83E-4	-6.72E-3	4.06E-2
ADP-mm	kg Sb eq	1.23E-4	8.01E-6	1.64E-4	2.94E-4	1.32E-6	7.57E-7	1.16E-7	-4.97E-6	2.92E-4
ADP-f	MJ	3.56E+2	5.14E+0	1.22E+1	3.73E+2	7.85E-1	7.09E-1	3.54E-1	-1.06E+2	2.69E+2
WDP	m3 depriv.	8.22E+0	1.72E-2	4.52E-1	8.69E+0	2.41E-3	2.14E-2	1.76E-3	-3.01E-1	8.42E+0
PM	disease inc.	3.49E-7	2.86E-8	7.98E-8	4.58E-7	4.62E-9	1.05E-8	2.43E-9	-4.09E-8	4.34E-7
IR	kBq U-235 eq	2.50E-1	2.16E-2	1.02E-2	2.82E-1	3.43E-3	2.41E-3	1.65E-3	-3.79E-2	2.52E-1
ETP-fw	CTUe	7.82E+1	4.44E+0	1.02E+2	1.85E+2	6.37E-1	3.36E+0	3.30E-1	-1.44E+1	1.74E+2
HTP-c	CTUh	3.66E-9	1.56E-10	5.21E-9	9.02E-9	2.27E-11	1.32E-9	8.72E-12	-9.23E-10	9.45E-9
HTP-nc	CTUh	7.34E-8	4.75E-9	1.32E-7	2.10E-7	7.60E-10	1.01E-8	2.03E-10	-1.02E-8	2.11E-7
SQP	Pt	1.33E+2	4.05E+0	1.89E+1	1.56E+2	6.71E-1	3.74E-1	9.06E-1	-1.03E+2	5.50E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.34E+1	3.63E-3	1.99E+2	2.22E+2	1.13E-2	3.60E-2	1.40E-2	-1.53E+1	2.07E+2
PERM	MJ	0	5.74E-2	0	5.74E-2	0	0	0	0	5.74E-2
PERT	MJ	2.34E+1	6.10E-2	1.99E+2	2.22E+2	1.13E-2	3.60E-2	1.40E-2	-1.53E+1	2.07E+2
PENRE	MJ	3.82E+2	5.92E-1	1.30E+1	3.96E+2	8.33E-1	7.59E-1	3.75E-1	-1.18E+2	2.80E+2
PENRM	MJ	0	4.86E+0	0	4.86E+0	0	0	0	0	4.86E+0
PENRT	MJ	3.82E+2	5.46E+0	1.30E+1	4.01E+2	8.33E-1	7.59E-1	3.75E-1	-1.18E+2	2.85E+2
PET	MJ	4.05E+2	5.52E+0	2.12E+2	6.23E+2	8.45E-1	7.95E-1	3.89E-1	-1.33E+2	4.92E+2
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	1.38E-1	5.86E-4	1.26E-2	1.52E-1	8.88E-5	1.97E-3	4.36E-4	-8.09E-3	1.46E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.02E-5	1.21E-5	1.73E-6	7.41E-5	2.01E-6	3.32E-6	4.25E-7	-1.32E-4	-5.18E-5
NHWD	kg	5.02E-1	2.92E-1	3.66E-2	8.30E-1	4.86E-2	9.02E-2	1.56E+0	-9.41E-2	2.43E+0
RWD	kg	2.27E-4	3.40E-5	2.53E-6	2.63E-4	5.34E-6	2.92E-6	2.31E-6	-5.08E-5	2.23E-4
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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