Environmental Profile

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

Ecochain v3.5.80

Product:	3087900 - PERT/EVOH/PERT Pipe GN 16x2.0 L=600
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	1.06E+2	3.73E+0	3.40E+0	1.13E+2	5.74E-1	1.11E+2	2.52E+0	-6.36E+1	1.64E+2
GWP-f	kg CO2 eq	1.11E+2	3.73E+0	2.13E+0	1.17E+2	5.73E-1	1.04E+2	2.52E+0	-6.72E+1	1.57E+2
GWP-b	kg CO2 eq	-5.01E+0	1.41E-3	1.27E+0	-3.74E+0	3.48E-4	7.18E+0	1.91E-3	3.69E+0	7.13E+0
GWP-luluc	kg CO2 eq	7.16E-2	1.49E-3	9.23E-4	7.40E-2	2.03E-4	3.35E-4	3.71E-5	-3.05E-2	4.41E-2
ODP	kg CFC11 eq	3.49E-6	8.14E-7	1.24E-7	4.42E-6	1.32E-7	1.52E-7	5.43E-8	-7.09E-6	-2.32E-6
AP	mol H+ eq	4.18E-1	3.29E-2	8.44E-3	4.60E-1	3.27E-3	1.41E-2	1.30E-3	-6.83E-2	4.10E-1
EP-fw	kg P eq	2.16E-3	3.50E-5	5.66E-5	2.25E-3	4.72E-6	1.62E-5	1.70E-6	-4.32E-4	1.85E-3
EP-m	kg N eq	7.51E-2	1.02E-2	1.70E-3	8.70E-2	1.17E-3	6.21E-3	9.64E-4	-2.05E-2	7.48E-2
EP-T	mol N eq	8.37E-1	1.12E-1	1.57E-2	9.65E-1	1.29E-2	7.03E-2	5.26E-3	-2.29E-1	8.25E-1
POCP	kg NMVOC eq	3.77E-1	3.11E-2	5.05E-3	4.13E-1	3.68E-3	1.90E-2	2.06E-3	-7.16E-2	3.66E-1
ADP-mm	kg Sb eq	1.39E-3	8.67E-5	8.60E-5	1.56E-3	1.48E-5	1.26E-5	1.31E-6	-5.36E-5	1.54E-3
ADP-f	MJ	3.76E+3	5.52E+1	1.56E+1	3.84E+3	8.80E+0	8.82E+0	3.96E+0	-1.12E+3	2.73E+3
WDP	m3 depriv.	8.67E+1	1.86E-1	4.22E-1	8.73E+1	2.70E-2	2.29E-1	2.02E-2	-7.73E+0	7.99E+1
PM	disease inc.	3.67E-6	3.10E-7	8.44E-8	4.07E-6	5.18E-8	1.25E-7	2.72E-8	-5.98E-7	3.67E-6
IR	kBq U-235 eq	2.66E+0	2.32E-1	2.31E-2	2.91E+0	3.85E-2	3.18E-2	1.85E-2	-5.53E-1	2.45E+0
ETP-fw	CTUe	1.17E+3	4.79E+1	6.70E+1	1.29E+3	7.15E+0	3.88E+1	3.65E+0	-3.84E+2	9.55E+2
HTP-c	CTUh	3.55E-8	1.67E-9	3.53E-9	4.07E-8	2.54E-10	1.45E-8	9.81E-11	-8.48E-9	4.71E-8
HTP-nc	CTUh	7.77E-7	5.13E-8	8.32E-8	9.11E-7	8.52E-9	1.09E-7	2.27E-9	-1.48E-7	8.83E-7
SQP	Pt	7.58E+2	4.40E+1	1.32E+1	8.15E+2	7.53E+0	4.18E+0	1.02E+1	-1.08E+3	-2.45E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.61E+2	3.52E-2	9.68E+1	2.58E+2	1.26E-1	4.12E-1	1.57E-1	-1.81E+2	7.71E+1
PERM	MJ	0	6.24E-1	0	6.24E-1	0	0	0	0	6.24E-1
PERT	MJ	1.61E+2	6.59E-1	9.68E+1	2.58E+2	1.26E-1	4.12E-1	1.57E-1	-1.81E+2	7.77E+1
PENRE	MJ	4.04E+3	5.73E+0	1.69E+1	4.06E+3	9.34E+0	9.42E+0	4.21E+0	-1.24E+3	2.84E+3
PENRM	MJ	0	5.29E+1	0	5.29E+1	0	0	0	0	5.29E+1
PENRT	MJ	4.04E+3	5.87E+1	1.69E+1	4.12E+3	9.34E+0	9.42E+0	4.21E+0	-1.24E+3	2.90E+3
PET	MJ	4.20E+3	5.93E+1	1.14E+2	4.37E+3	9.47E+0	9.83E+0	4.36E+0	-1.42E+3	2.97E+3
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	1.43E+0	6.34E-3	1.16E-2	1.45E+0	9.96E-4	2.11E-2	4.89E-3	-2.05E-1	1.27E+0

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.38E-4	1.31E-4	1.82E-5	7.88E-4	2.25E-5	3.98E-5	4.78E-6	-1.38E-3	-5.23E-4
NHWD	kg	5.14E+0	3.17E+0	2.98E-1	8.62E+0	5.45E-1	7.31E-1	1.74E+1	-9.10E-1	2.64E+1
RWD	kg	2.42E-3	3.65E-4	2.66E-5	2.82E-3	5.99E-5	4.05E-5	2.59E-5	-6.68E-4	2.27E-3
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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