Environmental Profile

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

Ecochain v3.5.80

Product:	4005643 - PVC Bend 45° GY 250 S/SP
Unit:	1 Piece
Manufacturer:	Wavin - FR - Varennes

The Wavin range of PVC pipes and fittings to be glued covers all the usual diameters and allows you to create networks that are 100% compatible, homogeneous and meet the requirements of the French market.

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 - FR - Varennes (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-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	3.96E+0	1.71E-1	1.89E-1	4.32E+0	6.04E-2	3.46E+0	1.87E-2	-2.32E+0	5.54E+0
GWP-f	kg CO2 eq	5.34E+0	1.71E-1	1.51E-1	5.66E+0	6.03E-2	1.69E+0	1.87E-2	-3.06E+0	4.37E+0
GWP-b	kg CO2 eq	-1.39E+0	1.04E-4	3.78E-2	-1.35E+0	3.66E-5	1.77E+0	2.35E-5	7.45E-1	1.17E+0
GWP-luluc	kg CO2 eq	9.13E-3	6.04E-5	1.18E-4	9.30E-3	2.13E-5	7.62E-4	5.00E-7	-7.61E-3	2.48E-3
ODP	kg CFC11 eq	2.58E-6	3.93E-8	1.94E-8	2.64E-6	1.39E-8	2.13E-7	7.07E-10	-1.33E-6	1.53E-6
AP	mol H+ eq	2.66E-2	9.72E-4	7.49E-4	2.83E-2	3.44E-4	3.82E-3	1.72E-5	-1.43E-2	1.82E-2
EP-fw	kg P eq	2.72E-4	1.40E-6	3.55E-6	2.77E-4	4.96E-7	2.55E-5	2.25E-8	-1.67E-4	1.36E-4
EP-m	kg N eq	5.34E-3	3.48E-4	2.27E-4	5.92E-3	1.23E-4	9.77E-4	1.05E-5	-2.80E-3	4.23E-3
EP-T	mol N eq	5.70E-2	3.83E-3	2.60E-3	6.34E-2	1.35E-3	1.08E-2	6.85E-5	-3.09E-2	4.47E-2
POCP	kg NMVOC eq	1.74E-2	1.10E-3	6.71E-4	1.92E-2	3.87E-4	3.22E-3	2.35E-5	-9.83E-3	1.30E-2
ADP-mm	kg Sb eq	5.95E-3	4.41E-6	2.34E-6	5.96E-3	1.56E-6	1.52E-5	1.72E-8	-5.94E-5	5.92E-3
ADP-f	MJ	1.25E+2	2.62E+0	2.12E+0	1.30E+2	9.26E-1	1.01E+1	5.16E-2	-7.03E+1	7.09E+1
WDP	m3 depriv.	7.83E+0	8.04E-3	4.44E+0	1.23E+1	2.84E-3	3.77E-1	3.55E-4	-4.75E+0	7.92E+0
PM	disease inc.	2.22E-7	1.54E-8	1.12E-8	2.49E-7	5.44E-9	4.83E-8	3.55E-10	-1.57E-7	1.46E-7
IR	kBq U-235 eq	3.01E-1	1.14E-2	6.26E-3	3.18E-1	4.05E-3	3.63E-2	2.36E-4	-1.72E-1	1.87E-1
ETP-fw	CTUe	2.26E+2	2.13E+0	1.74E+0	2.30E+2	7.52E-1	7.36E+1	7.99E-1	-9.79E+1	2.07E+2
HTP-c	CTUh	5.04E-9	7.57E-11	1.46E-10	5.26E-9	2.67E-11	1.17E-9	1.43E-12	-2.28E-9	4.18E-9
HTP-nc	CTUh	1.47E-7	2.54E-9	3.60E-9	1.53E-7	8.96E-10	2.64E-8	1.54E-10	-6.51E-8	1.16E-7
SQP	Pt	1.67E+2	2.24E+0	6.65E+0	1.76E+2	7.92E-1	6.21E+0	1.32E-1	-2.44E+2	-6.14E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.96E+1	3.76E-2	1.70E+0	3.13E+1	1.33E-2	7.01E-1	1.89E-3	-4.25E+1	-1.05E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.96E+1	3.76E-2	1.70E+0	3.13E+1	1.33E-2	7.01E-1	1.89E-3	-4.25E+1	-1.05E+1
PENRE	MJ	1.34E+2	2.78E+0	2.29E+0	1.40E+2	9.83E-1	1.08E+1	5.47E-2	-7.55E+1	7.58E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.34E+2	2.78E+0	2.29E+0	1.40E+2	9.83E-1	1.08E+1	5.47E-2	-7.55E+1	7.58E+1
PET	MJ	1.64E+2	2.82E+0	3.99E+0	1.71E+2	9.96E-1	1.15E+1	5.66E-2	-1.18E+2	6.53E+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	9.49E-2	2.96E-4	1.04E-1	1.99E-1	1.05E-4	1.04E-2	6.31E-5	-6.77E-2	1.42E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.51E-4	6.70E-6	3.26E-6	8.61E-4	2.37E-6	1.71E-5	6.29E-8	-6.71E-5	8.14E-4
NHWD	kg	6.61E-1	1.62E-1	2.38E-2	8.47E-1	5.74E-2	3.73E-1	2.29E-1	-3.08E-1	1.20E+0
RWD	kg	2.68E-4	1.78E-5	6.59E-6	2.93E-4	6.30E-6	4.00E-5	3.35E-7	-1.58E-4	1.82E-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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