Environmental Profile

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

Ecochain v3.5.80

Product:	4005673 - PVC Bend 45° GY 100 S/S
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	4.06E-1	1.53E-2	1.80E-2	4.39E-1	5.93E-3	2.42E-1	1.84E-3	-2.41E-1	4.48E-1
GWP-f	kg CO2 eq	4.69E-1	1.53E-2	1.44E-2	4.99E-1	5.92E-3	1.62E-1	1.84E-3	-2.65E-1	4.04E-1
GWP-b	kg CO2 eq	-6.39E-2	9.27E-6	3.55E-3	-6.03E-2	3.60E-6	7.97E-2	2.30E-6	2.40E-2	4.34E-2
GWP-luluc	kg CO2 eq	5.83E-4	5.40E-6	1.07E-5	5.99E-4	2.10E-6	7.30E-5	4.95E-8	-3.70E-4	3.04E-4
ODP	kg CFC11 eq	2.46E-7	3.52E-9	1.85E-9	2.51E-7	1.36E-9	2.01E-8	6.95E-11	-1.26E-7	1.46E-7
AP	mol H+ eq	2.31E-3	8.69E-5	6.90E-5	2.46E-3	3.37E-5	3.47E-4	1.69E-6	-1.11E-3	1.74E-3
EP-fw	kg P eq	2.31E-5	1.26E-7	3.39E-7	2.36E-5	4.87E-8	2.44E-6	2.22E-9	-1.17E-5	1.44E-5
EP-m	kg N eq	4.23E-4	3.11E-5	2.11E-5	4.75E-4	1.21E-5	8.58E-5	1.03E-6	-2.04E-4	3.70E-4
EP-T	mol N eq	4.61E-3	3.43E-4	2.39E-4	5.19E-3	1.33E-4	9.45E-4	6.73E-6	-2.22E-3	4.06E-3
POCP	kg NMVOC eq	1.46E-3	9.80E-5	6.24E-5	1.62E-3	3.80E-5	2.83E-4	2.31E-6	-7.40E-4	1.20E-3
ADP-mm	kg Sb eq	5.90E-4	3.95E-7	2.08E-7	5.90E-4	1.53E-7	1.37E-6	1.70E-9	-5.35E-6	5.86E-4
ADP-f	MJ	1.15E+1	2.34E-1	2.03E-1	1.19E+1	9.09E-2	9.40E-1	5.07E-3	-6.30E+0	6.66E+0
WDP	m3 depriv.	7.46E-1	7.19E-4	4.31E-1	1.18E+0	2.79E-4	3.64E-2	3.64E-5	-3.93E-1	8.21E-1
PM	disease inc.	1.68E-8	1.38E-9	1.04E-9	1.93E-8	5.35E-10	4.34E-9	3.49E-11	-9.51E-9	1.47E-8
IR	kBq U-235 eq	2.71E-2	1.02E-3	6.05E-4	2.87E-2	3.97E-4	3.32E-3	2.32E-5	-1.34E-2	1.90E-2
ETP-fw	CTUe	1.59E+1	1.90E-1	1.59E-1	1.62E+1	7.38E-2	7.08E+0	7.78E-2	-5.62E+0	1.78E+1
HTP-c	CTUh	4.40E-10	6.77E-12	1.37E-11	4.60E-10	2.63E-12	1.08E-10	1.41E-13	-1.69E-10	4.02E-10
HTP-nc	CTUh	1.36E-8	2.27E-10	3.34E-10	1.41E-8	8.80E-11	2.50E-9	1.50E-11	-5.20E-9	1.15E-8
SQP	Pt	8.32E+0	2.00E-1	5.46E-1	9.07E+0	7.78E-2	5.80E-1	1.29E-2	-1.01E+1	-3.11E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.61E+0	3.36E-3	1.40E-1	1.76E+0	1.30E-3	6.70E-2	1.85E-4	-1.81E+0	1.04E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.61E+0	3.36E-3	1.40E-1	1.76E+0	1.30E-3	6.70E-2	1.85E-4	-1.81E+0	1.04E-2
PENRE	MJ	1.23E+1	2.49E-1	2.20E-1	1.28E+1	9.65E-2	1.00E+0	5.38E-3	-6.77E+0	7.11E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.23E+1	2.49E-1	2.20E-1	1.28E+1	9.65E-2	1.00E+0	5.38E-3	-6.77E+0	7.11E+0
PET	MJ	1.39E+1	2.52E-1	3.60E-1	1.45E+1	9.78E-2	1.07E+0	5.57E-3	-8.59E+0	7.12E+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	8.60E-3	2.65E-5	1.01E-2	1.87E-2	1.03E-5	9.99E-4	6.19E-6	-4.73E-3	1.50E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.29E-5	5.99E-7	3.16E-7	8.38E-5	2.32E-7	1.55E-6	6.20E-9	-5.59E-6	8.00E-5
NHWD	kg	5.32E-2	1.45E-2	2.31E-3	7.00E-2	5.63E-3	3.44E-2	2.25E-2	-2.35E-2	1.09E-1
RWD	kg	2.39E-5	1.59E-6	6.39E-7	2.61E-5	6.18E-7	3.59E-6	3.29E-8	-1.21E-5	1.83E-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

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