Environmental Profile

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

Ecochain v3.5.80

Product:	4005642 - PVC Elbow 87°3 GY 200 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	2.36E+0	9.41E-2	1.13E-1	2.57E+0	3.56E-2	1.64E+0	1.10E-2	-1.44E+0	2.81E+0
GWP-f	kg CO2 eq	2.90E+0	9.40E-2	9.01E-2	3.08E+0	3.56E-2	9.79E-1	1.10E-2	-1.64E+0	2.46E+0
GWP-b	kg CO2 eq	-5.42E-1	5.71E-5	2.30E-2	-5.19E-1	2.16E-5	6.65E-1	1.39E-5	2.04E-1	3.49E-1
GWP-luluc	kg CO2 eq	3.93E-3	3.33E-5	7.49E-5	4.04E-3	1.26E-5	4.43E-4	2.95E-7	-2.72E-3	1.77E-3
ODP	kg CFC11 eq	1.49E-6	2.17E-8	1.16E-8	1.52E-6	8.20E-9	1.22E-7	4.17E-10	-7.65E-7	8.89E-7
AP	mol H+ eq	1.43E-2	5.36E-4	4.65E-4	1.53E-2	2.03E-4	2.13E-3	1.01E-5	-7.07E-3	1.05E-2
EP-fw	kg P eq	1.44E-4	7.74E-7	2.13E-6	1.47E-4	2.93E-7	1.48E-5	1.33E-8	-7.65E-5	8.56E-5
EP-m	kg N eq	2.68E-3	1.92E-4	1.39E-4	3.01E-3	7.25E-5	5.30E-4	6.20E-6	-1.33E-3	2.29E-3
EP-T	mol N eq	2.91E-2	2.11E-3	1.62E-3	3.28E-2	7.99E-4	5.84E-3	4.04E-5	-1.45E-2	2.49E-2
POCP	kg NMVOC eq	9.15E-3	6.04E-4	4.12E-4	1.02E-2	2.29E-4	1.75E-3	1.39E-5	-4.79E-3	7.36E-3
ADP-mm	kg Sb eq	3.54E-3	2.43E-6	1.50E-6	3.54E-3	9.21E-7	8.43E-6	1.02E-8	-3.29E-5	3.52E-3
ADP-f	MJ	7.02E+1	1.44E+0	1.26E+0	7.29E+1	5.46E-1	5.73E+0	3.04E-2	-3.87E+1	4.04E+1
WDP	m3 depriv.	4.53E+0	4.43E-3	2.62E+0	7.16E+0	1.68E-3	2.20E-1	2.10E-4	-2.45E+0	4.93E+0
PM	disease inc.	1.08E-7	8.49E-9	6.91E-9	1.23E-7	3.21E-9	2.67E-8	2.09E-10	-6.56E-8	8.75E-8
IR	kBq U-235 eq	1.65E-1	6.31E-3	3.70E-3	1.75E-1	2.39E-3	2.03E-2	1.40E-4	-8.54E-2	1.13E-1
ETP-fw	CTUe	1.03E+2	1.17E+0	1.08E+0	1.05E+2	4.44E-1	4.29E+1	4.71E-1	-3.89E+1	1.10E+2
HTP-c	CTUh	2.74E-9	4.17E-11	8.84E-11	2.87E-9	1.58E-11	6.53E-10	8.42E-13	-1.11E-9	2.43E-9
HTP-nc	CTUh	8.29E-8	1.40E-9	2.21E-9	8.65E-8	5.29E-10	1.52E-8	9.06E-11	-3.29E-8	6.93E-8
SQP	Pt	6.57E+1	1.23E+0	4.53E+0	7.15E+1	4.67E-1	3.53E+0	7.77E-2	-8.23E+1	-6.76E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.21E+1	2.07E-2	1.16E+0	1.33E+1	7.84E-3	4.06E-1	1.12E-3	-1.45E+1	-7.96E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.21E+1	2.07E-2	1.16E+0	1.33E+1	7.84E-3	4.06E-1	1.12E-3	-1.45E+1	-7.96E-1
PENRE	MJ	7.53E+1	1.53E+0	1.37E+0	7.82E+1	5.80E-1	6.10E+0	3.23E-2	-4.17E+1	4.32E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.53E+1	1.53E+0	1.37E+0	7.82E+1	5.80E-1	6.10E+0	3.23E-2	-4.17E+1	4.32E+1
PET	MJ	8.74E+1	1.55E+0	2.53E+0	9.15E+1	5.88E-1	6.50E+0	3.34E-2	-5.62E+1	4.24E+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	5.28E-2	1.63E-4	6.14E-2	1.14E-1	6.18E-5	6.06E-3	3.72E-5	-3.08E-2	8.97E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.00E-4	3.69E-6	1.92E-6	5.05E-4	1.40E-6	9.48E-6	3.71E-8	-3.52E-5	4.81E-4
NHWD	kg	3.37E-1	8.95E-2	1.41E-2	4.41E-1	3.39E-2	2.10E-1	1.35E-1	-1.52E-1	6.67E-1
RWD	kg	1.46E-4	9.82E-6	3.89E-6	1.59E-4	3.72E-6	2.21E-5	1.98E-7	-7.73E-5	1.08E-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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