Environmental Profile

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

Ecochain v3.5.80

Product:	3026205 - PVC Elbow 87°3 GY 40 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	1.03E-1	3.43E-3	4.73E-3	1.11E-1	1.42E-3	7.28E-2	4.42E-4	-5.90E-2	1.27E-1
GWP-f	kg CO2 eq	1.25E-1	3.43E-3	3.68E-3	1.32E-1	1.42E-3	4.46E-2	4.41E-4	-7.06E-2	1.08E-1
GWP-b	kg CO2 eq	-2.18E-2	2.08E-6	1.04E-3	-2.08E-2	8.63E-7	2.81E-2	5.49E-7	1.17E-2	1.90E-2
GWP-luluc	kg CO2 eq	1.81E-4	1.21E-6	4.01E-6	1.86E-4	5.03E-7	1.76E-5	1.20E-8	-1.33E-4	7.07E-5
ODP	kg CFC11 eq	5.97E-8	7.91E-10	4.85E-10	6.10E-8	3.28E-10	4.85E-9	1.67E-11	-3.10E-8	3.52E-8
AP	mol H+ eq	6.17E-4	1.95E-5	2.29E-5	6.59E-4	8.10E-6	8.66E-5	4.05E-7	-3.01E-4	4.54E-4
EP-fw	kg P eq	6.09E-6	2.82E-8	8.86E-8	6.21E-6	1.17E-8	5.87E-7	5.37E-10	-3.36E-6	3.45E-6
EP-m	kg N eq	1.18E-4	6.99E-6	6.56E-6	1.32E-4	2.90E-6	2.20E-5	2.45E-7	-5.76E-5	9.92E-5
EP-T	mol N eq	1.27E-3	7.71E-5	8.15E-5	1.43E-3	3.19E-5	2.42E-4	1.61E-6	-6.31E-4	1.08E-3
POCP	kg NMVOC eq	4.02E-4	2.20E-5	1.94E-5	4.44E-4	9.13E-6	7.24E-5	5.54E-7	-2.05E-4	3.21E-4
ADP-mm	kg Sb eq	1.47E-4	8.88E-8	8.39E-8	1.47E-4	3.68E-8	3.41E-7	4.09E-10	-1.33E-6	1.47E-4
ADP-f	MJ	3.03E+0	5.27E-2	5.10E-2	3.13E+0	2.18E-2	2.31E-1	1.22E-3	-1.63E+0	1.76E+0
WDP	m3 depriv.	1.83E-1	1.62E-4	9.93E-2	2.82E-1	6.70E-5	8.68E-3	9.35E-6	-1.03E-1	1.88E-1
PM	disease inc.	5.00E-9	3.10E-10	3.27E-10	5.64E-9	1.28E-10	1.09E-9	8.36E-12	-2.96E-9	3.91E-9
IR	kBq U-235 eq	7.13E-3	2.30E-4	1.43E-4	7.50E-3	9.54E-5	8.21E-4	5.55E-6	-3.63E-3	4.79E-3
ETP-fw	CTUe	4.69E+0	4.28E-2	5.40E-2	4.79E+0	1.77E-2	1.68E+0	1.83E-2	-1.82E+0	4.69E+0
HTP-c	CTUh	1.13E-10	1.52E-12	3.92E-12	1.18E-10	6.30E-13	2.77E-11	3.42E-14	-4.64E-11	1.00E-10
HTP-nc	CTUh	3.40E-9	5.10E-11	1.05E-10	3.56E-9	2.11E-11	6.09E-10	3.54E-12	-1.38E-9	2.81E-9
SQP	Pt	2.80E+0	4.51E-2	3.13E-1	3.15E+0	1.87E-2	1.43E-1	3.10E-3	-3.92E+0	-6.05E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.19E-1	7.56E-4	7.96E-2	5.99E-1	3.13E-4	1.61E-2	4.39E-5	-6.95E-1	-7.95E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.19E-1	7.56E-4	7.96E-2	5.99E-1	3.13E-4	1.61E-2	4.39E-5	-6.95E-1	-7.95E-2
PENRE	MJ	3.25E+0	5.59E-2	5.51E-2	3.36E+0	2.32E-2	2.46E-1	1.29E-3	-1.75E+0	1.88E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.25E+0	5.59E-2	5.51E-2	3.36E+0	2.32E-2	2.46E-1	1.29E-3	-1.75E+0	1.88E+0
PET	MJ	3.77E+0	5.67E-2	1.35E-1	3.96E+0	2.35E-2	2.62E-1	1.33E-3	-2.45E+0	1.80E+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	2.22E-3	5.96E-6	2.33E-3	4.55E-3	2.47E-6	2.40E-4	1.48E-6	-1.36E-3	3.43E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.08E-5	1.35E-7	7.26E-8	2.10E-5	5.58E-8	3.88E-7	1.49E-9	-1.51E-6	1.99E-5
NHWD	kg	1.44E-2	3.26E-3	5.32E-4	1.82E-2	1.35E-3	8.77E-3	5.41E-3	-6.36E-3	2.73E-2
RWD	kg	6.52E-6	3.58E-7	1.47E-7	7.02E-6	1.48E-7	9.00E-7	7.89E-9	-3.30E-6	4.77E-6
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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777