Environmental Profile

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

Ecochain v3.5.80

Product:	3026034 - PVC Elbow 87°3 GY 160 S/SP BC
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	1.46E+0	5.67E-2	7.06E-2	1.59E+0	2.17E-2	9.41E-1	6.73E-3	-8.82E-1	1.68E+0
GWP-f	kg CO2 eq	1.74E+0	5.67E-2	5.59E-2	1.85E+0	2.17E-2	5.96E-1	6.73E-3	-9.86E-1	1.49E+0
GWP-b	kg CO2 eq	-2.80E-1	3.44E-5	1.47E-2	-2.65E-1	1.32E-5	3.46E-1	8.45E-6	1.05E-1	1.86E-1
GWP-luluc	kg CO2 eq	2.26E-3	2.01E-5	5.01E-5	2.33E-3	7.69E-6	2.69E-4	1.80E-7	-1.50E-3	1.11E-3
ODP	kg CFC11 eq	9.05E-7	1.31E-8	7.25E-9	9.25E-7	5.00E-9	7.42E-8	2.55E-10	-4.65E-7	5.40E-7
AP	mol H+ eq	8.56E-3	3.23E-4	3.03E-4	9.19E-3	1.24E-4	1.29E-3	6.19E-6	-4.18E-3	6.42E-3
EP-fw	kg P eq	8.63E-5	4.67E-7	1.33E-6	8.81E-5	1.79E-7	9.00E-6	8.11E-9	-4.47E-5	5.26E-5
EP-m	kg N eq	1.59E-3	1.16E-4	8.97E-5	1.80E-3	4.43E-5	3.19E-4	3.78E-6	-7.78E-4	1.38E-3
EP-T	mol N eq	1.73E-2	1.27E-3	1.06E-3	1.96E-2	4.88E-4	3.51E-3	2.47E-5	-8.47E-3	1.52E-2
POCP	kg NMVOC eq	5.45E-3	3.64E-4	2.65E-4	6.08E-3	1.39E-4	1.05E-3	8.47E-6	-2.81E-3	4.47E-3
ADP-mm	kg Sb eq	2.16E-3	1.47E-6	1.02E-6	2.16E-3	5.62E-7	5.09E-6	6.22E-9	-1.98E-5	2.15E-3
ADP-f	MJ	4.24E+1	8.70E-1	7.82E-1	4.40E+1	3.33E-1	3.47E+0	1.86E-2	-2.33E+1	2.45E+1
WDP	m3 depriv.	2.75E+0	2.67E-3	1.60E+0	4.35E+0	1.02E-3	1.34E-1	1.29E-4	-1.47E+0	3.02E+0
PM	disease inc.	6.33E-8	5.12E-9	4.45E-9	7.28E-8	1.96E-9	1.61E-8	1.28E-10	-3.73E-8	5.37E-8
IR	kBq U-235 eq	9.97E-2	3.80E-3	2.26E-3	1.06E-1	1.46E-3	1.23E-2	8.51E-5	-5.06E-2	6.91E-2
ETP-fw	CTUe	6.04E+1	7.07E-1	7.08E-1	6.18E+1	2.71E-1	2.61E+1	2.87E-1	-2.21E+1	6.64E+1
HTP-c	CTUh	1.64E-9	2.52E-11	5.60E-11	1.72E-9	9.63E-12	3.95E-10	5.15E-13	-6.46E-10	1.48E-9
HTP-nc	CTUh	5.01E-8	8.43E-10	1.43E-9	5.24E-8	3.23E-10	9.21E-9	5.52E-11	-1.96E-8	4.24E-8
SQP	Pt	3.50E+1	7.45E-1	3.29E+0	3.90E+1	2.85E-1	2.14E+0	4.74E-2	-4.31E+1	-1.62E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.61E+0	1.25E-2	8.41E-1	7.47E+0	4.78E-3	2.47E-1	6.80E-4	-7.69E+0	3.11E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.61E+0	1.25E-2	8.41E-1	7.47E+0	4.78E-3	2.47E-1	6.80E-4	-7.69E+0	3.11E-2
PENRE	MJ	4.55E+1	9.24E-1	8.45E-1	4.72E+1	3.54E-1	3.69E+0	1.97E-2	-2.51E+1	2.62E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.55E+1	9.24E-1	8.45E-1	4.72E+1	3.54E-1	3.69E+0	1.97E-2	-2.51E+1	2.62E+1
PET	MJ	5.21E+1	9.37E-1	1.69E+0	5.47E+1	3.59E-1	3.94E+0	2.04E-2	-3.28E+1	2.62E+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	3.19E-2	9.85E-5	3.74E-2	6.93E-2	3.77E-5	3.68E-3	2.27E-5	-1.80E-2	5.51E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.05E-4	2.23E-6	1.17E-6	3.08E-4	8.52E-7	5.73E-6	2.27E-8	-2.09E-5	2.94E-4
NHWD	kg	2.00E-1	5.39E-2	8.56E-3	2.63E-1	2.07E-2	1.27E-1	8.26E-2	-8.93E-2	4.03E-1
RWD	kg	8.76E-5	5.92E-6	2.36E-6	9.59E-5	2.27E-6	1.33E-5	1.21E-7	-4.56E-5	6.60E-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

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