Environmental Profile

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

Ecochain v3.5.80

Product:	3025823 - PVC Elbow 87°3 GY 140 S/S 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	9.82E-1	4.09E-2	4.86E-2	1.07E+0	1.52E-2	7.66E-1	4.72E-3	-6.15E-1	1.24E+0
GWP-f	kg CO2 eq	1.26E+0	4.09E-2	3.86E-2	1.34E+0	1.52E-2	4.20E-1	4.71E-3	-7.20E-1	1.06E+0
GWP-b	kg CO2 eq	-2.84E-1	2.48E-5	9.93E-3	-2.74E-1	9.24E-6	3.46E-1	5.92E-6	1.07E-1	1.78E-1
GWP-luluc	kg CO2 eq	1.82E-3	1.45E-5	3.26E-5	1.87E-3	5.38E-6	1.90E-4	1.26E-7	-1.32E-3	7.36E-4
ODP	kg CFC11 eq	6.40E-7	9.42E-9	5.00E-9	6.54E-7	3.51E-9	5.25E-8	1.78E-10	-3.29E-7	3.81E-7
AP	mol H+ eq	6.25E-3	2.33E-4	2.01E-4	6.69E-3	8.67E-5	9.21E-4	4.33E-6	-3.16E-3	4.54E-3
EP-fw	kg P eq	6.32E-5	3.36E-7	9.14E-7	6.44E-5	1.25E-7	6.35E-6	5.68E-9	-3.47E-5	3.62E-5
EP-m	kg N eq	1.20E-3	8.33E-5	6.02E-5	1.34E-3	3.10E-5	2.31E-4	2.65E-6	-6.03E-4	1.00E-3
EP-T	mol N eq	1.29E-2	9.18E-4	7.04E-4	1.45E-2	3.42E-4	2.54E-3	1.73E-5	-6.60E-3	1.08E-2
POCP	kg NMVOC eq	4.04E-3	2.62E-4	1.78E-4	4.48E-3	9.77E-5	7.61E-4	5.93E-6	-2.16E-3	3.18E-3
ADP-mm	kg Sb eq	1.52E-3	1.06E-6	6.55E-7	1.53E-3	3.94E-7	3.65E-6	4.36E-9	-1.43E-5	1.52E-3
ADP-f	MJ	3.04E+1	6.27E-1	5.41E-1	3.16E+1	2.34E-1	2.47E+0	1.30E-2	-1.69E+1	1.74E+1
WDP	m3 depriv.	1.94E+0	1.92E-3	1.12E+0	3.06E+0	7.17E-4	9.42E-2	9.08E-5	-1.08E+0	2.08E+0
PM	disease inc.	4.88E-8	3.69E-9	2.98E-9	5.54E-8	1.37E-9	1.16E-8	8.95E-11	-3.09E-8	3.76E-8
IR	kBq U-235 eq	7.21E-2	2.74E-3	1.58E-3	7.64E-2	1.02E-3	8.79E-3	5.96E-5	-3.81E-2	4.83E-2
ETP-fw	CTUe	4.69E+1	5.09E-1	4.69E-1	4.79E+1	1.90E-1	1.84E+1	2.01E-1	-1.83E+1	4.83E+1
HTP-c	CTUh	1.21E-9	1.81E-11	3.81E-11	1.26E-9	6.75E-12	2.83E-10	3.61E-13	-5.04E-10	1.05E-9
HTP-nc	CTUh	3.59E-8	6.07E-10	9.57E-10	3.75E-8	2.26E-10	6.51E-9	3.87E-11	-1.46E-8	2.96E-8
SQP	Pt	3.33E+1	5.37E-1	2.01E+0	3.59E+1	2.00E-1	1.52E+0	3.32E-2	-4.24E+1	-4.84E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.99E+0	9.00E-3	5.14E-1	6.51E+0	3.35E-3	1.74E-1	4.77E-4	-7.41E+0	-7.16E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.99E+0	9.00E-3	5.14E-1	6.51E+0	3.35E-3	1.74E-1	4.77E-4	-7.41E+0	-7.16E-1
PENRE	MJ	3.26E+1	6.66E-1	5.86E-1	3.39E+1	2.48E-1	2.63E+0	1.38E-2	-1.81E+1	1.86E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.26E+1	6.66E-1	5.86E-1	3.39E+1	2.48E-1	2.63E+0	1.38E-2	-1.81E+1	1.86E+1
PET	MJ	3.86E+1	6.75E-1	1.10E+0	4.04E+1	2.51E-1	2.80E+0	1.43E-2	-2.55E+1	1.79E+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	2.29E-2	7.10E-5	2.62E-2	4.91E-2	2.64E-5	2.60E-3	1.59E-5	-1.40E-2	3.78E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.16E-4	1.60E-6	8.20E-7	2.18E-4	5.97E-7	4.11E-6	1.59E-8	-1.56E-5	2.07E-4
NHWD	kg	1.50E-1	3.89E-2	6.00E-3	1.95E-1	1.45E-2	9.07E-2	5.79E-2	-6.87E-2	2.89E-1
RWD	kg	6.39E-5	4.26E-6	1.66E-6	6.98E-5	1.59E-6	9.57E-6	8.46E-8	-3.46E-5	4.64E-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