Environmental Profile

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

Ecochain v3.5.80

Product:	3025930 - PVC Elbow 87°3 GY 32 SC/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	1.14E-1	3.68E-3	1.02E-2	1.27E-1	1.54E-3	8.07E-2	4.93E-4	-6.23E-2	1.48E-1
GWP-f	kg CO2 eq	1.35E-1	3.68E-3	7.18E-3	1.46E-1	1.54E-3	5.20E-2	4.93E-4	-7.52E-2	1.25E-1
GWP-b	kg CO2 eq	-2.18E-2	2.24E-6	3.05E-3	-1.88E-2	9.36E-7	2.87E-2	6.06E-7	1.30E-2	2.29E-2
GWP-luluc	kg CO2 eq	1.95E-4	1.30E-6	1.76E-5	2.14E-4	5.45E-7	1.85E-5	1.32E-8	-1.44E-4	8.92E-5
ODP	kg CFC11 eq	6.41E-8	8.48E-10	1.03E-9	6.60E-8	3.55E-10	5.09E-9	1.84E-11	-3.24E-8	3.90E-8
AP	mol H+ eq	6.76E-4	2.10E-5	8.46E-5	7.82E-4	8.78E-6	9.20E-5	4.48E-7	-3.18E-4	5.65E-4
EP-fw	kg P eq	6.54E-6	3.03E-8	1.89E-7	6.76E-6	1.27E-8	6.17E-7	5.90E-10	-3.57E-6	3.83E-6
EP-m	kg N eq	1.29E-4	7.50E-6	2.17E-5	1.58E-4	3.14E-6	2.35E-5	3.00E-7	-6.10E-5	1.24E-4
EP-T	mol N eq	1.39E-3	8.27E-5	3.14E-4	1.78E-3	3.46E-5	2.59E-4	1.78E-6	-6.70E-4	1.41E-3
POCP	kg NMVOC eq	4.45E-4	2.36E-5	6.42E-5	5.33E-4	9.89E-6	7.72E-5	6.14E-7	-2.16E-4	4.04E-4
ADP-mm	kg Sb eq	1.51E-4	9.52E-8	3.95E-7	1.51E-4	3.99E-8	3.61E-7	4.51E-10	-1.49E-6	1.50E-4
ADP-f	MJ	3.30E+0	5.65E-2	9.28E-2	3.45E+0	2.37E-2	2.44E-1	1.34E-3	-1.73E+0	2.00E+0
WDP	m3 depriv.	1.93E-1	1.73E-4	1.13E-1	3.06E-1	7.26E-5	9.18E-3	9.92E-6	-1.08E-1	2.07E-1
PM	disease inc.	5.70E-9	3.32E-10	1.09E-9	7.12E-9	1.39E-10	1.16E-9	9.23E-12	-3.16E-9	5.27E-9
IR	kBq U-235 eq	8.05E-3	2.47E-4	1.90E-4	8.49E-3	1.03E-4	8.67E-4	6.15E-6	-3.85E-3	5.61E-3
ETP-fw	CTUe	5.07E+0	4.59E-2	2.06E-1	5.32E+0	1.92E-2	1.77E+0	1.92E-2	-1.96E+0	5.17E+0
HTP-c	CTUh	1.20E-10	1.63E-12	1.08E-11	1.32E-10	6.83E-13	2.88E-11	3.74E-14	-4.86E-11	1.13E-10
HTP-nc	CTUh	3.59E-9	5.47E-11	3.54E-10	4.00E-9	2.29E-11	6.41E-10	3.75E-12	-1.45E-9	3.22E-9
SQP	Pt	2.90E+0	4.84E-2	1.91E+0	4.86E+0	2.02E-2	1.51E-1	3.42E-3	-4.17E+0	8.66E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.41E-1	8.11E-4	4.85E-1	1.03E+0	3.39E-4	1.70E-2	4.91E-5	-7.42E-1	3.02E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.41E-1	8.11E-4	4.85E-1	1.03E+0	3.39E-4	1.70E-2	4.91E-5	-7.42E-1	3.02E-1
PENRE	MJ	3.54E+0	6.00E-2	9.98E-2	3.70E+0	2.51E-2	2.60E-1	1.43E-3	-1.86E+0	2.13E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.54E+0	6.00E-2	9.98E-2	3.70E+0	2.51E-2	2.60E-1	1.43E-3	-1.86E+0	2.13E+0
PET	MJ	4.08E+0	6.08E-2	5.85E-1	4.73E+0	2.55E-2	2.77E-1	1.47E-3	-2.60E+0	2.43E+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	2.39E-3	6.40E-6	2.66E-3	5.06E-3	2.68E-6	2.62E-4	1.64E-6	-1.45E-3	3.87E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.10E-5	1.45E-7	8.11E-8	2.12E-5	6.05E-8	4.15E-7	1.64E-9	-1.60E-6	2.01E-5
NHWD	kg	1.56E-2	3.50E-3	6.07E-4	1.97E-2	1.47E-3	9.33E-3	6.01E-3	-6.66E-3	2.99E-2
RWD	kg	7.68E-6	3.84E-7	1.64E-7	8.23E-6	1.61E-7	9.52E-7	8.74E-9	-3.52E-6	5.83E-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