Environmental Profile

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

Ecochain v3.5.80

Product:	3025873 - Gutter Elbow 87°3 LGY 80 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	3.51E-1	1.31E-2	1.57E-2	3.80E-1	4.79E-3	2.52E-1	1.51E-3	-1.87E-1	4.51E-1
GWP-f	kg CO2 eq	4.37E-1	1.31E-2	1.24E-2	4.63E-1	4.79E-3	1.37E-1	1.51E-3	-2.38E-1	3.67E-1
GWP-b	kg CO2 eq	-8.71E-2	7.96E-6	3.32E-3	-8.38E-2	2.91E-6	1.15E-1	1.86E-6	5.24E-2	8.35E-2
GWP-luluc	kg CO2 eq	6.91E-4	4.64E-6	1.18E-5	7.08E-4	1.70E-6	5.91E-5	4.17E-8	-5.47E-4	2.22E-4
ODP	kg CFC11 eq	2.00E-7	3.02E-9	1.61E-9	2.04E-7	1.10E-9	1.64E-8	5.64E-11	-1.06E-7	1.16E-7
AP	mol H+ eq	2.60E-3	7.47E-5	7.00E-5	2.75E-3	2.73E-5	2.95E-4	1.38E-6	-1.09E-3	1.99E-3
EP-fw	kg P eq	2.22E-5	1.08E-7	2.95E-7	2.26E-5	3.94E-8	1.98E-6	1.85E-9	-1.26E-5	1.20E-5
EP-m	kg N eq	4.38E-4	2.67E-5	2.05E-5	4.85E-4	9.76E-6	7.53E-5	8.25E-7	-2.10E-4	3.61E-4
EP-T	mol N eq	4.67E-3	2.95E-4	2.47E-4	5.21E-3	1.08E-4	8.29E-4	5.47E-6	-2.32E-3	3.84E-3
POCP	kg NMVOC eq	1.45E-3	8.42E-5	6.07E-5	1.59E-3	3.08E-5	2.48E-4	1.88E-6	-7.39E-4	1.14E-3
ADP-mm	kg Sb eq	4.92E-4	3.39E-7	2.41E-7	4.93E-4	1.24E-7	1.17E-6	1.40E-9	-4.64E-6	4.89E-4
ADP-f	MJ	9.96E+0	2.01E-1	1.73E-1	1.03E+1	7.35E-2	7.86E-1	4.12E-3	-5.51E+0	5.69E+0
WDP	m3 depriv.	6.37E-1	6.18E-4	3.48E-1	9.86E-1	2.26E-4	2.91E-2	3.50E-5	-3.68E-1	6.47E-1
PM	disease inc.	1.88E-8	1.18E-9	1.02E-9	2.10E-8	4.32E-10	3.74E-9	2.83E-11	-1.15E-8	1.37E-8
IR	kBq U-235 eq	2.43E-2	8.80E-4	4.95E-4	2.56E-2	3.21E-4	2.80E-3	1.88E-5	-1.32E-2	1.56E-2
ETP-fw	CTUe	1.79E+1	1.63E-1	1.64E-1	1.82E+1	5.97E-2	5.63E+0	6.12E-2	-7.19E+0	1.68E+1
HTP-c	CTUh	4.72E-10	5.82E-12	1.26E-11	4.90E-10	2.12E-12	9.51E-11	1.19E-13	-1.69E-10	4.19E-10
HTP-nc	CTUh	1.23E-8	1.95E-10	3.27E-10	1.29E-8	7.12E-11	2.05E-9	1.19E-11	-4.98E-9	1.00E-8
SQP	Pt	1.13E+1	1.72E-1	8.22E-1	1.22E+1	6.29E-2	4.86E-1	1.05E-2	-1.66E+1	-3.76E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.05E+0	2.89E-3	2.09E-1	2.26E+0	1.06E-3	5.43E-2	1.48E-4	-2.92E+0	-6.01E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.05E+0	2.89E-3	2.09E-1	2.26E+0	1.06E-3	5.43E-2	1.48E-4	-2.92E+0	-6.01E-1
PENRE	MJ	1.07E+1	2.14E-1	1.87E-1	1.11E+1	7.81E-2	8.36E-1	4.37E-3	-5.92E+0	6.08E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.07E+1	2.14E-1	1.87E-1	1.11E+1	7.81E-2	8.36E-1	4.37E-3	-5.92E+0	6.08E+0
PET	MJ	1.27E+1	2.17E-1	3.96E-1	1.33E+1	7.91E-2	8.90E-1	4.52E-3	-8.84E+0	5.48E+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	8.20E-3	2.28E-5	8.15E-3	1.64E-2	8.32E-6	8.05E-4	5.00E-6	-5.11E-3	1.21E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.99E-5	5.15E-7	2.55E-7	7.07E-5	1.88E-7	1.33E-6	5.08E-9	-5.16E-6	6.71E-5
NHWD	kg	7.13E-2	1.25E-2	1.87E-3	8.56E-2	4.56E-3	2.93E-2	1.82E-2	-2.31E-2	1.15E-1
RWD	kg	2.17E-5	1.37E-6	5.15E-7	2.36E-5	5.00E-7	3.09E-6	2.67E-8	-1.20E-5	1.52E-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

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