Environmental Profile

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

Ecochain v3.5.80

Product:	4005640 - PVC Bend 45° GY 200 S/SP
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	1.36E+0	6.13E-2	7.26E-2	1.49E+0	2.22E-2	1.28E+0	6.87E-3	-8.90E-1	1.92E+0
GWP-f	kg CO2 eq	1.91E+0	6.12E-2	5.74E-2	2.03E+0	2.22E-2	6.17E-1	6.87E-3	-1.10E+0	1.58E+0
GWP-b	kg CO2 eq	-5.52E-1	3.72E-5	1.52E-2	-5.37E-1	1.35E-5	6.65E-1	8.63E-6	2.08E-1	3.36E-1
GWP-luluc	kg CO2 eq	3.01E-3	2.17E-5	5.25E-5	3.09E-3	7.84E-6	2.78E-4	1.84E-7	-2.36E-3	1.02E-3
ODP	kg CFC11 eq	9.41E-7	1.41E-8	7.46E-9	9.62E-7	5.11E-9	7.74E-8	2.60E-10	-4.86E-7	5.59E-7
AP	mol H+ eq	9.50E-3	3.49E-4	3.16E-4	1.02E-2	1.26E-4	1.37E-3	6.32E-6	-4.97E-3	6.70E-3
EP-fw	kg P eq	9.63E-5	5.04E-7	1.37E-6	9.81E-5	1.82E-7	9.31E-6	8.28E-9	-5.60E-5	5.17E-5
EP-m	kg N eq	1.87E-3	1.25E-4	9.31E-5	2.08E-3	4.52E-5	3.48E-4	3.86E-6	-9.68E-4	1.51E-3
EP-T	mol N eq	2.01E-2	1.38E-3	1.11E-3	2.25E-2	4.98E-4	3.83E-3	2.52E-5	-1.07E-2	1.62E-2
POCP	kg NMVOC eq	6.23E-3	3.93E-4	2.76E-4	6.90E-3	1.42E-4	1.15E-3	8.64E-6	-3.45E-3	4.74E-3
ADP-mm	kg Sb eq	2.21E-3	1.58E-6	1.07E-6	2.22E-3	5.73E-7	5.44E-6	6.35E-9	-2.15E-5	2.20E-3
ADP-f	MJ	4.53E+1	9.40E-1	8.02E-1	4.71E+1	3.40E-1	3.66E+0	1.90E-2	-2.53E+1	2.57E+1
WDP	m3 depriv.	2.86E+0	2.88E-3	1.63E+0	4.49E+0	1.04E-3	1.38E-1	1.32E-4	-1.65E+0	2.98E+0
PM	disease inc.	7.78E-8	5.53E-9	4.63E-9	8.80E-8	2.00E-9	1.73E-8	1.30E-10	-5.23E-8	5.50E-8
IR	kBq U-235 eq	1.08E-1	4.11E-3	2.32E-3	1.15E-1	1.49E-3	1.31E-2	8.69E-5	-5.95E-2	6.97E-2
ETP-fw	CTUe	7.52E+1	7.63E-1	7.39E-1	7.67E+1	2.76E-1	2.69E+1	2.93E-1	-3.12E+1	7.30E+1
HTP-c	CTUh	1.84E-9	2.72E-11	5.79E-11	1.93E-9	9.83E-12	4.21E-10	5.25E-13	-8.14E-10	1.55E-9
HTP-nc	CTUh	5.35E-8	9.10E-10	1.48E-9	5.59E-8	3.29E-10	9.59E-9	5.64E-11	-2.28E-8	4.31E-8
SQP	Pt	6.22E+1	8.04E-1	3.53E+0	6.65E+1	2.91E-1	2.25E+0	4.84E-2	-8.09E+1	-1.18E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.08E+1	1.35E-2	9.01E-1	1.17E+1	4.88E-3	2.56E-1	6.94E-4	-1.39E+1	-1.92E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.08E+1	1.35E-2	9.01E-1	1.17E+1	4.88E-3	2.56E-1	6.94E-4	-1.39E+1	-1.92E+0
PENRE	MJ	4.86E+1	9.98E-1	8.68E-1	5.05E+1	3.61E-1	3.89E+0	2.01E-2	-2.72E+1	2.75E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.86E+1	9.98E-1	8.68E-1	5.05E+1	3.61E-1	3.89E+0	2.01E-2	-2.72E+1	2.75E+1
PET	MJ	5.95E+1	1.01E+0	1.77E+0	6.22E+1	3.66E-1	4.15E+0	2.08E-2	-4.12E+1	2.56E+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	3.41E-2	1.06E-4	3.82E-2	7.25E-2	3.85E-5	3.81E-3	2.32E-5	-2.25E-2	5.39E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.15E-4	2.40E-6	1.19E-6	3.19E-4	8.70E-7	6.14E-6	2.31E-8	-2.41E-5	3.02E-4
NHWD	kg	2.34E-1	5.82E-2	8.75E-3	3.01E-1	2.11E-2	1.35E-1	8.43E-2	-1.10E-1	4.31E-1
RWD	kg	9.64E-5	6.39E-6	2.42E-6	1.05E-4	2.31E-6	1.43E-5	1.23E-7	-5.45E-5	6.75E-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