Environmental Profile

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

Ecochain v3.5.80

Ecochain

Product:	3002895 - PVC Pipe GY 90x3 L=4 SG/CH Uncert
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3
	7772 SG Hardenberg
	Netherlands

LCA standard:	NMD Bepalingsmethode 1.1 (2022)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	08-06-2023
End of validity:	08-06-2028
Verifier:	Martijn van Hövell - SGS Search

WAVIN
An Orbia business.

SGS | SEARCH

Wavin carries a complete PVC range of outdoor sewers. With PVC as a material, a smooth-walled, flexible and completely watertight piping system is obtained. Moreover, PVC is absolutely resistant to all substances that occur in domestic waste water. By working with a light material, large pipe lengths and plug connections, a very fast installation is guaranteed.

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 - NL - Hardenberg - Verified (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

ECI = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3––eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **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 SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.93	0.04	0.04	1.01	0.02	0.34	0	-0.47	0.9
ADPE	kg Sb-eq	2.36E-4	8.05E-6	7.88E-6	2.52E-4	3.42E-6	2.82E-5	3.52E-8	-9.87E-5	1.85E-4
ADPF	kg Sb-eq	1.04E-1	2.32E-3	2.11E-3	1.08E-1	9.64E-4	9.96E-3	4.98E-5	-5.55E-2	6.38E-2
GWP	kg CO2-eq	8.35E+0	3.15E-1	3.76E-1	9.04E+0	1.31E-1	3.27E+0	3.08E-2	-4.67E+0	7.80E+0
ODP	kg CFC-11-eq	4.94E-6	5.59E-8	3.53E-8	5.03E-6	2.43E-8	3.96E-7	1.20E-9	-2.45E-6	3.00E-6
POCP	kg ethene-eq	5.12E-3	1.90E-4	1.66E-4	5.48E-3	7.88E-5	7.83E-4	8.26E-6	-2.38E-3	3.97E-3
AP	kg SO2-eq	3.21E-2	1.39E-3	1.47E-3	3.49E-2	5.65E-4	5.68E-3	2.65E-5	-1.53E-2	2.59E-2
EP	kg PO4 3--eq	3.82E-3	2.72E-4	2.33E-4	4.33E-3	1.13E-4	8.60E-4	1.01E-5	-1.83E-3	3.48E-3
HTP	kg 1,4-DB-eq	3.29E+0	1.33E-1	1.42E-1	3.56E+0	5.62E-2	1.54E+0	2.70E-3	-1.48E+0	3.68E+0
FAETP	kg 1,4-DB-eq	7.06E-2	3.87E-3	5.77E-3	8.02E-2	1.64E-3	2.26E-2	7.85E-4	-3.25E-2	7.28E-2
MAETP	kg 1,4-DB-eq	2.05E+2	1.39E+1	2.36E+1	2.43E+2	5.88E+0	7.42E+1	9.66E-1	-9.57E+1	2.28E+2
TETP	kg 1,4-DB-eq	2.27E-2	4.69E-4	8.81E-3	3.20E-2	1.99E-4	5.50E-3	8.91E-6	-1.08E-2	2.69E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	8.37E+0	3.18E-1	4.43E-1	9.13E+0	1.32E-1	3.57E+0	3.59E-2	-4.82E+0	8.05E+0
GWP-f	kg CO2 eq	8.57E+0	3.18E-1	3.47E-1	9.23E+0	1.32E-1	3.30E+0	3.59E-2	-4.78E+0	7.92E+0
GWP-b	kg CO2 eq	-2.02E-1	1.47E-4	7.49E-2	-1.27E-1	8.04E-5	2.69E-1	4.64E-5	-3.38E-2	1.08E-1
GWP-luluc	kg CO2 eq	6.74E-3	1.16E-4	2.11E-2	2.80E-2	4.68E-5	1.53E-3	9.86E-7	-3.17E-3	2.64E-2
ODP	kg CFC11 eq	4.87E-6	7.01E-8	4.19E-8	4.98E-6	3.05E-8	4.08E-7	1.49E-9	-2.42E-6	2.99E-6
AP	mol H+ eq	3.86E-2	1.84E-3	1.89E-3	4.24E-2	7.54E-4	7.12E-3	3.55E-5	-1.84E-2	3.19E-2
EP-fw	kg P eq	3.78E-4	3.21E-6	4.96E-6	3.87E-4	1.09E-6	5.09E-5	4.44E-8	-1.79E-4	2.60E-4
EP-m	kg N eq	6.49E-3	6.49E-4	5.57E-4	7.69E-3	2.70E-4	1.73E-3	2.14E-5	-3.19E-3	6.53E-3
EP-T	mol N eq	7.01E-2	7.16E-3	5.97E-3	8.33E-2	2.97E-3	1.91E-2	1.42E-4	-3.41E-2	7.13E-2
POCP	kg NMVOC eq	2.43E-2	2.04E-3	1.69E-3	2.81E-2	8.50E-4	5.75E-3	4.81E-5	-1.17E-2	2.30E-2
ADP-mm	kg Sb eq	2.36E-4	8.05E-6	7.88E-6	2.52E-4	3.42E-6	2.82E-5	3.52E-8	-9.87E-5	1.85E-4
ADP-f	MJ	2.21E+2	4.79E+0	4.01E+0	2.30E+2	2.03E+0	1.97E+1	1.08E-1	-1.16E+2	1.35E+2
WDP	m3 depriv.	1.45E+1	1.71E-2	2.71E+0	1.73E+1	6.23E-3	7.57E-1	6.08E-4	-6.97E+0	1.11E+1
PM	disease inc.	2.67E-7	2.85E-8	2.93E-8	3.25E-7	1.19E-8	9.02E-8	7.37E-10	-1.18E-7	3.10E-7
IR	kBq U-235 eq	4.67E-1	2.01E-2	7.24E-3	4.94E-1	8.88E-3	6.87E-2	4.93E-4	-2.25E-1	3.47E-1
ETP-fw	CTUe	1.45E+2	4.27E+0	6.69E+0	1.56E+2	1.65E+0	1.44E+2	1.58E+0	-6.88E+1	2.35E+2
HTP-c	CTUh	5.84E-9	1.39E-10	2.28E-10	6.21E-9	5.87E-11	2.15E-9	2.77E-12	-2.57E-9	5.85E-9
HTP-nc	CTUh	1.87E-7	4.67E-9	6.99E-9	1.98E-7	1.97E-9	5.13E-8	3.05E-10	-8.88E-8	1.63E-7
SQP	Pt	5.16E+1	4.16E+0	3.00E-1	5.61E+1	1.74E+0	1.24E+1	2.72E-1	-1.77E+1	5.28E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.43E+1	6.00E-2	1.21E+1	2.64E+1	2.91E-2	1.40E+0	3.82E-3	-6.13E+0	2.17E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.43E+1	6.00E-2	1.21E+1	2.64E+1	2.91E-2	1.40E+0	3.82E-3	-6.13E+0	2.17E+1
PENRE	MJ	2.37E+2	5.09E+0	4.35E+0	2.47E+2	2.16E+0	2.10E+1	1.14E-1	-1.25E+2	1.44E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.37E+2	5.09E+0	4.35E+0	2.47E+2	2.16E+0	2.10E+1	1.14E-1	-1.25E+2	1.44E+2
PET	MJ	2.51E+2	5.15E+0	1.64E+1	2.73E+2	2.19E+0	2.24E+1	1.18E-1	-1.32E+2	1.66E+2
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	1.55E-1	5.84E-4	6.39E-2	2.19E-1	2.30E-4	2.07E-2	1.32E-4	-7.29E-2	1.67E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.75E-4	1.21E-5	5.62E-6	1.93E-4	5.19E-6	3.17E-5	1.30E-7	-9.67E-5	1.33E-4
NHWD	kg	8.29E-1	3.04E-1	8.11E-3	1.14E+0	1.26E-1	7.34E-1	5.03E-1	-3.73E-1	2.13E+0
RWD	kg	4.09E-4	3.15E-5	1.01E-5	4.51E-4	1.38E-5	7.40E-5	7.04E-7	-1.98E-4	3.41E-4
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