Environmental Profile

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

Ecochain v3.5.80

Product:	3082294 - PVC Pipe DGR KOMO 200x6.2 PN8 L=10 CH
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3 7772 SG Hardenberg Netherlands

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.

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

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	11.74	0.26	0.5	12.5	0.18	4.09	0.03	-5.87	10.93
ADPE	kg Sb-eq	6.67E-2	5.45E-5	9.15E-5	6.69E-2	3.91E-5	3.33E-4	4.20E-7	-1.23E-3	6.60E-2
ADPF	kg Sb-eq	1.28E+0	1.57E-2	2.45E-2	1.32E+0	1.10E-2	1.17E-1	5.88E-4	-6.92E-1	7.58E-1
GWP	kg CO2-eq	1.05E+2	2.13E+0	4.36E+0	1.11E+2	1.50E+0	3.94E+1	3.84E-1	-5.82E+1	9.44E+1
ODP	kg CFC-11-eq	6.10E-5	3.78E-7	4.10E-7	6.18E-5	2.78E-7	4.81E-6	1.41E-8	-3.05E-5	3.64E-5
POCP	kg ethene-eq	6.26E-2	1.29E-3	1.92E-3	6.58E-2	9.00E-4	9.18E-3	1.01E-4	-2.99E-2	4.61E-2
AP	kg SO2-eq	4.16E-1	9.38E-3	1.71E-2	4.43E-1	6.45E-3	6.76E-2	3.15E-4	-1.91E-1	3.26E-1
EP	kg PO4 3−-eq	5.06E-2	1.84E-3	2.70E-3	5.51E-2	1.29E-3	1.02E-2	1.22E-4	-2.33E-2	4.35E-2
HTP	kg 1,4-DB-eq	4.12E+1	8.98E-1	1.65E+0	4.37E+1	6.41E-1	1.80E+1	3.26E-2	-1.86E+1	4.38E+1
FAETP	kg 1,4-DB-eq	1.02E+0	2.62E-2	6.70E-2	1.11E+0	1.88E-2	2.67E-1	9.85E-3	-4.07E-1	1.00E+0
MAETP	kg 1,4-DB-eq	2.78E+3	9.43E+1	2.73E+2	3.15E+3	6.71E+1	8.87E+2	1.21E+1	-1.19E+3	2.92E+3
TETP	kg 1,4-DB-eq	2.92E-1	3.17E-3	1.02E-1	3.98E-1	2.27E-3	6.43E-2	1.09E-4	-1.35E-1	3.29E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	9.97E+1	2.15E+0	5.14E+0	1.07E+2	1.51E+0	4.85E+1	4.47E-1	-6.00E+1	9.74E+1
GWP-f	kg CO2 eq	1.07E+2	2.15E+0	4.02E+0	1.14E+2	1.51E+0	3.98E+1	4.47E-1	-5.96E+1	9.57E+1
GWP-b	kg CO2 eq	-7.80E+0	9.93E-4	8.70E-1	-6.93E+0	9.18E-4	8.71E+0	5.69E-4	-4.20E-1	1.37E+0
GWP-luluc	kg CO2 eq	9.48E-2	7.88E-4	2.45E-1	3.41E-1	5.35E-4	1.83E-2	1.20E-5	-4.01E-2	3.19E-1
ODP	kg CFC11 eq	6.01E-5	4.75E-7	4.86E-7	6.11E-5	3.48E-7	4.95E-6	1.75E-8	-3.02E-5	3.62E-5
AP	mol H+ eq	5.03E-1	1.25E-2	2.19E-2	5.38E-1	8.61E-3	8.48E-2	4.21E-4	-2.31E-1	4.01E-1
EP-fw	kg P eq	4.96E-3	2.17E-5	5.75E-5	5.04E-3	1.24E-5	6.08E-4	5.40E-7	-2.23E-3	3.44E-3
EP-m	kg N eq	8.62E-2	4.39E-3	6.46E-3	9.71E-2	3.08E-3	2.06E-2	2.58E-4	-4.04E-2	8.07E-2
EP-T	mol N eq	9.41E-1	4.85E-2	6.93E-2	1.06E+0	3.39E-2	2.28E-1	1.68E-3	-4.35E-1	8.87E-1
POCP	kg NMVOC eq	3.14E-1	1.38E-2	1.96E-2	3.48E-1	9.70E-3	6.82E-2	5.75E-4	-1.48E-1	2.78E-1
ADP-mm	kg Sb eq	6.67E-2	5.45E-5	9.15E-5	6.69E-2	3.91E-5	3.33E-4	4.20E-7	-1.23E-3	6.60E-2
ADP-f	MJ	2.73E+3	3.24E+1	4.66E+1	2.81E+3	2.32E+1	2.32E+2	1.27E+0	-1.45E+3	1.61E+3
WDP	m3 depriv.	1.81E+2	1.16E-1	3.15E+1	2.13E+2	7.12E-2	9.12E+0	7.82E-3	-8.66E+1	1.36E+2
PM	disease inc.	3.61E-6	1.93E-7	3.40E-7	4.15E-6	1.36E-7	1.06E-6	8.72E-9	-1.51E-6	3.84E-6
IR	kBq U-235 eq	6.05E+0	1.36E-1	8.40E-2	6.27E+0	1.01E-1	8.12E-1	5.83E-3	-2.80E+0	4.39E+0
ETP-fw	CTUe	2.39E+3	2.89E+1	7.76E+1	2.49E+3	1.88E+1	1.76E+3	1.95E+1	-8.72E+2	3.42E+3
HTP-c	CTUh	8.52E-8	9.38E-10	2.65E-9	8.88E-8	6.70E-10	2.59E-8	3.40E-11	-3.22E-8	8.32E-8
HTP-nc	CTUh	2.74E-6	3.16E-8	8.11E-8	2.85E-6	2.25E-8	6.17E-7	3.74E-9	-1.11E-6	2.38E-6
SQP	Pt	1.15E+3	2.81E+1	3.48E+0	1.18E+3	1.98E+1	1.44E+2	3.23E+0	-3.24E+2	1.02E+3

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.55E+2	4.06E-1	1.40E+2	3.95E+2	3.33E-1	1.67E+1	4.63E-2	-9.71E+1	3.15E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.55E+2	4.06E-1	1.40E+2	3.95E+2	3.33E-1	1.67E+1	4.63E-2	-9.71E+1	3.15E+2
PENRE	MJ	2.93E+3	3.44E+1	5.05E+1	3.01E+3	2.46E+1	2.47E+2	1.35E+0	-1.56E+3	1.72E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.93E+3	3.44E+1	5.05E+1	3.01E+3	2.46E+1	2.47E+2	1.35E+0	-1.56E+3	1.72E+3
PET	MJ	3.18E+3	3.48E+1	1.91E+2	3.41E+3	2.50E+1	2.63E+2	1.39E+0	-1.66E+3	2.04E+3
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	1.98E+0	3.95E-3	7.41E-1	2.72E+0	2.63E-3	2.50E-1	1.56E-3	-9.06E-1	2.07E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.03E-2	8.22E-5	6.52E-5	1.04E-2	5.93E-5	3.74E-4	1.54E-6	-1.21E-3	9.68E-3
NHWD	kg	1.09E+1	2.06E+0	9.41E-2	1.30E+1	1.44E+0	8.58E+0	5.75E+0	-4.68E+0	2.41E+1
RWD	kg	5.27E-3	2.13E-4	1.17E-4	5.60E-3	1.58E-4	8.69E-4	8.28E-6	-2.47E-3	4.16E-3
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