Environmental Profile

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

Ecochain v3.5.80

Product:	3009698 - PVC PressurePp DN300 PN12.5 L=6 SC/CH
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3 7772 SG Hardenberg Netherlands

Our range of PVC pressure pipes offers the right solution for every part of the main network in your sewerage system.

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	28.44	0.51	1.17	30.13	0.42	9.74	0.06	-14.11	26.24
ADPE	kg Sb-eq	2.10E-1	1.09E-4	2.13E-4	2.11E-1	9.07E-5	7.84E-4	9.95E-7	-2.97E-3	2.08E-1
ADPF	kg Sb-eq	3.10E+0	3.14E-2	5.71E-2	3.18E+0	2.55E-2	2.75E-1	1.39E-3	-1.67E+0	1.82E+0
GWP	kg CO2-eq	2.53E+2	4.27E+0	1.02E+1	2.68E+2	3.48E+0	9.56E+1	9.23E-1	-1.41E+2	2.27E+2
ODP	kg CFC-11-eq	1.46E-4	7.57E-7	9.54E-7	1.48E-4	6.45E-7	1.14E-5	3.31E-8	-7.34E-5	8.67E-5
POCP	kg ethene-eq	1.51E-1	2.58E-3	4.47E-3	1.58E-1	2.09E-3	2.14E-2	2.41E-4	-7.14E-2	1.10E-1
AP	kg SO2-eq	1.01E+0	1.88E-2	3.98E-2	1.07E+0	1.50E-2	1.59E-1	7.43E-4	-4.57E-1	7.86E-1
EP	kg PO4 3−-eq	1.22E-1	3.69E-3	6.29E-3	1.32E-1	2.99E-3	2.40E-2	2.92E-4	-5.50E-2	1.04E-1
HTP	kg 1,4-DB-eq	1.00E+2	1.80E+0	3.83E+0	1.06E+2	1.49E+0	4.20E+1	7.75E-2	-4.45E+1	1.05E+2
FAETP	kg 1,4-DB-eq	2.53E+0	5.25E-2	1.56E-1	2.74E+0	4.36E-2	6.34E-1	2.36E-2	-9.73E-1	2.47E+0
MAETP	kg 1,4-DB-eq	6.84E+3	1.89E+2	6.37E+2	7.67E+3	1.56E+2	2.11E+3	2.89E+1	-2.87E+3	7.09E+3
TETP	kg 1,4-DB-eq	7.06E-1	6.35E-3	2.38E-1	9.51E-1	5.27E-3	1.51E-1	2.60E-4	-3.24E-1	7.83E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.52E+2	4.31E+0	1.20E+1	2.68E+2	3.51E+0	1.06E+2	1.08E+0	-1.45E+2	2.34E+2
GWP-f	kg CO2 eq	2.59E+2	4.30E+0	9.37E+0	2.73E+2	3.51E+0	9.63E+1	1.08E+0	-1.44E+2	2.30E+2
GWP-b	kg CO2 eq	-7.53E+0	1.99E-3	2.03E+0	-5.50E+0	2.13E-3	9.77E+0	1.36E-3	-1.01E+0	3.26E+0
GWP-luluc	kg CO2 eq	2.29E-1	1.58E-3	5.71E-1	8.02E-1	1.24E-3	4.31E-2	2.86E-5	-9.49E-2	7.51E-1
ODP	kg CFC11 eq	1.44E-4	9.50E-7	1.13E-6	1.46E-4	8.08E-7	1.18E-5	4.11E-8	-7.27E-5	8.63E-5
AP	mol H+ eq	1.22E+0	2.50E-2	5.11E-2	1.30E+0	2.00E-2	1.99E-1	9.95E-4	-5.51E-1	9.65E-1
EP-fw	kg P eq	1.21E-2	4.34E-5	1.34E-4	1.23E-2	2.89E-5	1.44E-3	1.29E-6	-5.34E-3	8.41E-3
EP-m	kg N eq	2.08E-1	8.80E-3	1.51E-2	2.32E-1	7.15E-3	4.82E-2	6.15E-4	-9.58E-2	1.93E-1
EP-T	mol N eq	2.28E+0	9.70E-2	1.61E-1	2.53E+0	7.88E-2	5.32E-1	3.97E-3	-1.02E+0	2.12E+0
POCP	kg NMVOC eq	7.60E-1	2.77E-2	4.56E-2	8.33E-1	2.25E-2	1.59E-1	1.36E-3	-3.53E-1	6.64E-1
ADP-mm	kg Sb eq	2.10E-1	1.09E-4	2.13E-4	2.11E-1	9.07E-5	7.84E-4	9.95E-7	-2.97E-3	2.08E-1
ADP-f	MJ	6.59E+3	6.49E+1	1.08E+2	6.77E+3	5.38E+1	5.43E+2	2.99E+0	-3.50E+3	3.86E+3
WDP	m3 depriv.	4.37E+2	2.32E-1	7.33E+1	5.11E+2	1.65E-1	2.16E+1	1.91E-2	-2.08E+2	3.24E+2
PM	disease inc.	8.24E-6	3.87E-7	7.93E-7	9.41E-6	3.17E-7	2.46E-6	2.06E-8	-3.54E-6	8.68E-6
IR	kBq U-235 eq	1.47E+1	2.72E-1	1.96E-1	1.52E+1	2.35E-1	1.91E+0	1.37E-2	-6.73E+0	1.06E+1
ETP-fw	CTUe	6.15E+3	5.79E+1	1.81E+2	6.38E+3	4.37E+1	4.22E+3	4.67E+1	-2.05E+3	8.64E+3
HTP-c	CTUh	2.11E-7	1.88E-9	6.17E-9	2.19E-7	1.56E-9	6.05E-8	8.15E-11	-7.69E-8	2.05E-7
HTP-nc	CTUh	6.85E-6	6.33E-8	1.89E-7	7.10E-6	5.21E-8	1.46E-6	8.96E-9	-2.66E-6	5.97E-6
SQP	Pt	1.76E+3	5.63E+1	8.11E+0	1.82E+3	4.61E+1	3.35E+2	7.64E+0	-5.62E+2	1.65E+3

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.65E+2	8.13E-1	3.27E+2	7.93E+2	7.72E-1	3.95E+1	1.10E-1	-1.90E+2	6.43E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.65E+2	8.13E-1	3.27E+2	7.93E+2	7.72E-1	3.95E+1	1.10E-1	-1.90E+2	6.43E+2
PENRE	MJ	7.07E+3	6.89E+1	1.18E+2	7.26E+3	5.72E+1	5.78E+2	3.18E+0	-3.77E+3	4.12E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.07E+3	6.89E+1	1.18E+2	7.26E+3	5.72E+1	5.78E+2	3.18E+0	-3.77E+3	4.12E+3
PET	MJ	7.54E+3	6.97E+1	4.45E+2	8.05E+3	5.79E+1	6.18E+2	3.29E+0	-3.96E+3	4.77E+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	4.79E+0	7.91E-3	1.73E+0	6.53E+0	6.09E-3	5.93E-1	3.67E-3	-2.17E+0	4.95E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.10E-2	1.65E-4	1.52E-4	3.13E-2	1.38E-4	8.76E-4	3.64E-6	-2.91E-3	2.94E-2
NHWD	kg	2.60E+1	4.12E+0	2.19E-1	3.03E+1	3.34E+0	1.99E+1	1.34E+1	-1.12E+1	5.57E+1
RWD	kg	1.28E-2	4.26E-4	2.73E-4	1.35E-2	3.66E-4	2.03E-3	1.95E-5	-5.94E-3	9.95E-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