Environmental Profile

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

Ecochain v3.5.80

Product:	3009691 - PVC PressurePp DN100 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	3.41	0.07	0.14	3.63	0.05	1.2	0.01	-1.69	3.2
ADPE	kg Sb-eq	1.93E-2	1.55E-5	2.62E-5	1.93E-2	1.12E-5	9.52E-5	1.21E-7	-3.57E-4	1.91E-2
ADPF	kg Sb-eq	3.75E-1	4.47E-3	7.02E-3	3.86E-1	3.16E-3	3.34E-2	1.69E-4	-2.00E-1	2.23E-1
GWP	kg CO2-eq	3.05E+1	6.08E-1	1.25E+0	3.23E+1	4.30E-1	1.19E+1	1.11E-1	-1.69E+1	2.79E+1
ODP	kg CFC-11-eq	1.75E-5	1.08E-7	1.17E-7	1.77E-5	7.97E-8	1.37E-6	4.06E-9	-8.71E-6	1.05E-5
POCP	kg ethene-eq	1.85E-2	3.67E-4	5.50E-4	1.94E-2	2.58E-4	2.61E-3	2.92E-5	-8.54E-3	1.38E-2
AP	kg SO2-eq	1.21E-1	2.67E-3	4.90E-3	1.28E-1	1.85E-3	1.93E-2	9.07E-5	-5.44E-2	9.53E-2
EP	kg PO4 3−-eq	1.46E-2	5.25E-4	7.73E-4	1.59E-2	3.69E-4	2.92E-3	3.61E-5	-6.57E-3	1.26E-2
HTP	kg 1,4-DB-eq	1.20E+1	2.56E-1	4.71E-1	1.27E+1	1.84E-1	5.13E+0	9.40E-3	-5.29E+0	1.27E+1
FAETP	kg 1,4-DB-eq	2.93E-1	7.47E-3	1.92E-2	3.19E-1	5.39E-3	7.70E-2	2.84E-3	-1.16E-1	2.89E-1
MAETP	kg 1,4-DB-eq	8.08E+2	2.69E+1	7.83E+1	9.14E+2	1.92E+1	2.55E+2	3.47E+0	-3.41E+2	8.50E+2
TETP	kg 1,4-DB-eq	8.39E-2	9.04E-4	2.93E-2	1.14E-1	6.51E-4	1.84E-2	3.13E-5	-3.85E-2	9.47E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.01E+1	6.13E-1	1.47E+0	3.21E+1	4.34E-1	1.34E+1	1.29E-1	-1.74E+1	2.87E+1
GWP-f	kg CO2 eq	3.12E+1	6.13E-1	1.15E+0	3.30E+1	4.33E-1	1.20E+1	1.29E-1	-1.73E+1	2.83E+1
GWP-b	kg CO2 eq	-1.18E+0	2.83E-4	2.49E-1	-9.27E-1	2.63E-4	1.43E+0	1.65E-4	-1.19E-1	3.81E-1
GWP-luluc	kg CO2 eq	2.70E-2	2.24E-4	7.02E-2	9.74E-2	1.53E-4	5.21E-3	3.44E-6	-1.13E-2	9.15E-2
ODP	kg CFC11 eq	1.73E-5	1.35E-7	1.39E-7	1.76E-5	9.98E-8	1.41E-6	5.04E-9	-8.63E-6	1.04E-5
AP	mol H+ eq	1.46E-1	3.55E-3	6.28E-3	1.56E-1	2.47E-3	2.42E-2	1.21E-4	-6.57E-2	1.17E-1
EP-fw	kg P eq	1.43E-3	6.18E-6	1.65E-5	1.46E-3	3.57E-6	1.74E-4	1.56E-7	-6.35E-4	9.98E-4
EP-m	kg N eq	2.49E-2	1.25E-3	1.85E-3	2.80E-2	8.83E-4	5.89E-3	7.63E-5	-1.14E-2	2.34E-2
EP-T	mol N eq	2.71E-1	1.38E-2	1.99E-2	3.05E-1	9.73E-3	6.49E-2	4.85E-4	-1.23E-1	2.57E-1
POCP	kg NMVOC eq	9.17E-2	3.94E-3	5.61E-3	1.01E-1	2.78E-3	1.94E-2	1.66E-4	-4.22E-2	8.14E-2
ADP-mm	kg Sb eq	1.93E-2	1.55E-5	2.62E-5	1.93E-2	1.12E-5	9.52E-5	1.21E-7	-3.57E-4	1.91E-2
ADP-f	MJ	7.98E+2	9.24E+0	1.33E+1	8.20E+2	6.65E+0	6.62E+1	3.66E-1	-4.19E+2	4.74E+2
WDP	m3 depriv.	5.22E+1	3.31E-2	9.02E+0	6.12E+1	2.04E-2	2.61E+0	2.21E-3	-2.47E+1	3.91E+1
PM	disease inc.	1.02E-6	5.50E-8	9.75E-8	1.17E-6	3.91E-8	3.01E-7	2.51E-9	-4.23E-7	1.09E-6
IR	kBq U-235 eq	1.77E+0	3.87E-2	2.41E-2	1.83E+0	2.91E-2	2.32E-1	1.68E-3	-8.00E-1	1.29E+0
ETP-fw	CTUe	6.88E+2	8.24E+0	2.22E+1	7.19E+2	5.40E+0	5.05E+2	5.57E+0	-2.45E+2	9.90E+2
HTP-c	CTUh	2.42E-8	2.67E-10	7.59E-10	2.52E-8	1.92E-10	7.31E-9	9.78E-12	-9.15E-9	2.36E-8
HTP-nc	CTUh	7.84E-7	9.01E-9	2.32E-8	8.16E-7	6.44E-9	1.76E-7	1.07E-9	-3.16E-7	6.84E-7
SQP	Pt	2.34E+2	8.02E+0	9.97E-1	2.43E+2	5.69E+0	4.10E+1	9.33E-1	-7.20E+1	2.19E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.90E+1	1.16E-1	4.02E+1	9.93E+1	9.54E-2	4.78E+0	1.34E-2	-2.36E+1	8.06E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.90E+1	1.16E-1	4.02E+1	9.93E+1	9.54E-2	4.78E+0	1.34E-2	-2.36E+1	8.06E+1
PENRE	MJ	8.55E+2	9.81E+0	1.44E+1	8.80E+2	7.06E+0	7.04E+1	3.89E-1	-4.51E+2	5.06E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.55E+2	9.81E+0	1.44E+1	8.80E+2	7.06E+0	7.04E+1	3.89E-1	-4.51E+2	5.06E+2
PET	MJ	9.14E+2	9.93E+0	5.47E+1	9.79E+2	7.16E+0	7.52E+1	4.02E-1	-4.75E+2	5.87E+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	5.72E-1	1.13E-3	2.12E-1	7.85E-1	7.53E-4	7.19E-2	4.49E-4	-2.59E-1	6.00E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.95E-3	2.34E-5	1.87E-5	2.99E-3	1.70E-5	1.07E-4	4.43E-7	-3.49E-4	2.76E-3
NHWD	kg	3.11E+0	5.86E-1	2.69E-2	3.72E+0	4.12E-1	2.45E+0	1.66E+0	-1.33E+0	6.91E+0
RWD	kg	1.56E-3	6.07E-5	3.35E-5	1.65E-3	4.52E-5	2.48E-4	2.39E-6	-7.07E-4	1.24E-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

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