Environmental Profile

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

Ecochain v3.5.80

Product:	3009693 - PVC PressurePp DN150 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	7.01	0.15	0.3	7.47	0.11	2.47	0.02	-3.52	6.54
ADPE	kg Sb-eq	4.01E-2	3.23E-5	5.52E-5	4.02E-2	2.35E-5	2.00E-4	2.52E-7	-7.37E-4	3.97E-2
ADPF	kg Sb-eq	7.71E-1	9.31E-3	1.48E-2	7.95E-1	6.60E-3	7.03E-2	3.53E-4	-4.16E-1	4.56E-1
GWP	kg CO2-eq	6.28E+1	1.27E+0	2.63E+0	6.67E+1	9.00E-1	2.39E+1	2.30E-1	-3.51E+1	5.67E+1
ODP	kg CFC-11-eq	3.66E-5	2.25E-7	2.47E-7	3.71E-5	1.67E-7	2.89E-6	8.44E-9	-1.83E-5	2.19E-5
POCP	kg ethene-eq	3.74E-2	7.64E-4	1.16E-3	3.94E-2	5.40E-4	5.48E-3	6.05E-5	-1.78E-2	2.76E-2
AP	kg SO2-eq	2.48E-1	5.57E-3	1.03E-2	2.64E-1	3.87E-3	4.05E-2	1.89E-4	-1.14E-1	1.94E-1
EP	kg PO4 3−-eq	2.99E-2	1.09E-3	1.63E-3	3.26E-2	7.73E-4	6.10E-3	7.33E-5	-1.37E-2	2.58E-2
HTP	kg 1,4-DB-eq	2.46E+1	5.33E-1	9.92E-1	2.61E+1	3.85E-1	1.08E+1	1.95E-2	-1.11E+1	2.62E+1
FAETP	kg 1,4-DB-eq	6.03E-1	1.56E-2	4.04E-2	6.59E-1	1.13E-2	1.61E-1	5.91E-3	-2.43E-1	5.95E-1
MAETP	kg 1,4-DB-eq	1.66E+3	5.60E+1	1.65E+2	1.88E+3	4.03E+1	5.34E+2	7.23E+0	-7.14E+2	1.74E+3
TETP	kg 1,4-DB-eq	1.75E-1	1.88E-3	6.16E-2	2.38E-1	1.36E-3	3.86E-2	6.51E-5	-8.07E-2	1.97E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.27E+1	1.28E+0	3.10E+0	6.71E+1	9.08E-1	2.63E+1	2.68E-1	-3.61E+1	5.85E+1
GWP-f	kg CO2 eq	6.44E+1	1.28E+0	2.42E+0	6.81E+1	9.07E-1	2.41E+1	2.68E-1	-3.59E+1	5.75E+1
GWP-b	kg CO2 eq	-1.68E+0	5.89E-4	5.24E-1	-1.15E+0	5.51E-4	2.23E+0	3.42E-4	-2.52E-1	8.22E-1
GWP-luluc	kg CO2 eq	5.54E-2	4.68E-4	1.48E-1	2.04E-1	3.21E-4	1.10E-2	7.16E-6	-2.37E-2	1.91E-1
ODP	kg CFC11 eq	3.61E-5	2.82E-7	2.93E-7	3.67E-5	2.09E-7	2.97E-6	1.05E-8	-1.81E-5	2.18E-5
AP	mol H+ eq	2.99E-1	7.40E-3	1.32E-2	3.20E-1	5.17E-3	5.07E-2	2.53E-4	-1.37E-1	2.39E-1
EP-fw	kg P eq	2.97E-3	1.29E-5	3.47E-5	3.02E-3	7.46E-6	3.65E-4	3.23E-7	-1.33E-3	2.06E-3
EP-m	kg N eq	5.10E-2	2.61E-3	3.90E-3	5.75E-2	1.85E-3	1.23E-2	1.55E-4	-2.39E-2	4.79E-2
EP-T	mol N eq	5.55E-1	2.88E-2	4.18E-2	6.25E-1	2.04E-2	1.36E-1	1.01E-3	-2.55E-1	5.27E-1
POCP	kg NMVOC eq	1.87E-1	8.21E-3	1.18E-2	2.07E-1	5.82E-3	4.06E-2	3.45E-4	-8.79E-2	1.65E-1
ADP-mm	kg Sb eq	4.01E-2	3.23E-5	5.52E-5	4.02E-2	2.35E-5	2.00E-4	2.52E-7	-7.37E-4	3.97E-2
ADP-f	MJ	1.64E+3	1.93E+1	2.81E+1	1.69E+3	1.39E+1	1.39E+2	7.62E-1	-8.73E+2	9.71E+2
WDP	m3 depriv.	1.09E+2	6.89E-2	1.90E+1	1.28E+2	4.27E-2	5.48E+0	4.60E-3	-5.20E+1	8.16E+1
PM	disease inc.	2.02E-6	1.15E-7	2.05E-7	2.34E-6	8.19E-8	6.31E-7	5.23E-9	-8.81E-7	2.18E-6
IR	kBq U-235 eq	3.61E+0	8.07E-2	5.07E-2	3.75E+0	6.08E-2	4.87E-1	3.50E-3	-1.68E+0	2.62E+0
ETP-fw	CTUe	1.42E+3	1.72E+1	4.68E+1	1.48E+3	1.13E+1	1.06E+3	1.17E+1	-5.11E+2	2.06E+3
HTP-c	CTUh	5.00E-8	5.57E-10	1.60E-9	5.22E-8	4.02E-10	1.53E-8	2.04E-11	-1.92E-8	4.88E-8
HTP-nc	CTUh	1.63E-6	1.88E-8	4.89E-8	1.70E-6	1.35E-8	3.70E-7	2.25E-9	-6.63E-7	1.42E-6
SQP	Pt	4.16E+2	1.67E+1	2.10E+0	4.34E+2	1.19E+1	8.62E+1	1.94E+0	-1.36E+2	3.98E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.12E+2	2.41E-1	8.47E+1	1.97E+2	2.00E-1	1.00E+1	2.78E-2	-4.65E+1	1.61E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.12E+2	2.41E-1	8.47E+1	1.97E+2	2.00E-1	1.00E+1	2.78E-2	-4.65E+1	1.61E+2
PENRE	MJ	1.76E+3	2.04E+1	3.04E+1	1.81E+3	1.48E+1	1.48E+2	8.09E-1	-9.40E+2	1.04E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.76E+3	2.04E+1	3.04E+1	1.81E+3	1.48E+1	1.48E+2	8.09E-1	-9.40E+2	1.04E+3
PET	MJ	1.87E+3	2.07E+1	1.15E+2	2.01E+3	1.50E+1	1.58E+2	8.36E-1	-9.87E+2	1.20E+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	1.18E+0	2.35E-3	4.47E-1	1.63E+0	1.58E-3	1.50E-1	9.33E-4	-5.43E-1	1.24E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.18E-3	4.88E-5	3.93E-5	6.27E-3	3.56E-5	2.24E-4	9.22E-7	-7.25E-4	5.80E-3
NHWD	kg	6.39E+0	1.22E+0	5.67E-2	7.67E+0	8.63E-1	5.11E+0	3.45E+0	-2.78E+0	1.43E+1
RWD	kg	3.14E-3	1.26E-4	7.06E-5	3.34E-3	9.47E-5	5.21E-4	4.97E-6	-1.48E-3	2.48E-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