Environmental Profile

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

Ecochain v3.5.80

Product:	3009697 - PVC PressurePp DN250 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	22.63	0.41	0.93	23.97	0.33	7.77	0.05	-11.2	20.91
ADPE	kg Sb-eq	1.67E-1	8.64E-5	1.69E-4	1.67E-1	7.21E-5	6.22E-4	7.93E-7	-2.37E-3	1.66E-1
ADPF	kg Sb-eq	2.46E+0	2.49E-2	4.53E-2	2.53E+0	2.03E-2	2.18E-1	1.10E-3	-1.33E+0	1.45E+0
GWP	kg CO2-eq	2.01E+2	3.38E+0	8.06E+0	2.13E+2	2.77E+0	7.67E+1	7.37E-1	-1.12E+2	1.81E+2
ODP	kg CFC-11-eq	1.16E-4	6.00E-7	7.57E-7	1.18E-4	5.13E-7	9.08E-6	2.63E-8	-5.83E-5	6.89E-5
POCP	kg ethene-eq	1.20E-1	2.04E-3	3.55E-3	1.26E-1	1.66E-3	1.69E-2	1.92E-4	-5.66E-2	8.82E-2
AP	kg SO2-eq	8.03E-1	1.49E-2	3.16E-2	8.50E-1	1.19E-2	1.26E-1	5.92E-4	-3.62E-1	6.26E-1
EP	kg PO4 3−-eq	9.70E-2	2.92E-3	4.99E-3	1.05E-1	2.38E-3	1.90E-2	2.34E-4	-4.35E-2	8.30E-2
HTP	kg 1,4-DB-eq	7.97E+1	1.42E+0	3.04E+0	8.42E+1	1.18E+0	3.33E+1	6.17E-2	-3.52E+1	8.35E+1
FAETP	kg 1,4-DB-eq	2.01E+0	4.16E-2	1.24E-1	2.18E+0	3.47E-2	5.01E-1	1.88E-2	-7.72E-1	1.96E+0
MAETP	kg 1,4-DB-eq	5.45E+3	1.50E+2	5.05E+2	6.10E+3	1.24E+2	1.67E+3	2.30E+1	-2.27E+3	5.65E+3
TETP	kg 1,4-DB-eq	5.61E-1	5.03E-3	1.89E-1	7.54E-1	4.19E-3	1.20E-1	2.07E-4	-2.57E-1	6.22E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.02E+2	3.41E+0	9.49E+0	2.15E+2	2.79E+0	8.32E+1	8.59E-1	-1.15E+2	1.87E+2
GWP-f	kg CO2 eq	2.06E+2	3.41E+0	7.43E+0	2.17E+2	2.79E+0	7.73E+1	8.58E-1	-1.15E+2	1.84E+2
GWP-b	kg CO2 eq	-4.16E+0	1.57E-3	1.61E+0	-2.56E+0	1.69E-3	5.93E+0	1.09E-3	-7.99E-1	2.58E+0
GWP-luluc	kg CO2 eq	1.81E-1	1.25E-3	4.53E-1	6.35E-1	9.87E-4	3.42E-2	2.28E-5	-7.51E-2	5.96E-1
ODP	kg CFC11 eq	1.15E-4	7.53E-7	8.98E-7	1.16E-4	6.42E-7	9.34E-6	3.27E-8	-5.77E-5	6.86E-5
AP	mol H+ eq	9.70E-1	1.98E-2	4.05E-2	1.03E+0	1.59E-2	1.58E-1	7.93E-4	-4.36E-1	7.69E-1
EP-fw	kg P eq	9.61E-3	3.44E-5	1.06E-4	9.75E-3	2.29E-5	1.14E-3	1.03E-6	-4.24E-3	6.68E-3
EP-m	kg N eq	1.65E-1	6.97E-3	1.19E-2	1.84E-1	5.68E-3	3.82E-2	4.94E-4	-7.58E-2	1.53E-1
EP-T	mol N eq	1.81E+0	7.68E-2	1.28E-1	2.01E+0	6.26E-2	4.21E-1	3.16E-3	-8.10E-1	1.69E+0
POCP	kg NMVOC eq	6.05E-1	2.19E-2	3.62E-2	6.63E-1	1.79E-2	1.26E-1	1.08E-3	-2.79E-1	5.29E-1
ADP-mm	kg Sb eq	1.67E-1	8.64E-5	1.69E-4	1.67E-1	7.21E-5	6.22E-4	7.93E-7	-2.37E-3	1.66E-1
ADP-f	MJ	5.25E+3	5.14E+1	8.60E+1	5.39E+3	4.28E+1	4.31E+2	2.38E+0	-2.78E+3	3.08E+3
WDP	m3 depriv.	3.47E+2	1.84E-1	5.82E+1	4.05E+2	1.31E-1	1.72E+1	1.52E-2	-1.65E+2	2.57E+2
PM	disease inc.	6.50E-6	3.06E-7	6.29E-7	7.44E-6	2.52E-7	1.95E-6	1.64E-8	-2.79E-6	6.87E-6
IR	kBq U-235 eq	1.17E+1	2.15E-1	1.55E-1	1.21E+1	1.87E-1	1.51E+0	1.09E-2	-5.34E+0	8.47E+0
ETP-fw	CTUe	4.89E+3	4.59E+1	1.43E+2	5.08E+3	3.47E+1	3.35E+3	3.71E+1	-1.62E+3	6.88E+3
HTP-c	CTUh	1.67E-7	1.49E-9	4.89E-9	1.74E-7	1.24E-9	4.78E-8	6.49E-11	-6.09E-8	1.62E-7
HTP-nc	CTUh	5.44E-6	5.02E-8	1.50E-7	5.64E-6	4.14E-8	1.16E-6	7.12E-9	-2.11E-6	4.74E-6
SQP	Pt	1.24E+3	4.46E+1	6.43E+0	1.29E+3	3.66E+1	2.65E+2	6.09E+0	-4.11E+2	1.18E+3

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.45E+2	6.44E-1	2.59E+2	6.05E+2	6.14E-1	3.13E+1	8.80E-2	-1.43E+2	4.93E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.45E+2	6.44E-1	2.59E+2	6.05E+2	6.14E-1	3.13E+1	8.80E-2	-1.43E+2	4.93E+2
PENRE	MJ	5.63E+3	5.46E+1	9.32E+1	5.78E+3	4.54E+1	4.59E+2	2.53E+0	-3.00E+3	3.29E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.63E+3	5.46E+1	9.32E+1	5.78E+3	4.54E+1	4.59E+2	2.53E+0	-3.00E+3	3.29E+3
PET	MJ	5.97E+3	5.53E+1	3.53E+2	6.38E+3	4.60E+1	4.90E+2	2.62E+0	-3.14E+3	3.78E+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	3.81E+0	6.26E-3	1.37E+0	5.19E+0	4.84E-3	4.71E-1	2.92E-3	-1.73E+0	3.94E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.46E-2	1.30E-4	1.20E-4	2.48E-2	1.09E-4	6.96E-4	2.90E-6	-2.32E-3	2.33E-2
NHWD	kg	2.06E+1	3.26E+0	1.74E-1	2.40E+1	2.65E+0	1.58E+1	1.06E+1	-8.85E+0	4.42E+1
RWD	kg	1.02E-2	3.38E-4	2.16E-4	1.08E-2	2.91E-4	1.61E-3	1.55E-5	-4.71E-3	7.99E-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

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