Environmental Profile

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

Ecochain v3.5.80

Product:	3009694 - PVC PressurePp DN200 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	14.61	0.26	0.6	15.47	0.22	5.02	0.03	-7.22	13.51
ADPE	kg Sb-eq	1.08E-1	5.57E-5	1.09E-4	1.08E-1	4.65E-5	4.01E-4	5.11E-7	-1.53E-3	1.07E-1
ADPF	kg Sb-eq	1.59E+0	1.60E-2	2.92E-2	1.64E+0	1.31E-2	1.41E-1	7.12E-4	-8.56E-1	9.34E-1
GWP	kg CO2-eq	1.30E+2	2.18E+0	5.19E+0	1.37E+2	1.78E+0	4.96E+1	4.75E-1	-7.22E+1	1.17E+2
ODP	kg CFC-11-eq	7.50E-5	3.87E-7	4.88E-7	7.58E-5	3.31E-7	5.85E-6	1.70E-8	-3.76E-5	4.45E-5
POCP	kg ethene-eq	7.78E-2	1.32E-3	2.29E-3	8.15E-2	1.07E-3	1.09E-2	1.24E-4	-3.65E-2	5.70E-2
AP	kg SO2-eq	5.19E-1	9.59E-3	2.04E-2	5.49E-1	7.67E-3	8.13E-2	3.82E-4	-2.33E-1	4.05E-1
EP	kg PO4 3−-eq	6.26E-2	1.88E-3	3.22E-3	6.77E-2	1.53E-3	1.23E-2	1.52E-4	-2.81E-2	5.36E-2
HTP	kg 1,4-DB-eq	5.14E+1	9.18E-1	1.96E+0	5.43E+1	7.63E-1	2.15E+1	3.98E-2	-2.27E+1	5.39E+1
FAETP	kg 1,4-DB-eq	1.30E+0	2.68E-2	7.98E-2	1.41E+0	2.23E-2	3.23E-1	1.21E-2	-4.97E-1	1.27E+0
MAETP	kg 1,4-DB-eq	3.52E+3	9.64E+1	3.26E+2	3.94E+3	7.98E+1	1.08E+3	1.48E+1	-1.47E+3	3.65E+3
TETP	kg 1,4-DB-eq	3.62E-1	3.25E-3	1.22E-1	4.87E-1	2.70E-3	7.71E-2	1.33E-4	-1.65E-1	4.01E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.31E+2	2.20E+0	6.12E+0	1.39E+2	1.80E+0	5.38E+1	5.54E-1	-7.44E+1	1.21E+2
GWP-f	kg CO2 eq	1.33E+2	2.20E+0	4.79E+0	1.40E+2	1.80E+0	5.00E+1	5.54E-1	-7.39E+1	1.19E+2
GWP-b	kg CO2 eq	-2.66E+0	1.02E-3	1.04E+0	-1.62E+0	1.09E-3	3.79E+0	7.01E-4	-5.15E-1	1.66E+0
GWP-luluc	kg CO2 eq	1.17E-1	8.06E-4	2.92E-1	4.10E-1	6.36E-4	2.20E-2	1.47E-5	-4.84E-2	3.84E-1
ODP	kg CFC11 eq	7.39E-5	4.85E-7	5.79E-7	7.50E-5	4.14E-7	6.02E-6	2.11E-8	-3.72E-5	4.43E-5
AP	mol H+ eq	6.26E-1	1.28E-2	2.61E-2	6.65E-1	1.02E-2	1.02E-1	5.11E-4	-2.81E-1	4.97E-1
EP-fw	kg P eq	6.20E-3	2.22E-5	6.85E-5	6.29E-3	1.48E-5	7.36E-4	6.63E-7	-2.73E-3	4.31E-3
EP-m	kg N eq	1.07E-1	4.49E-3	7.70E-3	1.19E-1	3.66E-3	2.46E-2	3.19E-4	-4.89E-2	9.88E-2
EP-T	mol N eq	1.17E+0	4.96E-2	8.26E-2	1.30E+0	4.04E-2	2.72E-1	2.04E-3	-5.22E-1	1.09E+0
POCP	kg NMVOC eq	3.91E-1	1.41E-2	2.33E-2	4.28E-1	1.15E-2	8.13E-2	7.00E-4	-1.80E-1	3.42E-1
ADP-mm	kg Sb eq	1.08E-1	5.57E-5	1.09E-4	1.08E-1	4.65E-5	4.01E-4	5.11E-7	-1.53E-3	1.07E-1
ADP-f	MJ	3.39E+3	3.32E+1	5.54E+1	3.48E+3	2.76E+1	2.78E+2	1.54E+0	-1.79E+3	1.99E+3
WDP	m3 depriv.	2.24E+2	1.19E-1	3.75E+1	2.61E+2	8.47E-2	1.11E+1	9.78E-3	-1.07E+2	1.66E+2
PM	disease inc.	4.21E-6	1.97E-7	4.05E-7	4.81E-6	1.62E-7	1.26E-6	1.06E-8	-1.80E-6	4.44E-6
IR	kBq U-235 eq	7.57E+0	1.39E-1	1.00E-1	7.81E+0	1.21E-1	9.76E-1	7.06E-3	-3.44E+0	5.47E+0
ETP-fw	CTUe	3.15E+3	2.96E+1	9.25E+1	3.28E+3	2.24E+1	2.16E+3	2.39E+1	-1.04E+3	4.44E+3
HTP-c	CTUh	1.08E-7	9.59E-10	3.15E-9	1.12E-7	7.97E-10	3.08E-8	4.19E-11	-3.93E-8	1.05E-7
HTP-nc	CTUh	3.51E-6	3.24E-8	9.65E-8	3.64E-6	2.67E-8	7.48E-7	4.59E-9	-1.36E-6	3.06E-6
SQP	Pt	7.95E+2	2.88E+1	4.15E+0	8.28E+2	2.36E+1	1.71E+2	3.93E+0	-2.64E+2	7.62E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.22E+2	4.15E-1	1.67E+2	3.90E+2	3.96E-1	2.02E+1	5.68E-2	-9.23E+1	3.18E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.22E+2	4.15E-1	1.67E+2	3.90E+2	3.96E-1	2.02E+1	5.68E-2	-9.23E+1	3.18E+2
PENRE	MJ	3.63E+3	3.52E+1	6.01E+1	3.73E+3	2.93E+1	2.96E+2	1.63E+0	-1.93E+3	2.12E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.63E+3	3.52E+1	6.01E+1	3.73E+3	2.93E+1	2.96E+2	1.63E+0	-1.93E+3	2.12E+3
PET	MJ	3.86E+3	3.56E+1	2.27E+2	4.12E+3	2.97E+1	3.16E+2	1.69E+0	-2.03E+3	2.44E+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	2.46E+0	4.04E-3	8.83E-1	3.35E+0	3.12E-3	3.04E-1	1.88E-3	-1.11E+0	2.54E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.59E-2	8.41E-5	7.76E-5	1.60E-2	7.06E-5	4.49E-4	1.87E-6	-1.49E-3	1.50E-2
NHWD	kg	1.33E+1	2.10E+0	1.12E-1	1.55E+1	1.71E+0	1.02E+1	6.86E+0	-5.70E+0	2.85E+1
RWD	kg	6.62E-3	2.18E-4	1.39E-4	6.98E-3	1.88E-4	1.04E-3	1.00E-5	-3.04E-3	5.17E-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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