Environmental Profile

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

Ecochain v3.5.80

Product:	3082292 - PVC Pipe DGR KOMO 160x4.9 PN8 L=10 CH
Unit:	1 Piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3 7772 SG Hardenberg Netherlands

Within our range of PVC pressure pipes you will find the perfect solution for every component in your drinking water 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	7.38	0.16	0.48	8.03	0.11	2.59	0.02	-3.71	7.04
ADPE	kg Sb-eq	4.24E-2	3.41E-5	1.19E-4	4.25E-2	2.48E-5	2.11E-4	2.67E-7	-7.80E-4	4.20E-2
ADPF	kg Sb-eq	8.09E-1	9.81E-3	2.05E-2	8.40E-1	6.99E-3	7.42E-2	3.73E-4	-4.39E-1	4.83E-1
GWP	kg CO2-eq	6.60E+1	1.33E+0	3.88E+0	7.12E+1	9.52E-1	2.50E+1	2.43E-1	-3.69E+1	6.05E+1
ODP	kg CFC-11-eq	3.86E-5	2.37E-7	3.07E-7	3.92E-5	1.76E-7	3.05E-6	8.93E-9	-1.93E-5	2.31E-5
POCP	kg ethene-eq	3.92E-2	8.05E-4	1.69E-3	4.17E-2	5.71E-4	5.79E-3	6.41E-5	-1.88E-2	2.93E-2
AP	kg SO2-eq	2.61E-1	5.87E-3	1.67E-2	2.84E-1	4.10E-3	4.27E-2	2.00E-4	-1.20E-1	2.10E-1
EP	kg PO4 3−-eq	3.15E-2	1.15E-3	2.15E-3	3.48E-2	8.18E-4	6.44E-3	7.75E-5	-1.45E-2	2.76E-2
HTP	kg 1,4-DB-eq	2.59E+1	5.62E-1	1.80E+0	2.83E+1	4.07E-1	1.14E+1	2.07E-2	-1.17E+1	2.84E+1
FAETP	kg 1,4-DB-eq	6.39E-1	1.64E-2	6.16E-2	7.17E-1	1.19E-2	1.69E-1	6.25E-3	-2.56E-1	6.48E-1
MAETP	kg 1,4-DB-eq	1.75E+3	5.90E+1	2.43E+2	2.05E+3	4.26E+1	5.62E+2	7.66E+0	-7.55E+2	1.91E+3
TETP	kg 1,4-DB-eq	1.84E-1	1.99E-3	1.34E-1	3.20E-1	1.44E-3	4.08E-2	6.89E-5	-8.54E-2	2.77E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.62E+1	1.35E+0	4.44E+0	7.20E+1	9.60E-1	2.74E+1	2.84E-1	-3.80E+1	6.25E+1
GWP-f	kg CO2 eq	6.77E+1	1.35E+0	3.42E+0	7.24E+1	9.59E-1	2.52E+1	2.84E-1	-3.78E+1	6.11E+1
GWP-b	kg CO2 eq	-1.54E+0	6.21E-4	7.05E-1	-8.39E-1	5.83E-4	2.13E+0	3.61E-4	-2.66E-1	1.03E+0
GWP-luluc	kg CO2 eq	5.81E-2	4.93E-4	3.24E-1	3.83E-1	3.40E-4	1.16E-2	7.60E-6	-2.50E-2	3.70E-1
ODP	kg CFC11 eq	3.81E-5	2.97E-7	3.61E-7	3.87E-5	2.21E-7	3.14E-6	1.11E-8	-1.91E-5	2.30E-5
AP	mol H+ eq	3.15E-1	7.80E-3	2.08E-2	3.44E-1	5.47E-3	5.35E-2	2.67E-4	-1.45E-1	2.58E-1
EP-fw	kg P eq	3.12E-3	1.36E-5	5.98E-5	3.20E-3	7.89E-6	3.86E-4	3.43E-7	-1.41E-3	2.18E-3
EP-m	kg N eq	5.36E-2	2.75E-3	4.92E-3	6.12E-2	1.96E-3	1.30E-2	1.64E-4	-2.52E-2	5.12E-2
EP-T	mol N eq	5.83E-1	3.03E-2	5.42E-2	6.68E-1	2.15E-2	1.43E-1	1.07E-3	-2.69E-1	5.64E-1
POCP	kg NMVOC eq	1.96E-1	8.66E-3	1.54E-2	2.20E-1	6.16E-3	4.29E-2	3.65E-4	-9.28E-2	1.76E-1
ADP-mm	kg Sb eq	4.24E-2	3.41E-5	1.19E-4	4.25E-2	2.48E-5	2.11E-4	2.67E-7	-7.80E-4	4.20E-2
ADP-f	MJ	1.72E+3	2.03E+1	3.82E+1	1.78E+3	1.47E+1	1.47E+2	8.06E-1	-9.20E+2	1.03E+3
WDP	m3 depriv.	1.15E+2	7.26E-2	2.95E+1	1.45E+2	4.52E-2	5.79E+0	4.96E-3	-5.50E+1	9.54E+1
PM	disease inc.	2.12E-6	1.21E-7	2.57E-7	2.50E-6	8.66E-8	6.66E-7	5.54E-9	-9.30E-7	2.32E-6
IR	kBq U-235 eq	3.80E+0	8.50E-2	6.07E-2	3.95E+0	6.44E-2	5.14E-1	3.70E-3	-1.78E+0	2.76E+0
ETP-fw	CTUe	1.50E+3	1.81E+1	8.87E+1	1.60E+3	1.20E+1	1.12E+3	1.24E+1	-5.39E+2	2.21E+3
HTP-c	CTUh	5.28E-8	5.87E-10	3.07E-9	5.65E-8	4.26E-10	1.62E-8	2.16E-11	-2.03E-8	5.28E-8
HTP-nc	CTUh	1.72E-6	1.98E-8	9.59E-8	1.84E-6	1.43E-8	3.91E-7	2.38E-9	-7.01E-7	1.54E-6
SQP	Pt	4.18E+2	1.76E+1	2.85E+0	4.39E+2	1.26E+1	9.11E+1	2.05E+0	-1.40E+2	4.05E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.15E+2	2.54E-1	1.86E+2	3.01E+2	2.11E-1	1.06E+1	2.94E-2	-4.83E+1	2.64E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.15E+2	2.54E-1	1.86E+2	3.01E+2	2.11E-1	1.06E+1	2.94E-2	-4.83E+1	2.64E+2
PENRE	MJ	1.85E+3	2.15E+1	4.13E+1	1.91E+3	1.56E+1	1.56E+2	8.56E-1	-9.91E+2	1.09E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.85E+3	2.15E+1	4.13E+1	1.91E+3	1.56E+1	1.56E+2	8.56E-1	-9.91E+2	1.09E+3
PET	MJ	1.97E+3	2.18E+1	2.27E+2	2.21E+3	1.58E+1	1.67E+2	8.85E-1	-1.04E+3	1.36E+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	1.25E+0	2.47E-3	6.99E-1	1.95E+0	1.67E-3	1.58E-1	9.87E-4	-5.74E-1	1.53E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.52E-3	5.14E-5	4.05E-5	6.61E-3	3.77E-5	2.36E-4	9.77E-7	-7.63E-4	6.12E-3
NHWD	kg	6.74E+0	1.29E+0	6.26E-2	8.09E+0	9.13E-1	5.38E+0	3.65E+0	-2.94E+0	1.51E+1
RWD	kg	3.30E-3	1.33E-4	7.51E-5	3.51E-3	1.00E-4	5.50E-4	5.26E-6	-1.56E-3	2.60E-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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