

Environmental Profile

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

Ecochain v3.5.80



Product: 3006943 - PVC-A Pipe YL 200x4.9 SDR41 L=10 CH
Unit: 1 piece
Manufacturer: Wavin - NL - Hardenberg - Verified
Address: J.C. Kellerlaan 3
7772 SG Hardenberg
Netherlands

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



PVC-A is very suitable for use in underground low-pressure gas distribution networks. The Gastec Qa quality mark guarantees the high quality of this system.

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					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use							C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal				
Construction process stage					Benefits and loads beyond the system boundaries											
A4 Transport gate to site A5 Assembly / Construction installation process					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]

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Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	11.19	0.19	0.39	11.77	0.14	3.35	0.02	-4.93	10.34
ADPE	kg Sb-eq	6.69E-2	4.06E-5	7.10E-5	6.70E-2	3.04E-5	2.67E-4	3.38E-7	-1.02E-3	6.63E-2
ADPF	kg Sb-eq	1.18E+0	1.17E-2	1.90E-2	1.21E+0	8.56E-3	9.34E-2	4.69E-4	-5.81E-1	7.30E-1
GWP	kg CO2-eq	1.06E+2	1.59E+0	3.39E+0	1.11E+2	1.17E+0	3.32E+1	3.18E-1	-4.90E+1	9.65E+1
ODP	kg CFC-11-eq	4.63E-5	2.82E-7	3.18E-7	4.69E-5	2.16E-7	3.91E-6	1.12E-8	-2.53E-5	2.57E-5
POCP	kg ethene-eq	7.34E-2	9.59E-4	1.49E-3	7.59E-2	6.99E-4	7.33E-3	8.26E-5	-2.52E-2	5.88E-2
AP	kg SO2-eq	4.52E-1	6.98E-3	1.33E-2	4.72E-1	5.02E-3	5.45E-2	2.52E-4	-1.60E-1	3.72E-1
EP	kg PO4 3--eq	5.26E-2	1.37E-3	2.10E-3	5.61E-2	1.00E-3	8.27E-3	9.90E-5	-1.98E-2	4.56E-2
HTP	kg 1,4-DB-eq	3.32E+1	6.69E-1	1.28E+0	3.51E+1	4.98E-1	1.43E+1	2.64E-2	-1.56E+1	3.43E+1
FAETP	kg 1,4-DB-eq	8.90E-1	1.95E-2	5.20E-2	9.62E-1	1.46E-2	2.20E-1	8.21E-3	-3.40E-1	8.64E-1
MAETP	kg 1,4-DB-eq	2.36E+3	7.02E+1	2.12E+2	2.64E+3	5.22E+1	7.27E+2	1.00E+1	-9.95E+2	2.44E+3
TETP	kg 1,4-DB-eq	2.33E-1	2.36E-3	7.94E-2	3.14E-1	1.77E-3	5.10E-2	8.87E-5	-1.13E-1	2.54E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	9.73E+1	1.60E+0	3.99E+0	1.03E+2	1.18E+0	4.60E+1	3.71E-1	-5.06E+1	9.99E+1
GWP-f	kg CO2 eq	1.09E+2	1.60E+0	3.12E+0	1.14E+2	1.17E+0	3.34E+1	3.71E-1	-5.02E+1	9.85E+1
GWP-b	kg CO2 eq	-1.18E+1	7.40E-4	6.75E-1	-1.11E+1	7.13E-4	1.25E+1	4.67E-4	-3.48E-1	1.09E+0
GWP-luluc	kg CO2 eq	7.97E-2	5.87E-4	1.90E-1	2.71E-1	4.16E-4	1.46E-2	9.78E-6	-3.40E-2	2.52E-1
ODP	kg CFC11 eq	4.57E-5	3.54E-7	3.77E-7	4.65E-5	2.71E-7	4.02E-6	1.39E-8	-2.51E-5	2.57E-5
AP	mol H+ eq	5.42E-1	9.29E-3	1.70E-2	5.68E-1	6.69E-3	6.85E-2	3.37E-4	-1.94E-1	4.49E-1
EP-fw	kg P eq	4.69E-3	1.62E-5	4.47E-5	4.75E-3	9.67E-6	4.89E-4	4.42E-7	-1.85E-3	3.40E-3
EP-m	kg N eq	9.46E-2	3.27E-3	5.02E-3	1.03E-1	2.39E-3	1.67E-2	2.08E-4	-3.43E-2	8.79E-2
EP-T	mol N eq	9.56E-1	3.61E-2	5.38E-2	1.05E+0	2.64E-2	1.85E-1	1.35E-3	-3.74E-1	8.84E-1
POCP	kg NMVOC eq	3.43E-1	1.03E-2	1.52E-2	3.69E-1	7.54E-3	5.50E-2	4.63E-4	-1.26E-1	3.07E-1
ADP-mm	kg Sb eq	6.69E-2	4.06E-5	7.10E-5	6.70E-2	3.04E-5	2.67E-4	3.38E-7	-1.02E-3	6.63E-2
ADP-f	MJ	2.49E+3	2.42E+1	3.61E+1	2.55E+3	1.80E+1	1.85E+2	1.01E+0	-1.22E+3	1.54E+3
WDP	m3 depriv.	1.44E+2	8.64E-2	2.44E+1	1.68E+2	5.53E-2	7.37E+0	6.71E-3	-7.18E+1	1.04E+2
PM	disease inc.	4.22E-6	1.44E-7	2.64E-7	4.63E-6	1.06E-7	8.40E-7	6.97E-9	-1.29E-6	4.29E-6
IR	kBq U-235 eq	4.78E+0	1.01E-1	6.52E-2	4.94E+0	7.88E-2	6.50E-1	4.65E-3	-2.33E+0	3.35E+0
ETP-fw	CTUe	2.08E+3	2.15E+1	6.03E+1	2.16E+3	1.46E+1	1.44E+3	1.60E+1	-7.42E+2	2.89E+3
HTP-c	CTUh	7.27E-8	6.99E-10	2.06E-9	7.55E-8	5.21E-10	2.13E-8	2.80E-11	-2.71E-8	7.02E-8
HTP-nc	CTUh	2.29E-6	2.36E-8	6.29E-8	2.38E-6	1.75E-8	5.01E-7	3.07E-9	-9.32E-7	1.97E-6
SQP	Pt	1.43E+3	2.10E+1	2.70E+0	1.45E+3	1.54E+1	1.13E+2	2.59E+0	-3.72E+2	1.21E+3

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.80E+2	3.02E-1	1.09E+2	3.89E+2	2.59E-1	1.34E+1	3.76E-2	-1.01E+2	3.02E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.80E+2	3.02E-1	1.09E+2	3.89E+2	2.59E-1	1.34E+1	3.76E-2	-1.01E+2	3.02E+2
PENRE	MJ	2.68E+3	2.57E+1	3.92E+1	2.74E+3	1.91E+1	1.96E+2	1.07E+0	-1.31E+3	1.65E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.68E+3	2.57E+1	3.92E+1	2.74E+3	1.91E+1	1.96E+2	1.07E+0	-1.31E+3	1.65E+3
PET	MJ	2.96E+3	2.60E+1	1.48E+2	3.13E+3	1.94E+1	2.10E+2	1.11E+0	-1.41E+3	1.95E+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	1.66E+0	2.94E-3	5.76E-1	2.24E+0	2.04E-3	2.03E-1	1.24E-3	-7.51E-1	1.69E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.93E-3	6.12E-5	5.06E-5	1.00E-2	4.61E-5	2.99E-4	1.23E-6	-1.02E-3	9.37E-3
NHWD	kg	9.16E+0	1.53E+0	7.30E-2	1.08E+1	1.12E+0	6.90E+0	4.47E+0	-3.92E+0	1.93E+1
RWD	kg	4.16E-3	1.59E-4	9.09E-5	4.41E-3	1.23E-4	6.92E-4	6.59E-6	-2.06E-3	3.18E-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