

Environmental Profile

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

Ecochain v3.5.80



Product: 3006940 - PVC-A Pipe YL 160x4.0 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	9.37	0.14	0.26	9.76	0.09	2.99	0.01	-3.79	9.07
ADPE	kg Sb-eq	4.40E-2	2.94E-5	4.68E-5	4.41E-2	1.99E-5	1.78E-4	2.22E-7	-6.75E-4	4.36E-2
ADPF	kg Sb-eq	1.04E+0	8.47E-3	1.26E-2	1.06E+0	5.61E-3	6.26E-2	3.07E-4	-4.67E-1	6.64E-1
GWP	kg CO2-eq	9.04E+1	1.15E+0	2.23E+0	9.38E+1	7.64E-1	3.61E+1	2.09E-1	-4.13E+1	8.96E+1
ODP	kg CFC-11-eq	3.13E-5	2.04E-7	2.10E-7	3.17E-5	1.42E-7	2.60E-6	7.32E-9	-1.74E-5	1.71E-5
POCP	kg ethene-eq	6.80E-2	6.95E-4	9.83E-4	6.97E-2	4.58E-4	5.11E-3	5.41E-5	-1.82E-2	5.71E-2
AP	kg SO2-eq	3.75E-1	5.06E-3	8.76E-3	3.89E-1	3.29E-3	3.74E-2	1.65E-4	-1.11E-1	3.19E-1
EP	kg PO4 3--eq	4.33E-2	9.95E-4	1.38E-3	4.57E-2	6.57E-4	5.82E-3	6.49E-5	-1.39E-2	3.84E-2
HTP	kg 1,4-DB-eq	2.68E+1	4.85E-1	8.43E-1	2.81E+1	3.27E-1	9.88E+0	1.73E-2	-1.07E+1	2.77E+1
FAETP	kg 1,4-DB-eq	7.11E-1	1.42E-2	3.43E-2	7.59E-1	9.57E-3	2.27E-1	5.38E-3	-2.29E-1	7.72E-1
MAETP	kg 1,4-DB-eq	2.02E+3	5.09E+1	1.40E+2	2.21E+3	3.42E+1	6.33E+2	6.57E+0	-6.76E+2	2.21E+3
TETP	kg 1,4-DB-eq	1.77E-1	1.71E-3	5.23E-2	2.31E-1	1.16E-3	3.40E-2	5.81E-5	-7.59E-2	1.91E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	8.53E+1	1.16E+0	2.63E+0	8.91E+1	7.71E-1	4.43E+1	2.43E-1	-4.24E+1	9.20E+1
GWP-f	kg CO2 eq	9.30E+1	1.16E+0	2.06E+0	9.62E+1	7.70E-1	3.63E+1	2.43E-1	-4.21E+1	9.14E+1
GWP-b	kg CO2 eq	-7.79E+0	5.36E-4	4.45E-1	-7.34E+0	4.68E-4	7.98E+0	3.06E-4	-2.33E-1	4.05E-1
GWP-luluc	kg CO2 eq	7.02E-2	4.26E-4	1.26E-1	1.96E-1	2.73E-4	9.70E-3	6.41E-6	-2.27E-2	1.83E-1
ODP	kg CFC11 eq	3.10E-5	2.56E-7	2.49E-7	3.15E-5	1.77E-7	2.67E-6	9.09E-9	-1.74E-5	1.70E-5
AP	mol H+ eq	4.51E-1	6.74E-3	1.12E-2	4.69E-1	4.39E-3	4.72E-2	2.21E-4	-1.35E-1	3.85E-1
EP-fw	kg P eq	3.82E-3	1.17E-5	2.94E-5	3.86E-3	6.34E-6	3.25E-4	2.90E-7	-1.24E-3	2.95E-3
EP-m	kg N eq	7.90E-2	2.37E-3	3.31E-3	8.47E-2	1.57E-3	1.19E-2	1.37E-4	-2.48E-2	7.36E-2
EP-T	mol N eq	8.16E-1	2.62E-2	3.55E-2	8.78E-1	1.73E-2	1.32E-1	8.82E-4	-2.70E-1	7.58E-1
POCP	kg NMVOC eq	3.05E-1	7.47E-3	1.00E-2	3.23E-1	4.94E-3	3.91E-2	3.03E-4	-9.13E-2	2.76E-1
ADP-mm	kg Sb eq	4.40E-2	2.94E-5	4.68E-5	4.41E-2	1.99E-5	1.78E-4	2.22E-7	-6.75E-4	4.36E-2
ADP-f	MJ	2.17E+3	1.75E+1	2.38E+1	2.21E+3	1.18E+1	1.24E+2	6.64E-1	-9.59E+2	1.39E+3
WDP	m3 depriv.	1.05E+2	6.27E-2	1.61E+1	1.21E+2	3.63E-2	4.88E+0	4.40E-3	-4.78E+1	7.81E+1
PM	disease inc.	3.50E-6	1.04E-7	1.74E-7	3.77E-6	6.95E-8	5.75E-7	4.57E-9	-8.76E-7	3.55E-6
IR	kBq U-235 eq	3.87E+0	7.34E-2	4.30E-2	3.99E+0	5.17E-2	4.36E-1	3.05E-3	-1.58E+0	2.90E+0
ETP-fw	CTUe	1.65E+3	1.56E+1	3.98E+1	1.71E+3	9.60E+0	9.51E+2	1.05E+1	-4.99E+2	2.18E+3
HTP-c	CTUh	5.37E-8	5.07E-10	1.36E-9	5.56E-8	3.42E-10	1.58E-8	1.84E-11	-1.84E-8	5.33E-8
HTP-nc	CTUh	1.68E-6	1.71E-8	4.15E-8	1.73E-6	1.14E-8	3.44E-7	2.01E-9	-6.21E-7	1.47E-6
SQP	Pt	9.88E+2	1.52E+1	1.78E+0	1.00E+3	1.01E+1	7.66E+1	1.70E+0	-2.43E+2	8.49E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.03E+2	2.19E-1	7.19E+1	2.75E+2	1.70E-1	8.91E+0	2.46E-2	-6.61E+1	2.18E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.03E+2	2.19E-1	7.19E+1	2.75E+2	1.70E-1	8.91E+0	2.46E-2	-6.61E+1	2.18E+2
PENRE	MJ	2.33E+3	1.86E+1	2.58E+1	2.37E+3	1.25E+1	1.32E+2	7.05E-1	-1.04E+3	1.48E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.33E+3	1.86E+1	2.58E+1	2.37E+3	1.25E+1	1.32E+2	7.05E-1	-1.04E+3	1.48E+3
PET	MJ	2.53E+3	1.88E+1	9.77E+1	2.65E+3	1.27E+1	1.41E+2	7.29E-1	-1.10E+3	1.70E+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	1.34E+0	2.13E-3	3.80E-1	1.72E+0	1.34E-3	1.36E-1	8.13E-4	-5.07E-1	1.36E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.84E-3	4.44E-5	3.34E-5	6.92E-3	3.02E-5	2.04E-4	8.09E-7	-8.47E-4	6.30E-3
NHWD	kg	7.58E+0	1.11E+0	4.82E-2	8.74E+0	7.33E-1	5.27E+0	2.93E+0	-2.64E+0	1.50E+1
RWD	kg	3.36E-3	1.15E-4	6.00E-5	3.54E-3	8.04E-5	4.68E-4	4.32E-6	-1.42E-3	2.68E-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