Environmental Profile

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

Ecochain v3.5.80

Product:	3004637 - PVC Electro Pipe CR 1" L=4
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3 7772 SG Hardenberg Netherlands

With Wavin electro PVC you not only opt for a complete range, but also for high quality.

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	0.14	0	0.01	0.15	0	0.05	0	-0.07	0.13
ADPE	kg Sb-eq	3.47E-5	7.37E-7	1.10E-6	3.65E-5	4.66E-7	3.96E-6	4.93E-9	-1.43E-5	2.66E-5
ADPF	kg Sb-eq	1.53E-2	2.12E-4	2.94E-4	1.58E-2	1.31E-4	1.39E-3	6.94E-6	-8.17E-3	9.20E-3
GWP	kg CO2-eq	1.23E+0	2.89E-2	5.22E-2	1.32E+0	1.79E-2	4.73E-1	4.48E-3	-6.88E-1	1.12E+0
ODP	kg CFC-11-eq	7.18E-7	5.12E-9	4.90E-9	7.28E-7	3.31E-9	5.68E-8	1.66E-10	-3.55E-7	4.34E-7
POCP	kg ethene-eq	7.66E-4	1.74E-5	2.30E-5	8.07E-4	1.07E-5	1.09E-4	1.18E-6	-3.54E-4	5.74E-4
AP	kg SO2-eq	4.76E-3	1.27E-4	2.05E-4	5.09E-3	7.69E-5	8.03E-4	3.71E-6	-2.24E-3	3.73E-3
EP	kg PO4 3−-eq	5.70E-4	2.49E-5	3.23E-5	6.28E-4	1.54E-5	1.21E-4	1.44E-6	-2.73E-4	4.93E-4
HTP	kg 1,4-DB-eq	4.78E-1	1.21E-2	1.97E-2	5.10E-1	7.64E-3	2.14E-1	3.85E-4	-2.17E-1	5.15E-1
FAETP	kg 1,4-DB-eq	1.04E-2	3.55E-4	8.02E-4	1.16E-2	2.24E-4	3.21E-3	1.18E-4	-4.75E-3	1.04E-2
MAETP	kg 1,4-DB-eq	3.03E+1	1.28E+0	3.27E+0	3.49E+1	7.99E-1	1.06E+1	1.44E-1	-1.39E+1	3.25E+1
TETP	kg 1,4-DB-eq	3.34E-3	4.29E-5	1.22E-3	4.61E-3	2.71E-5	7.64E-4	1.27E-6	-1.58E-3	3.82E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.17E+0	2.91E-2	6.15E-2	1.27E+0	1.80E-2	5.78E-1	5.23E-3	-7.09E-1	1.16E+0
GWP-f	kg CO2 eq	1.27E+0	2.91E-2	4.81E-2	1.34E+0	1.80E-2	4.76E-1	5.22E-3	-7.04E-1	1.14E+0
GWP-b	kg CO2 eq	-9.25E-2	1.34E-5	1.04E-2	-8.20E-2	1.09E-5	1.02E-1	6.70E-6	-4.91E-3	1.50E-2
GWP-luluc	kg CO2 eq	1.03E-3	1.07E-5	2.93E-3	3.97E-3	6.37E-6	2.16E-4	1.39E-7	-4.69E-4	3.73E-3
ODP	kg CFC11 eq	7.08E-7	6.42E-9	5.82E-9	7.20E-7	4.15E-9	5.85E-8	2.07E-10	-3.51E-7	4.32E-7
AP	mol H+ eq	5.73E-3	1.69E-4	2.63E-4	6.16E-3	1.03E-4	1.01E-3	4.97E-6	-2.71E-3	4.57E-3
EP-fw	kg P eq	5.58E-5	2.94E-7	6.88E-7	5.68E-5	1.48E-7	7.20E-6	6.28E-9	-2.60E-5	3.81E-5
EP-m	kg N eq	9.71E-4	5.95E-5	7.74E-5	1.11E-3	3.67E-5	2.45E-4	3.05E-6	-4.74E-4	9.19E-4
EP-T	mol N eq	1.05E-2	6.56E-4	8.30E-4	1.20E-2	4.04E-4	2.71E-3	1.99E-5	-5.11E-3	1.00E-2
POCP	kg NMVOC eq	3.65E-3	1.87E-4	2.34E-4	4.07E-3	1.16E-4	8.11E-4	6.78E-6	-1.75E-3	3.26E-3
ADP-mm	kg Sb eq	3.47E-5	7.37E-7	1.10E-6	3.65E-5	4.66E-7	3.96E-6	4.93E-9	-1.43E-5	2.66E-5
ADP-f	MJ	3.26E+1	4.39E-1	5.57E-1	3.36E+1	2.76E-1	2.75E+0	1.50E-2	-1.71E+1	1.96E+1
WDP	m3 depriv.	2.13E+0	1.57E-3	3.77E-1	2.51E+0	8.48E-4	1.08E-1	8.33E-5	-1.01E+0	1.61E+0
PM	disease inc.	4.23E-8	2.61E-9	4.08E-9	4.90E-8	1.63E-9	1.26E-8	1.03E-10	-1.77E-8	4.56E-8
IR	kBq U-235 eq	6.89E-2	1.84E-3	1.01E-3	7.18E-2	1.21E-3	9.64E-3	6.90E-5	-3.28E-2	4.99E-2
ETP-fw	CTUe	2.14E+1	3.91E-1	9.30E-1	2.27E+1	2.24E-1	2.08E+1	2.30E-1	-1.02E+1	3.38E+1
HTP-c	CTUh	8.65E-10	1.27E-11	3.17E-11	9.09E-10	7.99E-12	3.03E-10	3.94E-13	-3.76E-10	8.44E-10
HTP-nc	CTUh	2.75E-8	4.28E-10	9.70E-10	2.89E-8	2.68E-10	7.30E-9	4.41E-11	-1.30E-8	2.35E-8
SQP	Pt	1.33E+1	3.81E-1	4.17E-2	1.37E+1	2.36E-1	1.71E+0	3.82E-2	-3.79E+0	1.19E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.95E+0	5.49E-3	1.68E+0	4.63E+0	3.97E-3	1.98E-1	5.48E-4	-1.14E+0	3.70E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.95E+0	5.49E-3	1.68E+0	4.63E+0	3.97E-3	1.98E-1	5.48E-4	-1.14E+0	3.70E+0
PENRE	MJ	3.50E+1	4.66E-1	6.04E-1	3.61E+1	2.93E-1	2.93E+0	1.59E-2	-1.84E+1	2.09E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.50E+1	4.66E-1	6.04E-1	3.61E+1	2.93E-1	2.93E+0	1.59E-2	-1.84E+1	2.09E+1
PET	MJ	3.80E+1	4.71E-1	2.28E+0	4.07E+1	2.97E-1	3.13E+0	1.65E-2	-1.96E+1	2.46E+1
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	2.28E-2	5.34E-5	8.88E-3	3.17E-2	3.13E-5	2.96E-3	1.84E-5	-1.06E-2	2.41E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.59E-5	1.11E-6	7.80E-7	2.78E-5	7.07E-7	4.44E-6	1.81E-8	-1.42E-5	1.88E-5
NHWD	kg	1.24E-1	2.78E-2	1.13E-3	1.53E-1	1.71E-2	1.02E-1	6.85E-2	-5.46E-2	2.87E-1
RWD	kg	6.05E-5	2.88E-6	1.40E-6	6.48E-5	1.88E-6	1.03E-5	9.80E-8	-2.89E-5	4.82E-5
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