Environmental Profile

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

Ecochain v3.5.80

Product:	3004641 - PVC Electro Pipe CR 1 1/2" 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	0.25	0.01	0.01	0.27	0	0.09	0	-0.13	0.24
ADPE	kg Sb-eq	6.39E-5	1.36E-6	2.01E-6	6.73E-5	8.55E-7	7.27E-6	9.05E-9	-2.63E-5	4.91E-5
ADPF	kg Sb-eq	2.82E-2	3.91E-4	5.39E-4	2.92E-2	2.41E-4	2.56E-3	1.27E-5	-1.50E-2	1.70E-2
GWP	kg CO2-eq	2.28E+0	5.32E-2	9.58E-2	2.42E+0	3.28E-2	8.70E-1	8.24E-3	-1.26E+0	2.07E+0
ODP	kg CFC-11-eq	1.32E-6	9.44E-9	9.01E-9	1.34E-6	6.08E-9	1.04E-7	3.06E-10	-6.52E-7	7.97E-7
POCP	kg ethene-eq	1.42E-3	3.21E-5	4.22E-5	1.49E-3	1.97E-5	2.01E-4	2.17E-6	-6.52E-4	1.06E-3
AP	kg SO2-eq	8.78E-3	2.34E-4	3.76E-4	9.39E-3	1.41E-4	1.48E-3	6.81E-6	-4.13E-3	6.89E-3
EP	kg PO4 3−-eq	1.05E-3	4.59E-5	5.94E-5	1.16E-3	2.82E-5	2.24E-4	2.65E-6	-5.04E-4	9.11E-4
HTP	kg 1,4-DB-eq	8.81E-1	2.24E-2	3.62E-2	9.39E-1	1.40E-2	3.93E-1	7.06E-4	-3.99E-1	9.48E-1
FAETP	kg 1,4-DB-eq	1.93E-2	6.54E-4	1.47E-3	2.14E-2	4.11E-4	5.91E-3	2.17E-4	-8.73E-3	1.92E-2
MAETP	kg 1,4-DB-eq	5.60E+1	2.35E+0	6.01E+0	6.44E+1	1.47E+0	1.94E+1	2.64E-1	-2.56E+1	5.99E+1
TETP	kg 1,4-DB-eq	6.15E-3	7.91E-5	2.25E-3	8.48E-3	4.97E-5	1.40E-3	2.34E-6	-2.90E-3	7.03E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.13E+0	5.37E-2	1.13E-1	2.30E+0	3.31E-2	1.10E+0	9.60E-3	-1.30E+0	2.14E+0
GWP-f	kg CO2 eq	2.33E+0	5.36E-2	8.84E-2	2.48E+0	3.31E-2	8.77E-1	9.59E-3	-1.29E+0	2.10E+0
GWP-b	kg CO2 eq	-2.04E-1	2.48E-5	1.91E-2	-1.85E-1	2.01E-5	2.21E-1	1.23E-5	-9.02E-3	2.74E-2
GWP-luluc	kg CO2 eq	1.91E-3	1.97E-5	5.39E-3	7.32E-3	1.17E-5	3.97E-4	2.55E-7	-8.66E-4	6.86E-3
ODP	kg CFC11 eq	1.30E-6	1.18E-8	1.07E-8	1.32E-6	7.62E-9	1.08E-7	3.80E-10	-6.46E-7	7.93E-7
AP	mol H+ eq	1.06E-2	3.11E-4	4.82E-4	1.14E-2	1.88E-4	1.85E-3	9.12E-6	-4.99E-3	8.44E-3
EP-fw	kg P eq	1.03E-4	5.41E-7	1.26E-6	1.05E-4	2.72E-7	1.32E-5	1.15E-8	-4.79E-5	7.03E-5
EP-m	kg N eq	1.80E-3	1.10E-4	1.42E-4	2.05E-3	6.74E-5	4.52E-4	5.60E-6	-8.75E-4	1.70E-3
EP-T	mol N eq	1.95E-2	1.21E-3	1.52E-3	2.22E-2	7.43E-4	4.99E-3	3.65E-5	-9.46E-3	1.85E-2
POCP	kg NMVOC eq	6.75E-3	3.45E-4	4.30E-4	7.52E-3	2.12E-4	1.49E-3	1.24E-5	-3.22E-3	6.02E-3
ADP-mm	kg Sb eq	6.39E-5	1.36E-6	2.01E-6	6.73E-5	8.55E-7	7.27E-6	9.05E-9	-2.63E-5	4.91E-5
ADP-f	MJ	6.01E+1	8.09E-1	1.02E+0	6.19E+1	5.08E-1	5.06E+0	2.76E-2	-3.15E+1	3.60E+1
WDP	m3 depriv.	3.92E+0	2.89E-3	6.92E-1	4.61E+0	1.56E-3	1.98E-1	1.53E-4	-1.86E+0	2.95E+0
PM	disease inc.	7.96E-8	4.82E-9	7.48E-9	9.19E-8	2.98E-9	2.31E-8	1.89E-10	-3.27E-8	8.55E-8
IR	kBq U-235 eq	1.27E-1	3.39E-3	1.85E-3	1.32E-1	2.22E-3	1.77E-2	1.27E-4	-6.02E-2	9.21E-2
ETP-fw	CTUe	3.95E+1	7.21E-1	1.71E+0	4.19E+1	4.12E-1	3.82E+1	4.22E-1	-1.88E+1	6.21E+1
HTP-c	CTUh	1.60E-9	2.34E-11	5.82E-11	1.68E-9	1.47E-11	5.59E-10	7.23E-13	-6.93E-10	1.57E-9
HTP-nc	CTUh	5.07E-8	7.89E-10	1.78E-9	5.32E-8	4.91E-10	1.34E-8	8.09E-11	-2.39E-8	4.33E-8
SQP	Pt	2.74E+1	7.02E-1	7.65E-2	2.82E+1	4.34E-1	3.15E+0	7.02E-2	-7.61E+0	2.43E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.88E+0	1.01E-2	3.09E+0	8.97E+0	7.28E-3	3.64E-1	1.01E-3	-2.22E+0	7.13E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.88E+0	1.01E-2	3.09E+0	8.97E+0	7.28E-3	3.64E-1	1.01E-3	-2.22E+0	7.13E+0
PENRE	MJ	6.44E+1	8.59E-1	1.11E+0	6.64E+1	5.39E-1	5.38E+0	2.93E-2	-3.39E+1	3.85E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.44E+1	8.59E-1	1.11E+0	6.64E+1	5.39E-1	5.38E+0	2.93E-2	-3.39E+1	3.85E+1
PET	MJ	7.03E+1	8.69E-1	4.20E+0	7.54E+1	5.46E-1	5.75E+0	3.03E-2	-3.61E+1	4.56E+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	4.19E-2	9.85E-5	1.63E-2	5.83E-2	5.74E-5	5.43E-3	3.38E-5	-1.95E-2	4.44E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.79E-5	2.05E-6	1.43E-6	5.14E-5	1.30E-6	8.15E-6	3.32E-8	-2.61E-5	3.48E-5
NHWD	kg	2.30E-1	5.13E-2	2.07E-3	2.83E-1	3.15E-2	1.89E-1	1.26E-1	-1.01E-1	5.29E-1
RWD	kg	1.12E-4	5.31E-6	2.57E-6	1.20E-4	3.45E-6	1.90E-5	1.80E-7	-5.32E-5	8.90E-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