Environmental Profile

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

Ecochain v3.5.80

Product:	3004643 - PVC Electro Pipe CR 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	0.4	0.01	0.02	0.43	0.01	0.14	0	-0.2	0.38
ADPE	kg Sb-eq	1.03E-4	2.19E-6	3.23E-6	1.08E-4	1.38E-6	1.17E-5	1.45E-8	-4.23E-5	7.90E-5
ADPF	kg Sb-eq	4.54E-2	6.30E-4	8.67E-4	4.69E-2	3.87E-4	4.11E-3	2.05E-5	-2.42E-2	2.73E-2
GWP	kg CO2-eq	3.66E+0	8.56E-2	1.54E-1	3.90E+0	5.27E-2	1.40E+0	1.32E-2	-2.04E+0	3.33E+0
ODP	kg CFC-11-eq	2.12E-6	1.52E-8	1.45E-8	2.15E-6	9.78E-9	1.68E-7	4.92E-10	-1.05E-6	1.28E-6
POCP	kg ethene-eq	2.28E-3	5.17E-5	6.79E-5	2.40E-3	3.17E-5	3.24E-4	3.50E-6	-1.05E-3	1.71E-3
AP	kg SO2-eq	1.41E-2	3.76E-4	6.05E-4	1.51E-2	2.27E-4	2.38E-3	1.10E-5	-6.64E-3	1.11E-2
EP	kg PO4 3−-eq	1.70E-3	7.39E-5	9.55E-5	1.87E-3	4.53E-5	3.60E-4	4.26E-6	-8.12E-4	1.47E-3
HTP	kg 1,4-DB-eq	1.42E+0	3.60E-2	5.82E-2	1.51E+0	2.26E-2	6.33E-1	1.14E-3	-6.42E-1	1.53E+0
FAETP	kg 1,4-DB-eq	3.10E-2	1.05E-3	2.37E-3	3.44E-2	6.61E-4	9.52E-3	3.50E-4	-1.41E-2	3.09E-2
MAETP	kg 1,4-DB-eq	9.01E+1	3.78E+0	9.67E+0	1.04E+2	2.36E+0	3.13E+1	4.25E-1	-4.12E+1	9.64E+1
TETP	kg 1,4-DB-eq	9.90E-3	1.27E-4	3.61E-3	1.36E-2	7.99E-5	2.26E-3	3.76E-6	-4.67E-3	1.13E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.42E+0	8.64E-2	1.82E-1	3.69E+0	5.32E-2	1.78E+0	1.54E-2	-2.10E+0	3.44E+0
GWP-f	kg CO2 eq	3.76E+0	8.63E-2	1.42E-1	3.99E+0	5.32E-2	1.41E+0	1.54E-2	-2.08E+0	3.38E+0
GWP-b	kg CO2 eq	-3.38E-1	3.99E-5	3.07E-2	-3.07E-1	3.23E-5	3.66E-1	1.98E-5	-1.45E-2	4.39E-2
GWP-luluc	kg CO2 eq	3.08E-3	3.16E-5	8.67E-3	1.18E-2	1.88E-5	6.39E-4	4.10E-7	-1.39E-3	1.10E-2
ODP	kg CFC11 eq	2.09E-6	1.91E-8	1.72E-8	2.13E-6	1.23E-8	1.73E-7	6.11E-10	-1.04E-6	1.28E-6
AP	mol H+ eq	1.70E-2	5.01E-4	7.76E-4	1.83E-2	3.03E-4	2.98E-3	1.47E-5	-8.03E-3	1.36E-2
EP-fw	kg P eq	1.66E-4	8.71E-7	2.03E-6	1.68E-4	4.38E-7	2.13E-5	1.86E-8	-7.70E-5	1.13E-4
EP-m	kg N eq	2.89E-3	1.76E-4	2.29E-4	3.30E-3	1.08E-4	7.28E-4	9.01E-6	-1.41E-3	2.74E-3
EP-T	mol N eq	3.14E-2	1.95E-3	2.45E-3	3.58E-2	1.19E-3	8.03E-3	5.87E-5	-1.52E-2	2.99E-2
POCP	kg NMVOC eq	1.09E-2	5.55E-4	6.92E-4	1.21E-2	3.41E-4	2.40E-3	2.00E-5	-5.19E-3	9.69E-3
ADP-mm	kg Sb eq	1.03E-4	2.19E-6	3.23E-6	1.08E-4	1.38E-6	1.17E-5	1.45E-8	-4.23E-5	7.90E-5
ADP-f	MJ	9.67E+1	1.30E+0	1.65E+0	9.96E+1	8.16E-1	8.14E+0	4.43E-2	-5.07E+1	5.80E+1
WDP	m3 depriv.	6.30E+0	4.66E-3	1.11E+0	7.42E+0	2.50E-3	3.19E-1	2.46E-4	-2.99E+0	4.75E+0
PM	disease inc.	1.29E-7	7.75E-9	1.20E-8	1.48E-7	4.80E-9	3.71E-8	3.04E-10	-5.27E-8	1.38E-7
IR	kBq U-235 eq	2.04E-1	5.46E-3	2.97E-3	2.13E-1	3.57E-3	2.85E-2	2.04E-4	-9.69E-2	1.48E-1
ETP-fw	CTUe	6.35E+1	1.16E+0	2.75E+0	6.74E+1	6.63E-1	6.15E+1	6.78E-1	-3.03E+1	9.99E+1
HTP-c	CTUh	2.58E-9	3.77E-11	9.36E-11	2.71E-9	2.36E-11	9.00E-10	1.16E-12	-1.12E-9	2.52E-9
HTP-nc	CTUh	8.15E-8	1.27E-9	2.87E-9	8.57E-8	7.90E-10	2.16E-8	1.30E-10	-3.84E-8	6.97E-8
SQP	Pt	4.51E+1	1.13E+0	1.23E-1	4.63E+1	6.98E-1	5.06E+0	1.13E-1	-1.24E+1	3.98E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.60E+0	1.63E-2	4.96E+0	1.46E+1	1.17E-2	5.85E-1	1.62E-3	-3.61E+0	1.16E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.60E+0	1.63E-2	4.96E+0	1.46E+1	1.17E-2	5.85E-1	1.62E-3	-3.61E+0	1.16E+1
PENRE	MJ	1.04E+2	1.38E+0	1.78E+0	1.07E+2	8.67E-1	8.66E+0	4.70E-2	-5.46E+1	6.19E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.04E+2	1.38E+0	1.78E+0	1.07E+2	8.67E-1	8.66E+0	4.70E-2	-5.46E+1	6.19E+1
PET	MJ	1.13E+2	1.40E+0	6.75E+0	1.21E+2	8.78E-1	9.24E+0	4.87E-2	-5.82E+1	7.35E+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	6.75E-2	1.59E-4	2.62E-2	9.39E-2	9.24E-5	8.74E-3	5.44E-5	-3.13E-2	7.14E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.71E-5	3.30E-6	2.30E-6	8.27E-5	2.09E-6	1.31E-5	5.34E-8	-4.20E-5	5.60E-5
NHWD	kg	3.70E-1	8.26E-2	3.33E-3	4.56E-1	5.06E-2	3.04E-1	2.02E-1	-1.62E-1	8.51E-1
RWD	kg	1.80E-4	8.55E-6	4.14E-6	1.92E-4	5.55E-6	3.05E-5	2.90E-7	-8.55E-5	1.43E-4
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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