Environmental Profile

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

Ecochain v3.5.80

Product:	3066372 - PVC Electro Pipe CR 21.8x19.6 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	0.09	0	0	0.1	0	0.03	0	-0.05	0.09
ADPE	kg Sb-eq	2.31E-5	4.93E-7	7.25E-7	2.43E-5	3.08E-7	2.62E-6	3.26E-9	-9.49E-6	1.78E-5
ADPF	kg Sb-eq	1.02E-2	1.42E-4	1.94E-4	1.06E-2	8.68E-5	9.23E-4	4.60E-6	-5.43E-3	6.15E-3
GWP	kg CO2-eq	8.25E-1	1.93E-2	3.46E-2	8.79E-1	1.18E-2	3.16E-1	2.97E-3	-4.57E-1	7.52E-1
ODP	kg CFC-11-eq	4.76E-7	3.42E-9	3.25E-9	4.83E-7	2.19E-9	3.76E-8	1.10E-10	-2.35E-7	2.88E-7
POCP	kg ethene-eq	5.16E-4	1.16E-5	1.52E-5	5.43E-4	7.09E-6	7.28E-5	7.84E-7	-2.36E-4	3.87E-4
AP	kg SO2-eq	3.19E-3	8.48E-5	1.36E-4	3.41E-3	5.09E-5	5.34E-4	2.45E-6	-1.49E-3	2.50E-3
EP	kg PO4 3−-eq	3.84E-4	1.67E-5	2.14E-5	4.22E-4	1.02E-5	8.10E-5	9.56E-7	-1.83E-4	3.31E-4
HTP	kg 1,4-DB-eq	3.19E-1	8.12E-3	1.31E-2	3.41E-1	5.06E-3	1.42E-1	2.55E-4	-1.44E-1	3.43E-1
FAETP	kg 1,4-DB-eq	6.99E-3	2.37E-4	5.31E-4	7.76E-3	1.48E-4	2.14E-3	7.83E-5	-3.16E-3	6.97E-3
MAETP	kg 1,4-DB-eq	2.03E+1	8.53E-1	2.17E+0	2.33E+1	5.29E-1	7.03E+0	9.52E-2	-9.26E+0	2.17E+1
TETP	kg 1,4-DB-eq	2.23E-3	2.87E-5	8.11E-4	3.07E-3	1.79E-5	5.06E-4	8.42E-7	-1.05E-3	2.54E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	7.55E-1	1.95E-2	4.07E-2	8.15E-1	1.19E-2	4.16E-1	3.46E-3	-4.71E-1	7.75E-1
GWP-f	kg CO2 eq	8.46E-1	1.95E-2	3.19E-2	8.98E-1	1.19E-2	3.18E-1	3.46E-3	-4.68E-1	7.63E-1
GWP-b	kg CO2 eq	-9.21E-2	8.98E-6	6.89E-3	-8.52E-2	7.24E-6	9.82E-2	4.43E-6	-3.25E-3	9.79E-3
GWP-luluc	kg CO2 eq	7.01E-4	7.13E-6	1.94E-3	2.65E-3	4.22E-6	1.43E-4	9.18E-8	-3.15E-4	2.48E-3
ODP	kg CFC11 eq	4.70E-7	4.29E-9	3.85E-9	4.78E-7	2.75E-9	3.88E-8	1.37E-10	-2.33E-7	2.86E-7
AP	mol H+ eq	3.85E-3	1.13E-4	1.74E-4	4.13E-3	6.79E-5	6.70E-4	3.29E-6	-1.81E-3	3.07E-3
EP-fw	kg P eq	3.73E-5	1.96E-7	4.56E-7	3.80E-5	9.81E-8	4.77E-6	4.16E-9	-1.73E-5	2.55E-5
EP-m	kg N eq	6.56E-4	3.98E-5	5.12E-5	7.47E-4	2.43E-5	1.64E-4	2.02E-6	-3.18E-4	6.19E-4
EP-T	mol N eq	7.12E-3	4.38E-4	5.50E-4	8.11E-3	2.68E-4	1.81E-3	1.31E-5	-3.45E-3	6.75E-3
POCP	kg NMVOC eq	2.46E-3	1.25E-4	1.55E-4	2.74E-3	7.65E-5	5.41E-4	4.48E-6	-1.17E-3	2.19E-3
ADP-mm	kg Sb eq	2.31E-5	4.93E-7	7.25E-7	2.43E-5	3.08E-7	2.62E-6	3.26E-9	-9.49E-6	1.78E-5
ADP-f	MJ	2.18E+1	2.93E-1	3.69E-1	2.24E+1	1.83E-1	1.83E+0	9.94E-3	-1.14E+1	1.31E+1
WDP	m3 depriv.	1.41E+0	1.05E-3	2.50E-1	1.67E+0	5.61E-4	7.15E-2	5.51E-5	-6.70E-1	1.07E+0
PM	disease inc.	2.97E-8	1.75E-9	2.70E-9	3.42E-8	1.08E-9	8.34E-9	6.82E-11	-1.19E-8	3.17E-8
IR	kBq U-235 eq	4.61E-2	1.23E-3	6.66E-4	4.79E-2	8.00E-4	6.39E-3	4.57E-5	-2.17E-2	3.35E-2
ETP-fw	CTUe	1.43E+1	2.62E-1	6.16E-1	1.52E+1	1.49E-1	1.38E+1	1.52E-1	-6.87E+0	2.24E+1
HTP-c	CTUh	5.86E-10	8.49E-12	2.10E-11	6.15E-10	5.29E-12	2.03E-10	2.60E-13	-2.51E-10	5.73E-10
HTP-nc	CTUh	1.84E-8	2.86E-10	6.43E-10	1.93E-8	1.77E-10	4.84E-9	2.92E-11	-8.65E-9	1.57E-8
SQP	Pt	1.16E+1	2.55E-1	2.76E-2	1.19E+1	1.57E-1	1.14E+0	2.53E-2	-3.10E+0	1.01E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.37E+0	3.67E-3	1.11E+0	3.49E+0	2.62E-3	1.31E-1	3.63E-4	-8.72E-1	2.75E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.37E+0	3.67E-3	1.11E+0	3.49E+0	2.62E-3	1.31E-1	3.63E-4	-8.72E-1	2.75E+0
PENRE	MJ	2.33E+1	3.12E-1	4.00E-1	2.41E+1	1.94E-1	1.94E+0	1.05E-2	-1.23E+1	1.40E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.33E+1	3.12E-1	4.00E-1	2.41E+1	1.94E-1	1.94E+0	1.05E-2	-1.23E+1	1.40E+1
PET	MJ	2.57E+1	3.15E-1	1.51E+0	2.75E+1	1.97E-1	2.07E+0	1.09E-2	-1.31E+1	1.67E+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	1.52E-2	3.57E-5	5.88E-3	2.11E-2	2.07E-5	1.96E-3	1.22E-5	-7.03E-3	1.61E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.74E-5	7.44E-7	5.17E-7	1.87E-5	4.68E-7	2.94E-6	1.20E-8	-9.44E-6	1.27E-5
NHWD	kg	8.38E-2	1.86E-2	7.46E-4	1.03E-1	1.13E-2	6.85E-2	4.53E-2	-3.64E-2	1.92E-1
RWD	kg	4.05E-5	1.93E-6	9.28E-7	4.34E-5	1.24E-6	6.86E-6	6.49E-8	-1.92E-5	3.23E-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

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