Environmental Profile

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

Ecochain v3.5.80

Product:	3004646 - PVC Electro Pipe Vsv GY 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	0.26	0.01	0.01	0.28	0	0.09	0	-0.13	0.24
ADPE	kg Sb-eq	6.19E-5	1.31E-6	1.98E-6	6.52E-5	8.42E-7	7.18E-6	8.92E-9	-2.61E-5	4.72E-5
ADPF	kg Sb-eq	2.89E-2	3.77E-4	5.30E-4	2.98E-2	2.37E-4	2.52E-3	1.26E-5	-1.48E-2	1.77E-2
GWP	kg CO2-eq	2.40E+0	5.13E-2	9.43E-2	2.55E+0	3.23E-2	8.59E-1	8.13E-3	-1.25E+0	2.20E+0
ODP	kg CFC-11-eq	1.27E-6	9.10E-9	8.86E-9	1.29E-6	5.99E-9	1.03E-7	3.01E-10	-6.46E-7	7.52E-7
POCP	kg ethene-eq	1.58E-3	3.09E-5	4.15E-5	1.65E-3	1.94E-5	1.98E-4	2.15E-6	-6.43E-4	1.23E-3
AP	kg SO2-eq	9.52E-3	2.25E-4	3.70E-4	1.01E-2	1.39E-4	1.46E-3	6.71E-6	-4.08E-3	7.64E-3
EP	kg PO4 3−-eq	1.12E-3	4.43E-5	5.84E-5	1.22E-3	2.77E-5	2.21E-4	2.62E-6	-4.99E-4	9.76E-4
HTP	kg 1,4-DB-eq	8.59E-1	2.16E-2	3.56E-2	9.16E-1	1.38E-2	3.88E-1	6.97E-4	-3.95E-1	9.23E-1
FAETP	kg 1,4-DB-eq	1.88E-2	6.30E-4	1.45E-3	2.09E-2	4.04E-4	5.83E-3	2.13E-4	-8.65E-3	1.87E-2
MAETP	kg 1,4-DB-eq	5.47E+1	2.27E+0	5.92E+0	6.29E+1	1.44E+0	1.92E+1	2.59E-1	-2.54E+1	5.84E+1
TETP	kg 1,4-DB-eq	5.95E-3	7.63E-5	2.21E-3	8.24E-3	4.89E-5	1.38E-3	2.31E-6	-2.87E-3	6.80E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.27E+0	5.18E-2	1.11E-1	2.43E+0	3.26E-2	1.09E+0	9.47E-3	-1.29E+0	2.27E+0
GWP-f	kg CO2 eq	2.47E+0	5.17E-2	8.70E-2	2.61E+0	3.25E-2	8.66E-1	9.47E-3	-1.28E+0	2.24E+0
GWP-b	kg CO2 eq	-2.04E-1	2.39E-5	1.88E-2	-1.85E-1	1.98E-5	2.21E-1	1.21E-5	-8.92E-3	2.71E-2
GWP-luluc	kg CO2 eq	1.84E-3	1.89E-5	5.30E-3	7.16E-3	1.15E-5	3.92E-4	2.51E-7	-8.58E-4	6.71E-3
ODP	kg CFC11 eq	1.25E-6	1.14E-8	1.05E-8	1.27E-6	7.50E-9	1.06E-7	3.74E-10	-6.40E-7	7.49E-7
AP	mol H+ eq	1.14E-2	3.00E-4	4.75E-4	1.22E-2	1.85E-4	1.83E-3	8.99E-6	-4.93E-3	9.30E-3
EP-fw	kg P eq	1.06E-4	5.22E-7	1.24E-6	1.08E-4	2.68E-7	1.31E-5	1.14E-8	-4.74E-5	7.37E-5
EP-m	kg N eq	1.96E-3	1.06E-4	1.40E-4	2.20E-3	6.63E-5	4.46E-4	5.53E-6	-8.65E-4	1.85E-3
EP-T	mol N eq	2.04E-2	1.17E-3	1.50E-3	2.31E-2	7.31E-4	4.92E-3	3.60E-5	-9.36E-3	1.94E-2
POCP	kg NMVOC eq	7.32E-3	3.33E-4	4.24E-4	8.08E-3	2.09E-4	1.47E-3	1.23E-5	-3.18E-3	6.59E-3
ADP-mm	kg Sb eq	6.19E-5	1.31E-6	1.98E-6	6.52E-5	8.42E-7	7.18E-6	8.92E-9	-2.61E-5	4.72E-5
ADP-f	MJ	6.12E+1	7.80E-1	1.01E+0	6.30E+1	4.99E-1	4.99E+0	2.72E-2	-3.11E+1	3.75E+1
WDP	m3 depriv.	3.80E+0	2.79E-3	6.81E-1	4.49E+0	1.53E-3	1.96E-1	1.52E-4	-1.84E+0	2.85E+0
PM	disease inc.	8.68E-8	4.64E-9	7.36E-9	9.88E-8	2.94E-9	2.28E-8	1.86E-10	-3.23E-8	9.23E-8
IR	kBq U-235 eq	1.22E-1	3.27E-3	1.82E-3	1.27E-1	2.18E-3	1.75E-2	1.25E-4	-5.96E-2	8.76E-2
ETP-fw	CTUe	3.85E+1	6.95E-1	1.68E+0	4.09E+1	4.06E-1	3.79E+1	4.18E-1	-1.87E+1	6.09E+1
HTP-c	CTUh	1.57E-9	2.26E-11	5.73E-11	1.65E-9	1.44E-11	5.51E-10	7.14E-13	-6.86E-10	1.53E-9
HTP-nc	CTUh	4.93E-8	7.61E-10	1.75E-9	5.18E-8	4.83E-10	1.33E-8	8.01E-11	-2.37E-8	4.20E-8
SQP	Pt	2.72E+1	6.77E-1	7.53E-2	2.79E+1	4.27E-1	3.10E+0	6.92E-2	-7.58E+0	2.39E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.79E+0	9.76E-3	3.04E+0	8.84E+0	7.16E-3	3.59E-1	9.94E-4	-2.20E+0	7.00E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.79E+0	9.76E-3	3.04E+0	8.84E+0	7.16E-3	3.59E-1	9.94E-4	-2.20E+0	7.00E+0
PENRE	MJ	6.57E+1	8.28E-1	1.09E+0	6.77E+1	5.30E-1	5.31E+0	2.88E-2	-3.35E+1	4.00E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.57E+1	8.28E-1	1.09E+0	6.77E+1	5.30E-1	5.31E+0	2.88E-2	-3.35E+1	4.00E+1
PET	MJ	7.15E+1	8.38E-1	4.13E+0	7.65E+1	5.37E-1	5.67E+0	2.98E-2	-3.57E+1	4.70E+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	4.12E-2	9.50E-5	1.60E-2	5.74E-2	5.65E-5	5.37E-3	3.33E-5	-1.93E-2	4.36E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.62E-5	1.98E-6	1.41E-6	4.96E-5	1.28E-6	8.04E-6	3.28E-8	-2.58E-5	3.31E-5
NHWD	kg	2.24E-1	4.95E-2	2.03E-3	2.75E-1	3.10E-2	1.86E-1	1.24E-1	-9.95E-2	5.17E-1
RWD	kg	1.07E-4	5.12E-6	2.53E-6	1.15E-4	3.40E-6	1.87E-5	1.77E-7	-5.26E-5	8.48E-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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777