Environmental Profile

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

Ecochain v3.5.80

Product:	3004655 - PVC Electro Pipe Vsv GY 5/8" L=4 Cont
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	0.07	0	0	0.07	0	0.02	0	-0.03	0.06
ADPE	kg Sb-eq	1.62E-5	3.38E-7	5.25E-7	1.70E-5	2.23E-7	1.89E-6	2.37E-9	-6.89E-6	1.23E-5
ADPF	kg Sb-eq	7.51E-3	9.72E-5	1.41E-4	7.75E-3	6.28E-5	6.65E-4	3.33E-6	-3.90E-3	4.58E-3
GWP	kg CO2-eq	6.23E-1	1.32E-2	2.50E-2	6.61E-1	8.55E-3	2.23E-1	2.15E-3	-3.27E-1	5.67E-1
ODP	kg CFC-11-eq	3.36E-7	2.35E-9	2.35E-9	3.40E-7	1.59E-9	2.73E-8	7.98E-11	-1.71E-7	1.98E-7
POCP	kg ethene-eq	4.04E-4	7.98E-6	1.10E-5	4.23E-4	5.13E-6	5.17E-5	5.69E-7	-1.67E-4	3.13E-4
AP	kg SO2-eq	2.45E-3	5.81E-5	9.82E-5	2.61E-3	3.68E-5	3.82E-4	1.78E-6	-1.06E-3	1.96E-3
EP	kg PO4 3−-eq	2.84E-4	1.14E-5	1.55E-5	3.11E-4	7.35E-6	5.74E-5	6.93E-7	-1.26E-4	2.50E-4
HTP	kg 1,4-DB-eq	2.22E-1	5.57E-3	9.45E-3	2.37E-1	3.66E-3	1.02E-1	1.85E-4	-1.03E-1	2.40E-1
FAETP	kg 1,4-DB-eq	4.84E-3	1.62E-4	3.85E-4	5.38E-3	1.07E-4	1.51E-3	5.63E-5	-2.26E-3	4.80E-3
MAETP	kg 1,4-DB-eq	1.40E+1	5.84E-1	1.57E+0	1.62E+1	3.83E-1	5.02E+0	6.86E-2	-6.67E+0	1.50E+1
TETP	kg 1,4-DB-eq	1.54E-3	1.97E-5	5.87E-4	2.15E-3	1.30E-5	3.66E-4	6.12E-7	-7.52E-4	1.77E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.45E-1	1.33E-2	2.95E-2	6.88E-1	8.63E-3	2.25E-1	2.51E-3	-3.38E-1	5.86E-1
GWP-f	kg CO2 eq	6.40E-1	1.33E-2	2.31E-2	6.76E-1	8.62E-3	2.25E-1	2.51E-3	-3.35E-1	5.77E-1
GWP-b	kg CO2 eq	4.97E-3	6.15E-6	4.99E-3	9.97E-3	5.24E-6	-2.31E-4	3.22E-6	-2.36E-3	7.38E-3
GWP-luluc	kg CO2 eq	4.48E-4	4.89E-6	1.41E-3	1.86E-3	3.05E-6	1.04E-4	6.66E-8	-2.19E-4	1.75E-3
ODP	kg CFC11 eq	3.31E-7	2.94E-9	2.79E-9	3.36E-7	1.99E-9	2.81E-8	9.92E-11	-1.69E-7	1.98E-7
AP	mol H+ eq	2.94E-3	7.73E-5	1.26E-4	3.14E-3	4.91E-5	4.78E-4	2.38E-6	-1.28E-3	2.39E-3
EP-fw	kg P eq	2.74E-5	1.34E-7	3.30E-7	2.79E-5	7.09E-8	3.46E-6	3.02E-9	-1.25E-5	1.89E-5
EP-m	kg N eq	4.94E-4	2.72E-5	3.71E-5	5.59E-4	1.76E-5	1.15E-4	1.46E-6	-2.21E-4	4.72E-4
EP-T	mol N eq	5.12E-3	3.00E-4	3.98E-4	5.82E-3	1.94E-4	1.27E-3	9.53E-6	-2.35E-3	4.95E-3
POCP	kg NMVOC eq	1.85E-3	8.58E-5	1.12E-4	2.05E-3	5.54E-5	3.82E-4	3.25E-6	-8.18E-4	1.67E-3
ADP-mm	kg Sb eq	1.62E-5	3.38E-7	5.25E-7	1.70E-5	2.23E-7	1.89E-6	2.36E-9	-6.89E-6	1.23E-5
ADP-f	MJ	1.59E+1	2.01E-1	2.67E-1	1.64E+1	1.32E-1	1.32E+0	7.20E-3	-8.18E+0	9.69E+0
WDP	m3 depriv.	1.00E+0	7.19E-4	1.81E-1	1.18E+0	4.06E-4	5.18E-2	4.02E-5	-4.87E-1	7.47E-1
PM	disease inc.	1.97E-8	1.20E-9	1.95E-9	2.29E-8	7.78E-10	5.97E-9	4.94E-11	-8.10E-9	2.16E-8
IR	kBq U-235 eq	3.16E-2	8.42E-4	4.82E-4	3.29E-2	5.78E-4	4.61E-3	3.31E-5	-1.57E-2	2.24E-2
ETP-fw	CTUe	9.84E+0	1.79E-1	4.46E-1	1.05E+1	1.07E-1	1.00E+1	1.11E-1	-4.70E+0	1.60E+1
HTP-c	CTUh	3.91E-10	5.82E-12	1.52E-11	4.12E-10	3.82E-12	1.42E-10	1.89E-13	-1.78E-10	3.80E-10
HTP-nc	CTUh	1.28E-8	1.96E-10	4.65E-10	1.34E-8	1.28E-10	3.49E-9	2.12E-11	-6.16E-9	1.09E-8
SQP	Pt	1.83E+0	1.74E-1	2.00E-2	2.02E+0	1.13E-1	8.17E-1	1.83E-2	-8.66E-1	2.10E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.26E-1	2.52E-3	8.06E-1	1.53E+0	1.90E-3	9.50E-2	2.63E-4	-3.54E-1	1.28E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.26E-1	2.52E-3	8.06E-1	1.53E+0	1.90E-3	9.50E-2	2.63E-4	-3.54E-1	1.28E+0
PENRE	MJ	1.71E+1	2.13E-1	2.90E-1	1.76E+1	1.41E-1	1.40E+0	7.64E-3	-8.81E+0	1.04E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.71E+1	2.13E-1	2.90E-1	1.76E+1	1.41E-1	1.40E+0	7.64E-3	-8.81E+0	1.04E+1
PET	MJ	1.78E+1	2.16E-1	1.10E+0	1.92E+1	1.42E-1	1.50E+0	7.90E-3	-9.16E+0	1.16E+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	1.07E-2	2.45E-5	4.26E-3	1.50E-2	1.50E-5	1.41E-3	8.83E-6	-5.09E-3	1.13E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.18E-5	5.10E-7	3.74E-7	1.27E-5	3.38E-7	2.12E-6	8.69E-9	-6.74E-6	8.40E-6
NHWD	kg	5.61E-2	1.28E-2	5.40E-4	6.94E-2	8.20E-3	4.79E-2	3.28E-2	-2.59E-2	1.32E-1
RWD	kg	2.76E-5	1.32E-6	6.72E-7	2.96E-5	9.00E-7	4.93E-6	4.70E-8	-1.38E-5	2.17E-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