Environmental Profile

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

Ecochain v3.5.80

Product:	3004653 - PVC Electro Pipe Vsv GY 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

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Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.41	0.01	0.02	0.44	0.01	0.14	0	-0.2	0.39
ADPE	kg Sb-eq	9.77E-5	2.08E-6	3.13E-6	1.03E-4	1.33E-6	1.14E-5	1.41E-8	-4.13E-5	7.43E-5
ADPF	kg Sb-eq	4.57E-2	5.98E-4	8.40E-4	4.72E-2	3.75E-4	3.99E-3	1.99E-5	-2.35E-2	2.81E-2
GWP	kg CO2-eq	3.81E+0	8.13E-2	1.49E-1	4.04E+0	5.11E-2	1.36E+0	1.29E-2	-1.98E+0	3.49E+0
ODP	kg CFC-11-eq	2.01E-6	1.44E-8	1.40E-8	2.04E-6	9.47E-9	1.64E-7	4.77E-10	-1.02E-6	1.19E-6
POCP	kg ethene-eq	2.51E-3	4.91E-5	6.57E-5	2.62E-3	3.06E-5	3.14E-4	3.39E-6	-1.02E-3	1.95E-3
AP	kg SO2-eq	1.51E-2	3.57E-4	5.86E-4	1.60E-2	2.20E-4	2.31E-3	1.06E-5	-6.46E-3	1.21E-2
EP	kg PO4 3−-eq	1.78E-3	7.02E-5	9.25E-5	1.94E-3	4.39E-5	3.50E-4	4.14E-6	-7.91E-4	1.55E-3
HTP	kg 1,4-DB-eq	1.36E+0	3.42E-2	5.64E-2	1.45E+0	2.18E-2	6.14E-1	1.10E-3	-6.26E-1	1.46E+0
FAETP	kg 1,4-DB-eq	2.98E-2	9.99E-4	2.29E-3	3.31E-2	6.40E-4	9.23E-3	3.36E-4	-1.37E-2	2.96E-2
MAETP	kg 1,4-DB-eq	8.66E+1	3.59E+0	9.36E+0	9.95E+1	2.29E+0	3.04E+1	4.09E-1	-4.02E+1	9.25E+1
TETP	kg 1,4-DB-eq	9.43E-3	1.21E-4	3.50E-3	1.30E-2	7.74E-5	2.19E-3	3.65E-6	-4.55E-3	1.08E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.58E+0	8.21E-2	1.76E-1	3.84E+0	5.15E-2	1.74E+0	1.50E-2	-2.04E+0	3.60E+0
GWP-f	kg CO2 eq	3.91E+0	8.20E-2	1.38E-1	4.13E+0	5.15E-2	1.37E+0	1.50E-2	-2.03E+0	3.55E+0
GWP-b	kg CO2 eq	-3.39E-1	3.78E-5	2.98E-2	-3.09E-1	3.13E-5	3.66E-1	1.92E-5	-1.41E-2	4.29E-2
GWP-luluc	kg CO2 eq	2.92E-3	3.00E-5	8.39E-3	1.13E-2	1.82E-5	6.21E-4	3.98E-7	-1.36E-3	1.06E-2
ODP	kg CFC11 eq	1.98E-6	1.81E-8	1.66E-8	2.02E-6	1.19E-8	1.68E-7	5.92E-10	-1.01E-6	1.19E-6
AP	mol H+ eq	1.81E-2	4.75E-4	7.51E-4	1.93E-2	2.93E-4	2.90E-3	1.42E-5	-7.81E-3	1.47E-2
EP-fw	kg P eq	1.68E-4	8.27E-7	1.97E-6	1.71E-4	4.24E-7	2.07E-5	1.80E-8	-7.50E-5	1.17E-4
EP-m	kg N eq	3.10E-3	1.68E-4	2.21E-4	3.49E-3	1.05E-4	7.07E-4	8.75E-6	-1.37E-3	2.94E-3
EP-T	mol N eq	3.24E-2	1.85E-3	2.37E-3	3.66E-2	1.16E-3	7.80E-3	5.69E-5	-1.48E-2	3.08E-2
POCP	kg NMVOC eq	1.16E-2	5.27E-4	6.70E-4	1.28E-2	3.31E-4	2.34E-3	1.94E-5	-5.04E-3	1.05E-2
ADP-mm	kg Sb eq	9.77E-5	2.08E-6	3.13E-6	1.03E-4	1.33E-6	1.14E-5	1.41E-8	-4.13E-5	7.43E-5
ADP-f	MJ	9.71E+1	1.24E+0	1.59E+0	9.99E+1	7.90E-1	7.90E+0	4.30E-2	-4.92E+1	5.94E+1
WDP	m3 depriv.	6.03E+0	4.42E-3	1.08E+0	7.11E+0	2.43E-3	3.10E-1	2.39E-4	-2.91E+0	4.51E+0
PM	disease inc.	1.38E-7	7.36E-9	1.17E-8	1.57E-7	4.65E-9	3.60E-8	2.95E-10	-5.13E-8	1.47E-7
IR	kBq U-235 eq	1.94E-1	5.18E-3	2.88E-3	2.02E-1	3.45E-3	2.77E-2	1.98E-4	-9.43E-2	1.39E-1
ETP-fw	CTUe	6.10E+1	1.10E+0	2.66E+0	6.47E+1	6.42E-1	6.00E+1	6.62E-1	-2.96E+1	9.64E+1
HTP-c	CTUh	2.49E-9	3.58E-11	9.07E-11	2.62E-9	2.28E-11	8.73E-10	1.13E-12	-1.09E-9	2.43E-9
HTP-nc	CTUh	7.81E-8	1.21E-9	2.77E-9	8.21E-8	7.65E-10	2.10E-8	1.27E-10	-3.75E-8	6.65E-8
SQP	Pt	4.45E+1	1.07E+0	1.19E-1	4.57E+1	6.76E-1	4.91E+0	1.10E-1	-1.23E+1	3.91E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.39E+0	1.55E-2	4.81E+0	1.42E+1	1.13E-2	5.69E-1	1.57E-3	-3.55E+0	1.12E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.39E+0	1.55E-2	4.81E+0	1.42E+1	1.13E-2	5.69E-1	1.57E-3	-3.55E+0	1.12E+1
PENRE	MJ	1.04E+2	1.31E+0	1.73E+0	1.07E+2	8.39E-1	8.41E+0	4.56E-2	-5.30E+1	6.35E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.04E+2	1.31E+0	1.73E+0	1.07E+2	8.39E-1	8.41E+0	4.56E-2	-5.30E+1	6.35E+1
PET	MJ	1.14E+2	1.33E+0	6.53E+0	1.21E+2	8.50E-1	8.98E+0	4.72E-2	-5.66E+1	7.47E+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	6.53E-2	1.51E-4	2.54E-2	9.08E-2	8.94E-5	8.51E-3	5.28E-5	-3.05E-2	6.90E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.33E-5	3.13E-6	2.23E-6	7.86E-5	2.02E-6	1.27E-5	5.19E-8	-4.09E-5	5.25E-5
NHWD	kg	3.55E-1	7.84E-2	3.22E-3	4.37E-1	4.90E-2	2.95E-1	1.96E-1	-1.58E-1	8.19E-1
RWD	kg	1.70E-4	8.12E-6	4.01E-6	1.83E-4	5.37E-6	2.97E-5	2.81E-7	-8.33E-5	1.35E-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