Environmental Profile

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

Ecochain v3.5.71

Product:	3076293 - PVC ML KG Pipe 125 SN4 L=5 54u
Unit:	1 piece
Manufacturer:	Wavin - HU - Zsámbék - Verified

The PVC KG multilayer pipe system is a modern PVC product with low pipe wall roughness and favorable flow proprieties, which can be used for cost-effective drainage of both precipitation and municipal wastewater. Sewer pipes combine the advantages of a traditional smooth inner pipe surface with the technology of a modern three-layer pipe wall structure.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	14-03-2023
End of validity:	14-03-2028
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 - HU - Zsámbék - Verified (2021). (☑ = 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

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	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.19E+1	1.36E-1	2.69E-1	1.23E+1	1.71E-1	5.39E+0	4.98E-2	-9.17E+0	8.70E+0
GWP-f	kg CO2 eq	1.28E+1	1.36E-1	1.47E-1	1.30E+1	1.71E-1	4.36E+0	4.98E-2	-9.12E+0	8.50E+0
GWP-b	kg CO2 eq	-9.28E-1	8.28E-5	1.21E-1	-8.06E-1	1.04E-4	1.03E+0	6.43E-5	-4.70E-2	1.76E-1
GWP-luluc	kg CO2 eq	2.60E-2	4.83E-5	6.87E-4	2.67E-2	6.05E-5	1.98E-3	1.37E-6	-4.52E-3	2.42E-2
ODP	kg CFC11 eq	6.74E-6	3.14E-8	2.29E-7	7.00E-6	3.94E-8	5.49E-7	2.08E-9	-3.60E-6	3.99E-6
AP	mol H+ eq	5.97E-2	7.77E-4	1.06E-3	6.16E-2	9.74E-4	9.27E-3	4.96E-5	-2.74E-2	4.45E-2
EP-fw	kg P eq	5.69E-4	1.12E-6	6.15E-6	5.76E-4	1.41E-6	6.64E-5	6.17E-8	-2.49E-4	3.94E-4
EP-m	kg N eq	1.04E-2	2.78E-4	3.63E-4	1.10E-2	3.48E-4	2.26E-3	2.98E-5	-5.06E-3	8.56E-3
EP-T	mol N eq	1.09E-1	3.06E-3	1.73E-3	1.14E-1	3.84E-3	2.49E-2	1.98E-4	-5.47E-2	8.79E-2
POCP	kg NMVOC eq	3.78E-2	8.75E-4	5.43E-4	3.92E-2	1.10E-3	7.43E-3	6.71E-5	-1.86E-2	2.92E-2
ADP-mm	kg Sb eq	4.29E-3	3.53E-6	9.28E-6	4.30E-3	4.42E-6	3.62E-5	4.90E-8	-1.37E-4	4.21E-3
ADP-f	MJ	3.19E+2	2.09E+0	5.90E+1	3.80E+2	2.62E+0	2.51E+1	1.50E-1	-2.03E+2	2.05E+2
WDP	m3 depriv.	2.04E+1	6.42E-3	7.37E-1	2.11E+1	8.05E-3	9.93E-1	8.48E-4	-9.67E+0	1.25E+1
PM	disease inc.	4.41E-7	1.23E-8	6.87E-9	4.60E-7	1.54E-8	1.16E-7	1.03E-9	-1.73E-7	4.19E-7
IR	kBq U-235 eq	6.73E-1	9.15E-3	7.03E-1	1.38E+0	1.15E-2	8.86E-2	6.88E-4	-3.21E-1	1.16E+0
ETP-fw	CTUe	2.43E+2	1.70E+0	1.65E+1	2.61E+2	2.13E+0	1.96E+2	2.18E+0	-9.94E+1	3.62E+2
HTP-c	CTUh	9.01E-9	6.05E-11	3.00E-10	9.37E-9	7.58E-11	2.80E-9	3.85E-12	-3.74E-9	8.52E-9
HTP-nc	CTUh	2.88E-7	2.03E-9	8.17E-9	2.98E-7	2.54E-9	6.78E-8	4.20E-10	-1.25E-7	2.44E-7
SQP	Pt	1.31E+2	1.79E+0	8.61E-1	1.34E+2	2.25E+0	1.56E+1	3.80E-1	-3.76E+1	1.14E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.90E+1	3.00E-2	1.49E+0	3.05E+1	3.77E-2	1.82E+0	5.31E-3	-1.10E+1	2.14E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.90E+1	3.00E-2	1.49E+0	3.05E+1	3.77E-2	1.82E+0	5.31E-3	-1.10E+1	2.14E+1
PENRE	MJ	3.42E+2	2.22E+0	5.91E+1	4.03E+2	2.79E+0	2.67E+1	1.60E-1	-2.20E+2	2.13E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.42E+2	2.22E+0	5.91E+1	4.03E+2	2.79E+0	2.67E+1	1.60E-1	-2.20E+2	2.13E+2
PET	MJ	3.71E+2	2.25E+0	6.05E+1	4.34E+2	2.82E+0	2.86E+1	1.65E-1	-2.31E+2	2.35E+2
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	2.23E-1	2.37E-4	2.58E-2	2.49E-1	2.97E-4	2.72E-2	1.84E-4	-1.02E-1	1.75E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.47E-4	5.35E-6	1.32E-6	7.53E-4	6.71E-6	4.07E-5	1.81E-7	-1.84E-4	6.17E-4
NHWD	kg	1.20E+0	1.30E-1	1.47E-1	1.48E+0	1.63E-1	9.19E-1	7.06E-1	-5.33E-1	2.73E+0
RWD	kg	5.91E-4	1.42E-5	3.45E-6	6.09E-4	1.78E-5	9.47E-5	9.84E-7	-2.89E-4	4.33E-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

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