Environmental Profile

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

Ecochain v3.5.64

Product:	3041798 - PE100 Pressure Pipe BK 90x5.4 L=12
Unit:	1 piece
Manufacturer:	Wavin - DE - Westeregeln - verified
Address:	Borrweg 10 39448 Börde-Hakel Germany
Contact:	https://www.wavin.com/en-en

PE pressure pipe that offers the right solution for every part of the main network in your sewerage system.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	11-08-2022
End of validity:	11-08-2027
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 - DE - Westeregeln - 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

GWP-total = EF Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF 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	3.54E+1	8.04E-1	7.25E-1	3.70E+1	4.65E-1	1.51E+1	2.57E-1	-2.33E+1	2.95E+1
GWP-f	kg CO2 eq	3.53E+1	8.04E-1	5.95E-1	3.67E+1	4.64E-1	1.51E+1	2.57E-1	-2.32E+1	2.93E+1
GWP-b	kg CO2 eq	1.71E-1	3.71E-4	6.11E-2	2.33E-1	2.82E-4	-1.68E-2	1.93E-4	-8.80E-2	1.28E-1
GWP-luluc	kg CO2 eq	1.05E-2	2.94E-4	6.89E-2	7.97E-2	1.64E-4	2.61E-3	3.69E-6	-5.28E-3	7.72E-2
ODP	kg CFC11 eq	1.93E-6	1.77E-7	7.82E-8	2.19E-6	1.07E-7	3.40E-7	5.49E-9	-1.11E-6	1.53E-6
AP	mol H+ eq	1.32E-1	4.66E-3	3.52E-3	1.40E-1	2.65E-3	1.43E-2	1.31E-4	-6.43E-2	9.26E-2
EP-fw	kg P eq	5.82E-4	8.11E-6	1.35E-5	6.04E-4	3.82E-6	7.53E-5	1.70E-7	-2.89E-4	3.94E-4
EP-m	kg N eq	2.20E-2	1.64E-3	7.26E-4	2.44E-2	9.47E-4	4.15E-3	9.26E-5	-1.18E-2	1.78E-2
EP-T	mol N eq	2.45E-1	1.81E-2	7.31E-3	2.71E-1	1.04E-2	4.57E-2	5.32E-4	-1.31E-1	1.97E-1
POCP	kg NMVOC eq	1.17E-1	5.17E-3	2.10E-3	1.25E-1	2.98E-3	1.44E-2	2.08E-4	-6.10E-2	8.14E-2
ADP-mm	kg Sb eq	3.17E-4	2.04E-5	1.75E-5	3.55E-4	1.20E-5	5.65E-5	1.31E-7	-1.50E-4	2.74E-4
ADP-f	MJ	1.25E+3	1.21E+1	7.00E+0	1.27E+3	7.13E+0	4.53E+1	4.01E-1	-6.96E+2	6.30E+2
WDP	m3 depriv.	2.70E+1	4.34E-2	3.99E+0	3.11E+1	2.19E-2	8.89E-1	1.84E-3	-1.35E+1	1.84E+1
PM	disease inc.	1.25E-6	7.22E-8	3.15E-8	1.36E-6	4.19E-8	2.35E-7	2.75E-9	-5.08E-7	1.13E-6
IR	kBq U-235 eq	1.08E+0	5.08E-2	1.88E-2	1.15E+0	3.12E-2	1.36E-1	1.87E-3	-4.20E-1	9.01E-1
ETP-fw	CTUe	2.26E+2	1.08E+1	1.72E+1	2.53E+2	5.79E+0	5.14E+1	3.53E-1	-1.01E+2	2.10E+2
HTP-c	CTUh	9.24E-9	3.51E-10	6.38E-10	1.02E-8	2.06E-10	6.09E-9	9.73E-12	-4.81E-9	1.17E-8
HTP-nc	CTUh	2.19E-7	1.18E-8	1.64E-8	2.47E-7	6.90E-9	7.70E-8	2.25E-10	-1.08E-7	2.24E-7
SQP	Pt	4.78E+1	1.05E+1	6.73E-1	5.89E+1	6.10E+0	3.61E+1	1.03E+0	-2.21E+1	8.01E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.02E+1	1.52E-1	3.71E+1	5.75E+1	1.02E-1	2.23E+0	1.59E-2	-1.01E+1	4.98E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.02E+1	1.52E-1	3.71E+1	5.75E+1	1.02E-1	2.23E+0	1.59E-2	-1.01E+1	4.98E+1
PENRE	MJ	1.35E+3	1.29E+1	7.48E+0	1.37E+3	7.57E+0	4.82E+1	4.25E-1	-7.51E+2	6.70E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.35E+3	1.29E+1	7.48E+0	1.37E+3	7.57E+0	4.82E+1	4.25E-1	-7.51E+2	6.70E+2
PET	MJ	1.37E+3	1.30E+1	4.46E+1	1.42E+3	7.67E+0	5.04E+1	4.41E-1	-7.61E+2	7.20E+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	4.09E-1	1.48E-3	9.47E-2	5.05E-1	8.07E-4	2.62E-2	4.95E-4	-2.07E-1	3.26E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.67E-4	3.07E-5	1.13E-5	2.09E-4	1.82E-5	7.37E-5	4.81E-7	-2.05E-4	9.63E-5
NHWD	kg	1.13E+0	7.69E-1	1.42E-2	1.92E+0	4.42E-1	2.22E+0	1.77E+0	-5.67E-1	5.78E+0
RWD	kg	1.18E-3	7.96E-5	2.71E-5	1.29E-3	4.85E-5	1.73E-4	2.62E-6	-3.90E-4	1.12E-3
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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