Environmental Profile

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

Ecochain v3.5.64

Product:	3053712 - SafeTech RCn PotW Pp 50x4.6 L=6 BC
Unit:	1 piece
Manufacturer:	Wavin - DE - Westeregeln - verified
Address:	Borrweg 10 39448 Börde-Hakel Germany
Contact:	https://www.wavin.com/en-en

Wavin SafeTech RC n is a co-extruded PE-100 RC two-layer pipe with protective properties according to PAS 1075. The outer signal layer is about 10% of the standard wall thickness and is colored according to the medium - blue for drinking water, orange for gas and green for waste water.

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	8.14E+0	3.41E-1	1.67E-1	8.65E+0	1.06E-1	3.47E+0	5.89E-2	-5.34E+0	6.94E+0
GWP-f	kg CO2 eq	8.10E+0	3.40E-1	1.37E-1	8.58E+0	1.06E-1	3.47E+0	5.89E-2	-5.32E+0	6.89E+0
GWP-b	kg CO2 eq	3.93E-2	1.57E-4	1.41E-2	5.36E-2	6.46E-5	-3.86E-3	4.42E-5	-2.02E-2	2.97E-2
GWP-luluc	kg CO2 eq	2.46E-3	1.25E-4	1.59E-2	1.84E-2	3.76E-5	5.97E-4	8.45E-7	-1.21E-3	1.79E-2
ODP	kg CFC11 eq	4.19E-7	7.51E-8	1.79E-8	5.12E-7	2.45E-8	7.78E-8	1.26E-9	-2.55E-7	3.60E-7
AP	mol H+ eq	3.03E-2	1.97E-3	8.10E-4	3.31E-2	6.06E-4	3.27E-3	3.00E-5	-1.47E-2	2.23E-2
EP-fw	kg P eq	1.35E-4	3.43E-6	3.10E-6	1.42E-4	8.75E-7	1.72E-5	3.89E-8	-6.62E-5	9.38E-5
EP-m	kg N eq	5.08E-3	6.96E-4	1.66E-4	5.94E-3	2.17E-4	9.52E-4	2.12E-5	-2.69E-3	4.44E-3
EP-T	mol N eq	5.66E-2	7.67E-3	1.68E-3	6.59E-2	2.39E-3	1.05E-2	1.22E-4	-2.99E-2	4.90E-2
POCP	kg NMVOC eq	2.70E-2	2.19E-3	4.83E-4	2.96E-2	6.83E-4	3.31E-3	4.77E-5	-1.40E-2	1.97E-2
ADP-mm	kg Sb eq	7.88E-5	8.62E-6	4.03E-6	9.14E-5	2.75E-6	1.29E-5	3.01E-8	-3.43E-5	7.28E-5
ADP-f	MJ	2.86E+2	5.13E+0	1.61E+0	2.93E+2	1.63E+0	1.04E+1	9.18E-2	-1.60E+2	1.45E+2
WDP	m3 depriv.	6.25E+0	1.84E-2	9.18E-1	7.18E+0	5.01E-3	2.04E-1	4.20E-4	-3.10E+0	4.29E+0
PM	disease inc.	2.84E-7	3.06E-8	7.24E-9	3.21E-7	9.60E-9	5.38E-8	6.30E-10	-1.16E-7	2.69E-7
IR	kBq U-235 eq	2.41E-1	2.15E-2	4.32E-3	2.67E-1	7.13E-3	3.12E-2	4.28E-4	-9.62E-2	2.10E-1
ETP-fw	CTUe	5.22E+1	4.58E+0	3.94E+0	6.07E+1	1.33E+0	1.18E+1	8.09E-2	-2.32E+1	5.07E+1
HTP-c	CTUh	2.15E-9	1.48E-10	1.47E-10	2.45E-9	4.72E-11	1.40E-9	2.23E-12	-1.10E-9	2.79E-9
HTP-nc	CTUh	5.10E-8	5.01E-9	3.78E-9	5.98E-8	1.58E-9	1.76E-8	5.14E-11	-2.46E-8	5.44E-8
SQP	Pt	1.09E+1	4.45E+0	1.54E-1	1.56E+1	1.40E+0	8.28E+0	2.35E-1	-5.07E+0	2.04E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.67E+0	6.43E-2	8.54E+0	1.33E+1	2.34E-2	5.11E-1	3.63E-3	-2.31E+0	1.15E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.67E+0	6.43E-2	8.54E+0	1.33E+1	2.34E-2	5.11E-1	3.63E-3	-2.31E+0	1.15E+1
PENRE	MJ	3.07E+2	5.45E+0	1.72E+0	3.14E+2	1.73E+0	1.10E+1	9.73E-2	-1.72E+2	1.55E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.07E+2	5.45E+0	1.72E+0	3.14E+2	1.73E+0	1.10E+1	9.73E-2	-1.72E+2	1.55E+2
PET	MJ	3.12E+2	5.52E+0	1.03E+1	3.27E+2	1.76E+0	1.16E+1	1.01E-1	-1.74E+2	1.66E+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	9.50E-2	6.25E-4	2.18E-2	1.17E-1	1.85E-4	5.99E-3	1.13E-4	-4.74E-2	7.64E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.87E-5	1.30E-5	2.59E-6	5.43E-5	4.17E-6	1.69E-5	1.10E-7	-4.69E-5	2.86E-5
NHWD	kg	2.68E-1	3.26E-1	3.26E-3	5.96E-1	1.01E-1	5.10E-1	4.04E-1	-1.30E-1	1.48E+0
RWD	kg	2.59E-4	3.37E-5	6.19E-6	2.99E-4	1.11E-5	3.96E-5	6.00E-7	-8.94E-5	2.61E-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

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