Environmental Profile

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

Ecochain v3.5.64

Product:	3072749 - SafeTech RCn PotW Pp 160x14.6 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	8.20E+1	3.82E+0	1.61E+0	8.75E+1	1.07E+0	3.52E+1	5.90E-1	-5.37E+1	7.05E+1
GWP-f	kg CO2 eq	8.17E+1	3.81E+0	1.32E+0	8.68E+1	1.06E+0	3.52E+1	5.90E-1	-5.35E+1	7.01E+1
GWP-b	kg CO2 eq	3.85E-1	1.60E-3	1.32E-1	5.19E-1	6.46E-4	-3.98E-2	4.43E-4	-2.02E-1	2.78E-1
GWP-luluc	kg CO2 eq	2.52E-2	1.46E-3	1.49E-1	1.76E-1	3.77E-4	5.98E-3	8.46E-6	-1.21E-2	1.70E-1
ODP	kg CFC11 eq	4.23E-6	8.37E-7	1.77E-7	5.24E-6	2.45E-7	7.80E-7	1.26E-8	-2.59E-6	3.69E-6
AP	mol H+ eq	3.06E-1	2.83E-2	7.78E-3	3.42E-1	6.06E-3	3.28E-2	3.00E-4	-1.48E-1	2.34E-1
EP-fw	kg P eq	1.37E-3	3.70E-5	2.99E-5	1.44E-3	8.76E-6	1.73E-4	3.90E-7	-6.64E-4	9.59E-4
EP-m	kg N eq	5.12E-2	9.20E-3	1.63E-3	6.20E-2	2.17E-3	9.56E-3	2.12E-4	-2.70E-2	4.69E-2
EP-T	mol N eq	5.72E-1	1.02E-1	1.63E-2	6.90E-1	2.39E-2	1.05E-1	1.22E-3	-3.01E-1	5.19E-1
POCP	kg NMVOC eq	2.72E-1	2.84E-2	4.70E-3	3.05E-1	6.84E-3	3.32E-2	4.78E-4	-1.40E-1	2.06E-1
ADP-mm	kg Sb eq	7.94E-4	9.24E-5	3.80E-5	9.25E-4	2.75E-5	1.30E-4	3.01E-7	-3.44E-4	7.38E-4
ADP-f	MJ	2.88E+3	5.70E+1	1.56E+1	2.95E+3	1.63E+1	1.04E+2	9.19E-1	-1.60E+3	1.47E+3
WDP	m3 depriv.	6.27E+1	1.97E-1	8.65E+0	7.16E+1	5.02E-2	2.04E+0	4.21E-3	-3.10E+1	4.26E+1
PM	disease inc.	2.86E-6	3.29E-7	7.08E-8	3.26E-6	9.61E-8	5.39E-7	6.31E-9	-1.17E-6	2.73E-6
IR	kBq U-235 eq	2.44E+0	2.39E-1	4.29E-2	2.72E+0	7.14E-2	3.13E-1	4.28E-3	-9.65E-1	2.15E+0
ETP-fw	CTUe	5.32E+2	5.01E+1	3.76E+1	6.19E+2	1.33E+1	1.18E+2	8.10E-1	-2.32E+2	5.19E+2
HTP-c	CTUh	2.17E-8	1.68E-9	1.40E-9	2.48E-8	4.72E-10	1.40E-8	2.23E-11	-1.11E-8	2.83E-8
HTP-nc	CTUh	5.16E-7	5.42E-8	3.58E-8	6.06E-7	1.58E-8	1.77E-7	5.15E-10	-2.47E-7	5.52E-7
SQP	Pt	1.12E+2	4.73E+1	1.54E+0	1.61E+2	1.40E+1	8.30E+1	2.36E+0	-5.08E+1	2.09E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.75E+1	6.95E-1	8.02E+1	1.28E+2	2.34E-1	5.12E+0	3.64E-2	-2.31E+1	1.11E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.75E+1	6.95E-1	8.02E+1	1.28E+2	2.34E-1	5.12E+0	3.64E-2	-2.31E+1	1.11E+2
PENRE	MJ	3.09E+3	6.05E+1	1.67E+1	3.17E+3	1.73E+1	1.11E+2	9.75E-1	-1.73E+3	1.57E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.09E+3	6.05E+1	1.67E+1	3.17E+3	1.73E+1	1.11E+2	9.75E-1	-1.73E+3	1.57E+3
PET	MJ	3.14E+3	6.12E+1	9.70E+1	3.30E+3	1.76E+1	1.16E+2	1.01E+0	-1.75E+3	1.68E+3
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	9.56E-1	6.73E-3	2.06E-1	1.17E+0	1.85E-3	6.01E-2	1.14E-3	-4.75E-1	7.57E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.99E-4	1.40E-4	2.60E-5	5.64E-4	4.18E-5	1.69E-4	1.10E-6	-4.76E-4	3.01E-4
NHWD	kg	2.73E+0	3.44E+0	3.25E-2	6.20E+0	1.01E+0	5.12E+0	4.05E+0	-1.30E+0	1.51E+1
RWD	kg	2.61E-3	3.76E-4	6.20E-5	3.05E-3	1.11E-4	3.96E-4	6.01E-6	-8.97E-4	2.67E-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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