Environmental Profile

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

Ecochain v3.5.64

Product:	3011142 - X-Stream PP Pipe BK 600 SN8 L=6 S/SP
Unit:	1 Piece
Manufacturer:	Wavin - SE - Eskilstuna

Wavin X-Stream is a new generation of double-walled pipes and fittings made of polypropylene. The system is suitable for pressureless transport of rainwater and wastewater.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	20-06-2022
End of validity:	20-06-2027
Verifier:	Harry van Ewijk - 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 - SE - Eskilstuna (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	2.37E+2	2.06E+1	7.41E+0	2.65E+2	2.95E+0	8.56E+1	1.39E+0	-1.37E+2	2.18E+2
GWP-f	kg CO2 eq	2.36E+2	2.05E+1	5.37E+0	2.62E+2	2.95E+0	8.57E+1	1.39E+0	-1.37E+2	2.16E+2
GWP-b	kg CO2 eq	5.29E-1	9.34E-3	1.41E+0	1.95E+0	1.79E-3	-1.18E-1	1.21E-3	-4.79E-1	1.36E+0
GWP-luluc	kg CO2 eq	7.22E-2	7.58E-3	6.24E-1	7.04E-1	1.04E-3	1.66E-2	2.36E-5	-2.65E-2	6.95E-1
ODP	kg CFC11 eq	4.88E-6	4.53E-6	6.08E-7	1.00E-5	6.80E-7	2.15E-6	3.49E-8	-5.04E-6	7.84E-6
AP	mol H+ eq	8.58E-1	1.25E-1	4.55E-2	1.03E+0	1.68E-2	9.04E-2	8.31E-4	-3.84E-1	7.52E-1
EP-fw	kg P eq	3.86E-3	2.06E-4	9.91E-5	4.16E-3	2.43E-5	4.78E-4	1.08E-6	-1.51E-3	3.16E-3
EP-m	kg N eq	1.43E-1	4.33E-2	1.35E-2	2.00E-1	6.01E-3	2.63E-2	5.42E-4	-6.79E-2	1.65E-1
EP-T	mol N eq	1.61E+0	4.77E-1	1.48E-1	2.24E+0	6.63E-2	2.89E-1	3.38E-3	-7.51E-1	1.85E+0
POCP	kg NMVOC eq	7.27E-1	1.36E-1	4.11E-2	9.04E-1	1.89E-2	9.15E-2	1.27E-3	-3.47E-1	6.68E-1
ADP-mm	kg Sb eq	3.04E-3	5.17E-4	1.62E-4	3.71E-3	7.63E-5	3.59E-4	8.38E-7	-9.06E-4	3.24E-3
ADP-f	MJ	8.19E+3	3.09E+2	5.34E+1	8.56E+3	4.53E+1	2.87E+2	2.55E+0	-4.31E+3	4.58E+3
WDP	m3 depriv.	1.57E+2	1.10E+0	3.44E+1	1.93E+2	1.39E-1	5.64E+0	1.27E-2	-7.48E+1	1.24E+2
PM	disease inc.	7.38E-6	1.83E-6	7.67E-7	9.98E-6	2.66E-7	1.49E-6	1.75E-8	-3.21E-6	8.54E-6
IR	kBq U-235 eq	4.59E+0	1.30E+0	1.59E-1	6.04E+0	1.98E-1	8.65E-1	1.18E-2	-2.00E+0	5.12E+0
ETP-fw	CTUe	1.42E+3	2.75E+2	1.49E+2	1.85E+3	3.68E+1	3.24E+2	2.13E+0	-5.33E+2	1.68E+3
HTP-c	CTUh	5.42E-8	8.98E-9	5.88E-9	6.90E-8	1.31E-9	3.90E-8	6.21E-11	-2.28E-8	8.66E-8
HTP-nc	CTUh	1.53E-6	3.00E-7	1.60E-7	1.99E-6	4.38E-8	4.82E-7	1.37E-9	-6.46E-7	1.87E-6
SQP	Pt	3.45E+2	2.66E+2	7.02E+0	6.18E+2	3.87E+1	2.30E+2	6.53E+0	-1.16E+2	7.77E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.32E+2	3.86E+0	3.37E+2	4.72E+2	6.50E-1	1.42E+1	9.87E-2	-5.36E+1	4.34E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.32E+2	3.86E+0	3.37E+2	4.72E+2	6.50E-1	1.42E+1	9.87E-2	-5.36E+1	4.34E+2
PENRE	MJ	8.79E+3	3.28E+2	5.67E+1	9.18E+3	4.81E+1	3.06E+2	2.70E+0	-4.65E+3	4.88E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.79E+3	3.28E+2	5.67E+1	9.18E+3	4.81E+1	3.06E+2	2.70E+0	-4.65E+3	4.88E+3
PET	MJ	8.92E+3	3.32E+2	3.93E+2	9.65E+3	4.87E+1	3.20E+2	2.80E+0	-4.70E+3	5.32E+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	2.46E+0	3.75E-2	8.17E-1	3.31E+0	5.12E-3	1.66E-1	3.14E-3	-1.12E+0	2.37E+0

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.29E-3	7.79E-4	8.12E-5	2.15E-3	1.16E-4	4.67E-4	3.07E-6	-9.91E-4	1.74E-3
NHWD	kg	9.72E+0	1.95E+1	2.49E-1	2.94E+1	2.81E+0	1.41E+1	1.12E+1	-3.32E+0	5.42E+1
RWD	kg	3.99E-3	2.03E-3	2.26E-4	6.24E-3	3.08E-4	1.10E-3	1.66E-5	-1.80E-3	5.86E-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

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