Environmental Profile

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

Ecochain v3.5.64

Product:	3062822 - X-Stream PP Pipe BK 400 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	1.01E+2	8.99E+0	3.23E+0	1.13E+2	1.27E+0	3.68E+1	5.99E-1	-7.84E+1	7.32E+1
GWP-f	kg CO2 eq	1.00E+2	8.98E+0	2.34E+0	1.12E+2	1.27E+0	3.69E+1	5.99E-1	-7.82E+1	7.23E+1
GWP-b	kg CO2 eq	2.80E-1	4.08E-3	6.15E-1	8.99E-1	7.71E-4	-5.09E-2	5.21E-4	-2.12E-1	6.37E-1
GWP-luluc	kg CO2 eq	2.95E-2	3.31E-3	2.72E-1	3.05E-1	4.49E-4	7.13E-3	1.02E-5	-1.20E-2	3.00E-1
ODP	kg CFC11 eq	2.00E-6	1.98E-6	2.65E-7	4.24E-6	2.93E-7	9.26E-7	1.50E-8	-4.65E-6	8.25E-7
AP	mol H+ eq	3.62E-1	5.46E-2	1.98E-2	4.37E-1	7.23E-3	3.89E-2	3.58E-4	-1.80E-1	3.03E-1
EP-fw	kg P eq	1.59E-3	9.00E-5	4.32E-5	1.73E-3	1.04E-5	2.06E-4	4.66E-7	-6.72E-4	1.27E-3
EP-m	kg N eq	6.03E-2	1.89E-2	5.87E-3	8.51E-2	2.59E-3	1.13E-2	2.33E-4	-3.37E-2	6.55E-2
EP-T	mol N eq	6.80E-1	2.09E-1	6.44E-2	9.53E-1	2.85E-2	1.25E-1	1.45E-3	-3.73E-1	7.35E-1
POCP	kg NMVOC eq	3.09E-1	5.93E-2	1.79E-2	3.86E-1	8.15E-3	3.94E-2	5.46E-4	-1.66E-1	2.68E-1
ADP-mm	kg Sb eq	1.30E-3	2.26E-4	7.04E-5	1.60E-3	3.28E-5	1.54E-4	3.61E-7	-3.95E-4	1.39E-3
ADP-f	MJ	3.51E+3	1.35E+2	2.32E+1	3.67E+3	1.95E+1	1.24E+2	1.10E+0	-2.17E+3	1.64E+3
WDP	m3 depriv.	6.78E+1	4.81E-1	1.50E+1	8.32E+1	5.98E-2	2.43E+0	5.45E-3	-3.28E+1	5.29E+1
PM	disease inc.	3.13E-6	8.01E-7	3.34E-7	4.26E-6	1.15E-7	6.42E-7	7.53E-9	-1.43E-6	3.59E-6
IR	kBq U-235 eq	1.92E+0	5.67E-1	6.91E-2	2.55E+0	8.52E-2	3.72E-1	5.08E-3	-9.75E-1	2.04E+0
ETP-fw	CTUe	5.84E+2	1.20E+2	6.48E+1	7.69E+2	1.58E+1	1.39E+2	9.17E-1	-2.46E+2	6.79E+2
HTP-c	CTUh	2.29E-8	3.93E-9	2.56E-9	2.94E-8	5.63E-10	1.68E-8	2.67E-11	-1.12E-8	3.55E-8
HTP-nc	CTUh	6.46E-7	1.31E-7	6.98E-8	8.47E-7	1.89E-8	2.08E-7	5.90E-10	-2.95E-7	7.80E-7
SQP	Pt	1.40E+2	1.16E+2	3.06E+0	2.60E+2	1.67E+1	9.88E+1	2.81E+0	-5.38E+1	3.24E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.48E+1	1.69E+0	1.47E+2	2.03E+2	2.80E-1	6.10E+0	4.25E-2	-2.40E+1	1.86E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.48E+1	1.69E+0	1.47E+2	2.03E+2	2.80E-1	6.10E+0	4.25E-2	-2.40E+1	1.86E+2
PENRE	MJ	3.76E+3	1.44E+2	2.47E+1	3.93E+3	2.07E+1	1.32E+2	1.16E+0	-2.35E+3	1.73E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.76E+3	1.44E+2	2.47E+1	3.93E+3	2.07E+1	1.32E+2	1.16E+0	-2.35E+3	1.73E+3
PET	MJ	3.82E+3	1.45E+2	1.71E+2	4.13E+3	2.10E+1	1.38E+2	1.20E+0	-2.38E+3	1.92E+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	1.05E+0	1.64E-2	3.56E-1	1.42E+0	2.21E-3	7.13E-2	1.35E-3	-4.92E-1	1.00E+0

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.16E-4	3.41E-4	3.54E-5	8.92E-4	4.98E-5	2.01E-4	1.32E-6	-8.20E-4	3.24E-4
NHWD	kg	4.03E+0	8.50E+0	1.08E-1	1.26E+1	1.21E+0	6.06E+0	4.83E+0	-1.54E+0	2.32E+1
RWD	kg	1.66E-3	8.88E-4	9.84E-5	2.65E-3	1.33E-4	4.72E-4	7.15E-6	-9.39E-4	2.32E-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