Environmental Profile

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

Ecochain v3.5.80

Product:	3011243 - X-Stream Click Inlet 160SW/300 VI BK
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

Wavin X-Stream is a new generation of double-walled pipes and □ttings made of polypropylene. The system is

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	08-06-2023
End of validity:	08-06-2028
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 - PL -Buk - Extra products (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 EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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	5.34E+0	1.42E-2	1.45E-4	5.36E+0	6.71E-2	3.77E+0	2.30E-2	-3.12E+0	6.10E+0
GWP-f	kg CO2 eq	6.38E+0	1.42E-2	1.46E-4	6.40E+0	6.71E-2	2.57E+0	2.30E-2	-3.36E+0	5.69E+0
GWP-b	kg CO2 eq	-1.05E+0	8.64E-6	-1.54E-6	-1.05E+0	4.07E-5	1.20E+0	2.86E-5	2.46E-1	4.01E-1
GWP-luluc	kg CO2 eq	6.54E-3	5.04E-6	1.49E-7	6.54E-3	2.37E-5	8.17E-4	5.56E-7	-4.20E-3	3.19E-3
ODP	kg CFC11 eq	2.95E-6	3.28E-9	8.26E-12	2.96E-6	1.55E-8	2.28E-7	8.28E-10	-1.40E-6	1.81E-6
AP	mol H+ eq	2.98E-2	8.10E-5	1.47E-6	2.98E-2	3.82E-4	3.98E-3	2.01E-5	-1.28E-2	2.14E-2
EP-fw	kg P eq	2.69E-4	1.17E-7	8.24E-9	2.69E-4	5.52E-7	2.74E-5	2.56E-8	-1.30E-4	1.67E-4
EP-m	kg N eq	5.26E-3	2.90E-5	1.55E-7	5.29E-3	1.37E-4	9.99E-4	1.50E-5	-2.42E-3	4.01E-3
EP-T	mol N eq	5.66E-2	3.20E-4	1.85E-6	5.69E-2	1.51E-3	1.10E-2	8.03E-5	-2.64E-2	4.31E-2
POCP	kg NMVOC eq	2.01E-2	9.13E-5	6.28E-7	2.02E-2	4.31E-4	3.27E-3	2.78E-5	-8.96E-3	1.50E-2
ADP-mm	kg Sb eq	4.03E-4	3.68E-7	1.97E-8	4.03E-4	1.74E-6	1.54E-5	1.98E-8	-6.69E-5	3.54E-4
ADP-f	MJ	1.60E+2	2.18E-1	1.36E-3	1.61E+2	1.03E+0	1.05E+1	6.05E-2	-7.84E+1	9.38E+1
WDP	m3 depriv.	8.89E+0	6.70E-4	5.22E-5	8.89E+0	3.16E-3	4.16E-1	2.82E-4	-4.31E+0	5.00E+0
PM	disease inc.	2.47E-7	1.28E-9	9.08E-12	2.48E-7	6.06E-9	4.86E-8	4.16E-10	-1.13E-7	1.90E-7
IR	kBq U-235 eq	3.48E-1	9.55E-4	1.02E-6	3.49E-1	4.50E-3	3.73E-2	2.81E-4	-1.51E-1	2.39E-1
ETP-fw	CTUe	1.41E+2	1.77E-1	1.21E-2	1.41E+2	8.36E-1	8.11E+1	8.93E-1	-6.28E+1	1.61E+2
HTP-c	CTUh	4.46E-9	6.31E-12	6.17E-13	4.46E-9	2.98E-11	1.13E-9	1.59E-12	-1.98E-9	3.65E-9
HTP-nc	CTUh	1.32E-7	2.11E-10	1.57E-11	1.32E-7	9.97E-10	2.83E-8	1.73E-10	-5.77E-8	1.04E-7
SQP	Pt	1.23E+2	1.87E-1	2.24E-3	1.23E+2	8.81E-1	6.42E+0	1.55E-1	-1.32E+2	-1.84E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.74E+1	3.13E-3	2.40E-2	3.74E+1	1.48E-2	7.53E-1	2.36E-3	-2.31E+1	1.51E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.74E+1	3.13E-3	2.40E-2	3.74E+1	1.48E-2	7.53E-1	2.36E-3	-2.31E+1	1.51E+1
PENRE	MJ	1.72E+2	2.32E-1	1.44E-3	1.72E+2	1.09E+0	1.12E+1	6.41E-2	-8.46E+1	9.99E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.72E+2	2.32E-1	1.44E-3	1.72E+2	1.09E+0	1.12E+1	6.41E-2	-8.46E+1	9.99E+1
PET	MJ	2.09E+2	2.35E-1	2.55E-2	2.10E+2	1.11E+0	1.19E+1	6.65E-2	-1.08E+2	1.15E+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	1.06E-1	2.47E-5	1.46E-6	1.06E-1	1.17E-4	1.21E-2	7.47E-5	-5.28E-2	6.51E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.28E-4	5.58E-7	2.73E-13	1.29E-4	2.63E-6	1.76E-5	7.26E-8	-6.96E-5	7.97E-5
NHWD	kg	6.42E-1	1.35E-2	1.05E-6	6.55E-1	6.38E-2	3.99E-1	2.67E-1	-2.71E-1	1.11E+0
RWD	kg	3.37E-4	1.49E-6	1.10E-13	3.39E-4	7.00E-6	4.02E-5	3.95E-7	-1.38E-4	2.48E-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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