Environmental Profile

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

Ecochain v3.5.80

Product:	3041485 - X-Stream PP End Cap BK 800
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	1.51E+1	6.84E-1	2.14E-2	1.58E+1	5.57E-1	5.14E+1	2.62E-1	-3.04E+1	3.77E+1
GWP-f	kg CO2 eq	4.99E+1	6.83E-1	2.16E-2	5.06E+1	5.57E-1	1.64E+1	2.63E-1	-3.03E+1	3.75E+1
GWP-b	kg CO2 eq	-3.48E+1	4.15E-4	-2.28E-4	-3.48E+1	3.38E-4	3.51E+1	2.29E-4	-9.14E-2	2.34E-1
GWP-luluc	kg CO2 eq	2.98E-2	2.42E-4	2.21E-5	3.00E-2	1.97E-4	3.22E-3	4.47E-6	-2.18E-2	1.17E-2
ODP	kg CFC11 eq	1.84E-6	1.57E-7	1.22E-9	2.00E-6	1.28E-7	4.45E-7	6.58E-9	-1.64E-6	9.37E-7
AP	mol H+ eq	1.89E-1	3.89E-3	2.18E-4	1.93E-1	3.17E-3	1.85E-2	1.57E-4	-1.04E-1	1.12E-1
EP-fw	kg P eq	8.83E-4	5.62E-6	1.22E-6	8.89E-4	4.58E-6	9.31E-5	2.05E-7	-5.11E-4	4.76E-4
EP-m	kg N eq	3.52E-2	1.39E-3	2.29E-5	3.66E-2	1.13E-3	5.52E-3	1.02E-4	-2.13E-2	2.21E-2
EP-T	mol N eq	3.94E-1	1.53E-2	2.74E-4	4.10E-1	1.25E-2	6.09E-2	6.38E-4	-2.41E-1	2.42E-1
POCP	kg NMVOC eq	1.75E-1	4.39E-3	9.27E-5	1.79E-1	3.58E-3	1.90E-2	2.39E-4	-1.01E-1	1.01E-1
ADP-mm	kg Sb eq	6.14E-4	1.77E-5	2.90E-6	6.34E-4	1.44E-5	7.19E-5	1.58E-7	-2.55E-4	4.65E-4
ADP-f	MJ	1.64E+3	1.05E+1	2.00E-1	1.65E+3	8.55E+0	5.71E+1	4.81E-1	-8.90E+2	8.28E+2
WDP	m3 depriv.	3.13E+1	3.22E-2	7.71E-3	3.13E+1	2.62E-2	1.08E+0	2.45E-3	-1.56E+1	1.68E+1
PM	disease inc.	2.11E-6	6.17E-8	1.34E-9	2.17E-6	5.03E-8	3.00E-7	3.30E-9	-1.23E-6	1.29E-6
IR	kBq U-235 eq	1.12E+0	4.58E-2	1.50E-4	1.16E+0	3.74E-2	1.77E-1	2.23E-3	-6.12E-1	7.67E-1
ETP-fw	CTUe	3.80E+2	8.52E+0	1.78E+0	3.90E+2	6.94E+0	6.36E+1	4.02E-1	-2.39E+2	2.22E+2
HTP-c	CTUh	2.62E-8	3.03E-10	9.11E-11	2.66E-8	2.47E-10	7.94E-9	1.18E-11	-1.70E-8	1.78E-8
HTP-nc	CTUh	4.10E-7	1.02E-8	2.31E-9	4.22E-7	8.27E-9	9.51E-8	2.59E-10	-2.30E-7	2.95E-7
SQP	Pt	2.99E+3	8.97E+0	3.31E-1	2.99E+3	7.31E+0	4.55E+1	1.23E+0	-2.48E+3	5.65E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.82E+2	1.50E-1	3.55E+0	4.86E+2	1.23E-1	2.76E+0	1.86E-2	-3.79E+2	1.10E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.82E+2	1.50E-1	3.55E+0	4.86E+2	1.23E-1	2.76E+0	1.86E-2	-3.79E+2	1.10E+2
PENRE	MJ	1.76E+3	1.11E+1	2.13E-1	1.77E+3	9.07E+0	6.08E+1	5.10E-1	-9.59E+2	8.85E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.76E+3	1.11E+1	2.13E-1	1.77E+3	9.07E+0	6.08E+1	5.10E-1	-9.59E+2	8.85E+2
PET	MJ	2.24E+3	1.13E+1	3.76E+0	2.26E+3	9.20E+0	6.35E+1	5.29E-1	-1.34E+3	9.95E+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	4.93E-1	1.19E-3	2.16E-4	4.94E-1	9.67E-4	3.26E-2	5.93E-4	-2.53E-1	2.76E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.35E-4	2.68E-5	4.03E-11	4.61E-4	2.19E-5	9.48E-5	5.80E-7	-3.81E-4	1.97E-4
NHWD	kg	3.23E+0	6.50E-1	1.56E-4	3.88E+0	5.30E-1	2.82E+0	2.12E+0	-2.01E+0	7.34E+0
RWD	kg	1.12E-3	7.13E-5	1.62E-11	1.19E-3	5.81E-5	2.26E-4	3.14E-6	-6.14E-4	8.62E-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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