Environmental Profile

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

Ecochain v3.5.80

Product:	3011093 - X-Stream Coupler BK 400x400PVC S/PL
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	4.58E+0	1.08E-1	3.89E-1	5.07E+0	1.15E-1	8.94E+0	5.43E-2	-6.07E+0	8.11E+0
GWP-f	kg CO2 eq	1.01E+1	1.08E-1	3.92E-1	1.06E+1	1.15E-1	3.38E+0	5.43E-2	-6.05E+0	8.07E+0
GWP-b	kg CO2 eq	-5.50E+0	6.53E-5	-4.14E-3	-5.50E+0	7.00E-5	5.56E+0	4.73E-5	-1.89E-2	4.15E-2
GWP-luluc	kg CO2 eq	5.29E-3	3.81E-5	4.01E-4	5.73E-3	4.08E-5	6.61E-4	9.22E-7	-3.69E-3	2.74E-3
ODP	kg CFC11 eq	3.38E-7	2.48E-8	2.22E-8	3.85E-7	2.65E-8	9.02E-8	1.36E-9	-3.07E-7	1.96E-7
AP	mol H+ eq	3.78E-2	6.13E-4	3.96E-3	4.24E-2	6.56E-4	3.76E-3	3.25E-5	-1.99E-2	2.69E-2
EP-fw	kg P eq	1.72E-4	8.85E-7	2.21E-5	1.95E-4	9.48E-7	1.91E-5	4.23E-8	-9.49E-5	1.21E-4
EP-m	kg N eq	6.87E-3	2.19E-4	4.16E-4	7.50E-3	2.35E-4	1.12E-3	2.12E-5	-3.99E-3	4.88E-3
EP-T	mol N eq	7.75E-2	2.42E-3	4.98E-3	8.49E-2	2.59E-3	1.23E-2	1.32E-4	-4.51E-2	5.48E-2
POCP	kg NMVOC eq	3.44E-2	6.91E-4	1.68E-3	3.67E-2	7.40E-4	3.85E-3	4.95E-5	-1.92E-2	2.21E-2
ADP-mm	kg Sb eq	1.48E-4	2.78E-6	5.28E-5	2.04E-4	2.98E-6	1.47E-5	3.27E-8	-4.87E-5	1.73E-4
ADP-f	MJ	3.35E+2	1.65E+0	3.64E+0	3.41E+2	1.77E+0	1.17E+1	9.94E-2	-1.81E+2	1.74E+2
WDP	m3 depriv.	6.42E+0	5.07E-3	1.40E-1	6.56E+0	5.43E-3	2.23E-1	4.95E-4	-3.16E+0	3.63E+0
PM	disease inc.	4.03E-7	9.71E-9	2.44E-8	4.37E-7	1.04E-8	6.11E-8	6.83E-10	-2.25E-7	2.84E-7
IR	kBq U-235 eq	2.16E-1	7.22E-3	2.73E-3	2.26E-1	7.73E-3	3.59E-2	4.61E-4	-1.15E-1	1.55E-1
ETP-fw	CTUe	7.36E+1	1.34E+0	3.24E+1	1.07E+2	1.44E+0	1.30E+1	8.32E-2	-4.28E+1	7.92E+1
HTP-c	CTUh	4.84E-9	4.77E-11	1.66E-9	6.55E-9	5.11E-11	1.61E-9	2.42E-12	-2.90E-9	5.31E-9
HTP-nc	CTUh	8.16E-8	1.60E-9	4.20E-8	1.25E-7	1.71E-9	1.95E-8	5.35E-11	-4.24E-8	1.04E-7
SQP	Pt	4.77E+2	1.41E+0	6.01E+0	4.85E+2	1.51E+0	9.31E+0	2.55E-1	-3.95E+2	1.01E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.09E+1	2.37E-2	6.45E+1	1.45E+2	2.54E-2	5.67E-1	3.85E-3	-6.06E+1	8.54E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.09E+1	2.37E-2	6.45E+1	1.45E+2	2.54E-2	5.67E-1	3.85E-3	-6.06E+1	8.54E+1
PENRE	MJ	3.60E+2	1.75E+0	3.88E+0	3.66E+2	1.88E+0	1.24E+1	1.05E-1	-1.94E+2	1.85E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.60E+2	1.75E+0	3.88E+0	3.66E+2	1.88E+0	1.24E+1	1.05E-1	-1.94E+2	1.85E+2
PET	MJ	4.41E+2	1.78E+0	6.84E+1	5.11E+2	1.90E+0	1.30E+1	1.09E-1	-2.55E+2	2.71E+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	1.00E-1	1.87E-4	3.92E-3	1.04E-1	2.00E-4	6.68E-3	1.23E-4	-5.02E-2	6.09E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.24E-5	4.22E-6	7.33E-10	8.66E-5	4.52E-6	1.93E-5	1.20E-7	-6.96E-5	4.09E-5
NHWD	kg	6.28E-1	1.02E-1	2.83E-3	7.34E-1	1.10E-1	5.76E-1	4.38E-1	-3.49E-1	1.51E+0
RWD	kg	2.12E-4	1.12E-5	2.94E-10	2.23E-4	1.20E-5	4.58E-5	6.49E-7	-1.14E-4	1.68E-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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