Environmental Profile

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

Ecochain v3.5.80

Product:	3065866 - X-Stream Coupler BK 150x160PVC 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	5.36E-1	2.02E-2	1.14E-1	6.70E-1	7.04E-3	7.01E-1	3.30E-3	-4.01E-1	9.80E-1
GWP-f	kg CO2 eq	8.73E-1	2.02E-2	1.15E-1	1.01E+0	7.03E-3	3.26E-1	3.30E-3	-4.74E-1	8.70E-1
GWP-b	kg CO2 eq	-3.38E-1	1.23E-5	-1.21E-3	-3.39E-1	4.27E-6	3.75E-1	2.89E-6	7.41E-2	1.09E-1
GWP-luluc	kg CO2 eq	1.15E-3	7.16E-6	1.17E-4	1.28E-3	2.49E-6	4.32E-5	5.68E-8	-7.59E-4	5.62E-4
ODP	kg CFC11 eq	3.87E-8	4.66E-9	6.49E-9	4.98E-8	1.62E-9	6.85E-9	8.32E-11	-3.66E-8	2.18E-8
AP	mol H+ eq	3.56E-3	1.15E-4	1.16E-3	4.83E-3	4.00E-5	2.85E-4	1.99E-6	-1.64E-3	3.52E-3
EP-fw	kg P eq	1.91E-5	1.66E-7	6.47E-6	2.57E-5	5.79E-8	1.28E-6	2.60E-9	-1.28E-5	1.43E-5
EP-m	kg N eq	7.05E-4	4.12E-5	1.22E-4	8.68E-4	1.43E-5	8.96E-5	1.39E-6	-3.44E-4	6.29E-4
EP-T	mol N eq	7.74E-3	4.54E-4	1.46E-3	9.65E-3	1.58E-4	9.85E-4	8.06E-6	-3.90E-3	6.90E-3
POCP	kg NMVOC eq	3.02E-3	1.30E-4	4.93E-4	3.65E-3	4.51E-5	3.03E-4	3.02E-6	-1.47E-3	2.53E-3
ADP-mm	kg Sb eq	1.43E-5	5.23E-7	1.55E-5	3.03E-5	1.82E-7	1.08E-6	2.00E-9	-3.68E-6	2.78E-5
ADP-f	MJ	2.56E+1	3.10E-1	1.07E+0	2.70E+1	1.08E-1	8.03E-1	6.07E-3	-1.27E+1	1.52E+1
WDP	m3 depriv.	5.52E-1	9.53E-4	4.10E-2	5.94E-1	3.31E-4	1.45E-2	3.16E-5	-3.17E-1	2.92E-1
PM	disease inc.	3.82E-8	1.83E-9	7.14E-9	4.71E-8	6.35E-10	4.47E-9	4.17E-11	-2.11E-8	3.12E-8
IR	kBq U-235 eq	2.07E-2	1.36E-3	8.00E-4	2.29E-2	4.72E-4	2.58E-3	2.82E-5	-1.24E-2	1.35E-2
ETP-fw	CTUe	1.63E+1	2.52E-1	9.50E+0	2.61E+1	8.76E-2	1.01E+0	5.38E-3	-8.53E+0	1.87E+1
HTP-c	CTUh	4.15E-10	8.97E-12	4.85E-10	9.09E-10	3.12E-12	1.25E-10	1.50E-13	-2.31E-10	8.07E-10
HTP-nc	CTUh	8.00E-9	3.01E-10	1.23E-8	2.06E-8	1.04E-10	1.44E-9	3.35E-12	-4.33E-9	1.78E-8
SQP	Pt	3.32E+1	2.66E-1	1.76E+0	3.52E+1	9.23E-2	6.25E-1	1.56E-2	-3.78E+1	-1.90E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.87E+0	4.45E-3	1.89E+1	2.58E+1	1.55E-3	3.76E-2	2.36E-4	-6.18E+0	1.96E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.87E+0	4.45E-3	1.89E+1	2.58E+1	1.55E-3	3.76E-2	2.36E-4	-6.18E+0	1.96E+1
PENRE	MJ	2.75E+1	3.30E-1	1.13E+0	2.89E+1	1.15E-1	8.56E-1	6.44E-3	-1.37E+1	1.62E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.75E+1	3.30E-1	1.13E+0	2.89E+1	1.15E-1	8.56E-1	6.44E-3	-1.37E+1	1.62E+1
PET	MJ	3.43E+1	3.34E-1	2.00E+1	5.47E+1	1.16E-1	8.93E-1	6.68E-3	-1.99E+1	3.58E+1
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	1.04E-2	3.51E-5	1.15E-3	1.16E-2	1.22E-5	4.62E-4	7.49E-6	-6.08E-3	5.99E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.88E-6	7.94E-7	2.15E-10	8.67E-6	2.76E-7	1.43E-6	7.32E-9	-6.58E-6	3.81E-6
NHWD	kg	6.76E-2	1.92E-2	8.28E-4	8.76E-2	6.69E-3	4.39E-2	2.67E-2	-2.84E-2	1.37E-1
RWD	kg	2.08E-5	2.11E-6	8.61E-11	2.29E-5	7.34E-7	3.35E-6	3.96E-8	-1.22E-5	1.49E-5
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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