Environmental Profile

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

Ecochain v3.5.80

Product:	3028278 - X-Stream Coupler BK 600x630PVC 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	1.07E+1	5.53E-1	4.80E-2	1.13E+1	3.45E-1	3.22E+1	1.63E-1	-1.89E+1	2.51E+1
GWP-f	kg CO2 eq	3.25E+1	5.53E-1	4.84E-2	3.31E+1	3.45E-1	1.01E+1	1.63E-1	-1.88E+1	2.49E+1
GWP-b	kg CO2 eq	-2.18E+1	3.36E-4	-5.11E-4	-2.18E+1	2.09E-4	2.20E+1	1.42E-4	-5.65E-2	1.72E-1
GWP-luluc	kg CO2 eq	2.83E-2	1.96E-4	4.95E-5	2.85E-2	1.22E-4	1.99E-3	2.76E-6	-1.36E-2	1.70E-2
ODP	kg CFC11 eq	1.24E-6	1.27E-7	2.74E-9	1.37E-6	7.95E-8	2.76E-7	4.08E-9	-1.01E-6	7.24E-7
AP	mol H+ eq	1.27E-1	3.15E-3	4.89E-4	1.31E-1	1.97E-3	1.15E-2	9.72E-5	-6.45E-2	7.99E-2
EP-fw	kg P eq	5.88E-4	4.55E-6	2.73E-6	5.96E-4	2.84E-6	5.77E-5	1.27E-7	-3.18E-4	3.38E-4
EP-m	kg N eq	2.40E-2	1.13E-3	5.14E-5	2.52E-2	7.03E-4	3.42E-3	6.34E-5	-1.32E-2	1.61E-2
EP-T	mol N eq	2.72E-1	1.24E-2	6.14E-4	2.85E-1	7.75E-3	3.78E-2	3.95E-4	-1.50E-1	1.80E-1
POCP	kg NMVOC eq	1.16E-1	3.55E-3	2.08E-4	1.20E-1	2.22E-3	1.18E-2	1.48E-4	-6.31E-2	7.10E-2
ADP-mm	kg Sb eq	5.51E-4	1.43E-5	6.52E-6	5.72E-4	8.92E-6	4.46E-5	9.80E-8	-1.58E-4	4.67E-4
ADP-f	MJ	1.05E+3	8.49E+0	4.49E-1	1.06E+3	5.30E+0	3.54E+1	2.98E-1	-5.53E+2	5.51E+2
WDP	m3 depriv.	2.11E+1	2.60E-2	1.73E-2	2.11E+1	1.63E-2	6.69E-1	1.49E-3	-9.67E+0	1.21E+1
PM	disease inc.	1.40E-6	4.99E-8	3.01E-9	1.45E-6	3.11E-8	1.86E-7	2.05E-9	-7.70E-7	8.99E-7
IR	kBq U-235 eq	7.40E-1	3.71E-2	3.37E-4	7.77E-1	2.31E-2	1.10E-1	1.38E-3	-3.80E-1	5.31E-1
ETP-fw	CTUe	2.63E+2	6.89E+0	4.00E+0	2.74E+2	4.30E+0	3.95E+1	2.49E-1	-1.49E+2	1.69E+2
HTP-c	CTUh	1.80E-8	2.45E-10	2.04E-10	1.85E-8	1.53E-10	4.91E-9	7.27E-12	-1.06E-8	1.29E-8
HTP-nc	CTUh	2.87E-7	8.21E-9	5.19E-9	3.00E-7	5.13E-9	5.89E-8	1.60E-10	-1.43E-7	2.21E-7
SQP	Pt	1.89E+3	7.26E+0	7.42E-1	1.90E+3	4.53E+0	2.82E+1	7.64E-1	-1.56E+3	3.70E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.21E+2	1.22E-1	7.96E+0	3.29E+2	7.60E-2	1.71E+0	1.15E-2	-2.38E+2	9.25E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.21E+2	1.22E-1	7.96E+0	3.29E+2	7.60E-2	1.71E+0	1.15E-2	-2.38E+2	9.25E+1
PENRE	MJ	1.13E+3	9.01E+0	4.78E-1	1.14E+3	5.62E+0	3.77E+1	3.16E-1	-5.95E+2	5.88E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.13E+3	9.01E+0	4.78E-1	1.14E+3	5.62E+0	3.77E+1	3.16E-1	-5.95E+2	5.88E+2
PET	MJ	1.45E+3	9.13E+0	8.44E+0	1.47E+3	5.70E+0	3.94E+1	3.27E-1	-8.33E+2	6.81E+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	3.43E-1	9.60E-4	4.83E-4	3.44E-1	5.99E-4	2.02E-2	3.67E-4	-1.57E-1	2.09E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.13E-4	2.17E-5	9.05E-11	3.35E-4	1.35E-5	5.88E-5	3.59E-7	-2.38E-4	1.70E-4
NHWD	kg	2.44E+0	5.26E-1	3.49E-4	2.97E+0	3.28E-1	1.75E+0	1.31E+0	-1.25E+0	5.10E+0
RWD	kg	7.43E-4	5.77E-5	3.63E-11	8.01E-4	3.60E-5	1.40E-4	1.94E-6	-3.82E-4	5.97E-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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