Environmental Profile

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

Ecochain v3.5.80

Product:	3043153 - 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	5.99E-1	1.95E-2	5.66E-3	6.24E-1	6.97E-3	2.20E-1	3.27E-3	-3.35E-1	5.20E-1
GWP-f	kg CO2 eq	5.95E-1	1.95E-2	5.71E-3	6.20E-1	6.96E-3	2.21E-1	3.27E-3	-3.34E-1	5.17E-1
GWP-b	kg CO2 eq	3.76E-3	1.19E-5	-6.03E-5	3.71E-3	4.23E-6	-2.79E-4	2.86E-6	-1.19E-3	2.25E-3
GWP-luluc	kg CO2 eq	4.70E-4	6.91E-6	5.84E-6	4.83E-4	2.47E-6	3.93E-5	5.63E-8	-7.00E-5	4.55E-4
ODP	kg CFC11 eq	1.87E-8	4.50E-9	3.23E-10	2.35E-8	1.61E-9	5.16E-9	8.24E-11	-2.05E-8	9.87E-9
AP	mol H+ eq	2.25E-3	1.11E-4	5.76E-5	2.42E-3	3.97E-5	2.17E-4	1.97E-6	-9.30E-4	1.75E-3
EP-fw	kg P eq	9.41E-6	1.61E-7	3.22E-7	9.89E-6	5.73E-8	1.14E-6	2.58E-9	-3.98E-6	7.11E-6
EP-m	kg N eq	3.80E-4	3.98E-5	6.06E-6	4.26E-4	1.42E-5	6.35E-5	1.37E-6	-1.65E-4	3.40E-4
EP-T	mol N eq	4.34E-3	4.39E-4	7.24E-5	4.85E-3	1.56E-4	6.99E-4	7.99E-6	-1.82E-3	3.89E-3
POCP	kg NMVOC eq	1.89E-3	1.25E-4	2.45E-5	2.04E-3	4.47E-5	2.20E-4	2.99E-6	-8.26E-4	1.48E-3
ADP-mm	kg Sb eq	1.17E-5	5.05E-7	7.69E-7	1.30E-5	1.80E-7	8.52E-7	1.98E-9	-2.36E-6	1.17E-5
ADP-f	MJ	2.02E+1	3.00E-1	5.30E-2	2.05E+1	1.07E-1	6.83E-1	6.02E-3	-1.03E+1	1.11E+1
WDP	m3 depriv.	4.10E-1	9.20E-4	2.04E-3	4.13E-1	3.28E-4	1.34E-2	3.14E-5	-1.91E-1	2.36E-1
PM	disease inc.	2.00E-8	1.76E-9	3.55E-10	2.21E-8	6.29E-10	3.55E-9	4.14E-11	-7.61E-9	1.87E-8
IR	kBq U-235 eq	1.22E-2	1.31E-3	3.98E-5	1.36E-2	4.67E-4	2.06E-3	2.79E-5	-5.28E-3	1.09E-2
ETP-fw	CTUe	4.35E+0	2.43E-1	4.72E-1	5.06E+0	8.68E-2	7.84E-1	5.33E-3	-1.43E+0	4.51E+0
HTP-c	CTUh	1.91E-10	8.66E-12	2.41E-11	2.24E-10	3.09E-12	9.56E-11	1.48E-13	-6.02E-11	2.63E-10
HTP-nc	CTUh	5.00E-9	2.90E-10	6.12E-10	5.90E-9	1.03E-10	1.17E-9	3.32E-12	-1.75E-9	5.42E-9
SQP	Pt	1.15E+0	2.57E-1	8.75E-2	1.49E+0	9.15E-2	5.45E-1	1.54E-2	-3.05E-1	1.84E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.99E+0	4.30E-3	9.39E-1	2.93E+0	1.53E-3	3.37E-2	2.34E-4	-1.37E-1	2.83E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.99E+0	4.30E-3	9.39E-1	2.93E+0	1.53E-3	3.37E-2	2.34E-4	-1.37E-1	2.83E+0
PENRE	MJ	2.17E+1	3.18E-1	5.64E-2	2.20E+1	1.14E-1	7.27E-1	6.38E-3	-1.11E+1	1.18E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.17E+1	3.18E-1	5.64E-2	2.20E+1	1.14E-1	7.27E-1	6.38E-3	-1.11E+1	1.18E+1
PET	MJ	2.36E+1	3.23E-1	9.96E-1	2.50E+1	1.15E-1	7.61E-1	6.62E-3	-1.12E+1	1.46E+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	6.63E-3	3.39E-5	5.70E-5	6.72E-3	1.21E-5	3.97E-4	7.42E-6	-2.76E-3	4.38E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.51E-6	7.67E-7	1.07E-11	4.27E-6	2.73E-7	1.12E-6	7.26E-9	-2.79E-6	2.89E-6
NHWD	kg	3.10E-2	1.86E-2	4.12E-5	4.96E-2	6.63E-3	3.43E-2	2.65E-2	-8.73E-3	1.08E-1
RWD	kg	1.19E-5	2.04E-6	4.28E-12	1.39E-5	7.27E-7	2.61E-6	3.93E-8	-4.77E-6	1.25E-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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