Environmental Profile

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

Ecochain v3.5.80

Product:	3043192 - X-Stream Coupler BK 100x110PVC 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	3.14E-1	3.66E-4	1.45E-4	3.15E-1	4.42E-3	2.53E-1	2.08E-3	-2.23E-1	3.51E-1
GWP-f	kg CO2 eq	4.11E-1	3.65E-4	1.46E-4	4.12E-1	4.42E-3	1.46E-1	2.08E-3	-2.37E-1	3.27E-1
GWP-b	kg CO2 eq	-9.74E-2	2.22E-7	-1.54E-6	-9.74E-2	2.68E-6	1.07E-1	1.81E-6	1.45E-2	2.40E-2
GWP-luluc	kg CO2 eq	2.99E-4	1.29E-7	1.49E-7	2.99E-4	1.56E-6	2.57E-5	3.57E-8	-2.08E-4	1.19E-4
ODP	kg CFC11 eq	1.51E-8	8.42E-11	8.26E-12	1.52E-8	1.02E-9	3.64E-9	5.23E-11	-1.29E-8	7.05E-9
AP	mol H+ eq	1.61E-3	2.08E-6	1.47E-6	1.61E-3	2.52E-5	1.52E-4	1.25E-6	-7.57E-4	1.03E-3
EP-fw	kg P eq	8.26E-6	3.01E-9	8.24E-9	8.27E-6	3.64E-8	7.49E-7	1.63E-9	-4.48E-6	4.58E-6
EP-m	kg N eq	2.90E-4	7.44E-7	1.55E-7	2.91E-4	9.01E-6	4.55E-5	8.09E-7	-1.48E-4	1.99E-4
EP-T	mol N eq	3.20E-3	8.20E-6	1.85E-6	3.21E-3	9.92E-5	5.01E-4	5.06E-6	-1.66E-3	2.16E-3
POCP	kg NMVOC eq	1.36E-3	2.35E-6	6.28E-7	1.36E-3	2.84E-5	1.57E-4	1.90E-6	-6.86E-4	8.61E-4
ADP-mm	kg Sb eq	6.45E-6	9.45E-9	1.97E-8	6.48E-6	1.14E-7	5.94E-7	1.26E-9	-1.75E-6	5.44E-6
ADP-f	MJ	1.34E+1	5.61E-3	1.36E-3	1.34E+1	6.78E-2	4.59E-1	3.82E-3	-6.99E+0	6.91E+0
WDP	m3 depriv.	2.64E-1	1.72E-5	5.22E-5	2.64E-1	2.08E-4	8.68E-3	2.02E-5	-1.44E-1	1.29E-1
PM	disease inc.	1.60E-8	3.30E-11	9.08E-12	1.60E-8	3.99E-10	2.45E-9	2.62E-11	-8.27E-9	1.07E-8
IR	kBq U-235 eq	9.10E-3	2.45E-5	1.02E-6	9.13E-3	2.96E-4	1.42E-3	1.77E-5	-4.85E-3	6.02E-3
ETP-fw	CTUe	5.55E+0	4.55E-3	1.21E-2	5.57E+0	5.51E-2	5.34E-1	3.19E-3	-2.55E+0	3.61E+0
HTP-c	CTUh	1.87E-10	1.62E-13	6.17E-13	1.88E-10	1.96E-12	6.53E-11	9.39E-14	-8.12E-11	1.74E-10
HTP-nc	CTUh	4.10E-9	5.43E-12	1.57E-11	4.12E-9	6.57E-11	7.84E-10	2.06E-12	-1.56E-9	3.41E-9
SQP	Pt	9.63E+0	4.80E-3	2.24E-3	9.63E+0	5.80E-2	3.63E-1	9.79E-3	-1.02E+1	-9.91E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.19E+0	8.04E-5	2.40E-2	3.21E+0	9.73E-4	2.21E-2	1.47E-4	-1.68E+0	1.56E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.19E+0	8.04E-5	2.40E-2	3.21E+0	9.73E-4	2.21E-2	1.47E-4	-1.68E+0	1.56E+0
PENRE	MJ	1.43E+1	5.95E-3	1.44E-3	1.43E+1	7.20E-2	4.89E-1	4.05E-3	-7.53E+0	7.38E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.43E+1	5.95E-3	1.44E-3	1.43E+1	7.20E-2	4.89E-1	4.05E-3	-7.53E+0	7.38E+0
PET	MJ	1.75E+1	6.03E-3	2.55E-2	1.76E+1	7.30E-2	5.11E-1	4.20E-3	-9.21E+0	8.93E+0
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	4.35E-3	6.34E-7	1.46E-6	4.35E-3	7.67E-6	2.62E-4	4.70E-6	-2.47E-3	2.16E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.83E-6	1.43E-8	2.73E-13	2.84E-6	1.73E-7	7.76E-7	4.61E-9	-2.53E-6	1.26E-6
NHWD	kg	2.29E-2	3.47E-4	1.05E-6	2.32E-2	4.20E-3	2.31E-2	1.68E-2	-1.06E-2	5.68E-2
RWD	kg	8.89E-6	3.81E-8	1.10E-13	8.93E-6	4.61E-7	1.82E-6	2.49E-8	-4.62E-6	6.61E-6
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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