Environmental Profile

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

Ecochain v3.5.80

Product:	3011094 - X-Stream Coupler BK 500x500PVC 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	-9.50E-1	2.18E-1	3.34E-1	-3.98E-1	1.70E-1	2.27E+1	8.01E-2	-1.02E+1	1.24E+1
GWP-f	kg CO2 eq	1.66E+1	2.18E-1	3.37E-1	1.72E+1	1.70E-1	5.03E+0	8.01E-2	-1.01E+1	1.23E+1
GWP-b	kg CO2 eq	-1.76E+1	1.32E-4	-3.56E-3	-1.76E+1	1.03E-4	1.77E+1	6.98E-5	-2.79E-2	8.59E-2
GWP-luluc	kg CO2 eq	1.29E-2	7.71E-5	3.45E-4	1.34E-2	6.02E-5	1.00E-3	1.37E-6	-9.97E-3	4.45E-3
ODP	kg CFC11 eq	7.36E-7	5.02E-8	1.91E-8	8.05E-7	3.92E-8	1.44E-7	2.01E-9	-6.18E-7	3.72E-7
AP	mol H+ eq	6.59E-2	1.24E-3	3.40E-3	7.06E-2	9.68E-4	5.95E-3	4.80E-5	-3.78E-2	3.97E-2
EP-fw	kg P eq	3.26E-4	1.79E-6	1.90E-5	3.47E-4	1.40E-6	2.90E-5	6.27E-8	-2.00E-4	1.77E-4
EP-m	kg N eq	1.28E-2	4.44E-4	3.58E-4	1.36E-2	3.47E-4	1.80E-3	3.13E-5	-8.17E-3	7.65E-3
EP-T	mol N eq	1.45E-1	4.89E-3	4.28E-3	1.54E-1	3.82E-3	1.98E-2	1.95E-4	-9.35E-2	8.48E-2
POCP	kg NMVOC eq	6.24E-2	1.40E-3	1.45E-3	6.52E-2	1.09E-3	6.15E-3	7.31E-5	-3.81E-2	3.45E-2
ADP-mm	kg Sb eq	2.62E-4	5.63E-6	4.54E-5	3.13E-4	4.40E-6	2.28E-5	4.84E-8	-9.40E-5	2.46E-4
ADP-f	MJ	5.24E+2	3.34E+0	3.13E+0	5.31E+2	2.61E+0	1.80E+1	1.47E-1	-2.87E+2	2.64E+2
WDP	m3 depriv.	9.88E+0	1.03E-2	1.20E-1	1.00E+1	8.01E-3	3.33E-1	7.54E-4	-5.03E+0	5.32E+0
PM	disease inc.	8.04E-7	1.97E-8	2.10E-8	8.44E-7	1.53E-8	9.52E-8	1.01E-9	-5.02E-7	4.54E-7
IR	kBq U-235 eq	4.04E-1	1.46E-2	2.35E-3	4.21E-1	1.14E-2	5.66E-2	6.80E-4	-2.32E-1	2.57E-1
ETP-fw	CTUe	1.47E+2	2.71E+0	2.79E+1	1.78E+2	2.12E+0	1.99E+1	1.23E-1	-1.00E+2	9.96E+1
HTP-c	CTUh	1.15E-8	9.66E-11	1.42E-9	1.30E-8	7.54E-11	2.54E-9	3.60E-12	-7.70E-9	7.89E-9
HTP-nc	CTUh	1.53E-7	3.24E-9	3.61E-8	1.92E-7	2.53E-9	2.98E-8	7.92E-11	-9.14E-8	1.33E-7
SQP	Pt	1.50E+3	2.86E+0	5.17E+0	1.51E+3	2.23E+0	1.43E+1	3.77E-1	-1.25E+3	2.75E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.30E+2	4.80E-2	5.54E+1	2.86E+2	3.74E-2	8.61E-1	5.68E-3	-1.89E+2	9.76E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.30E+2	4.80E-2	5.54E+1	2.86E+2	3.74E-2	8.61E-1	5.68E-3	-1.89E+2	9.76E+1
PENRE	MJ	5.63E+2	3.55E+0	3.33E+0	5.70E+2	2.77E+0	1.92E+1	1.56E-1	-3.09E+2	2.82E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.63E+2	3.55E+0	3.33E+0	5.70E+2	2.77E+0	1.92E+1	1.56E-1	-3.09E+2	2.82E+2
PET	MJ	7.93E+2	3.60E+0	5.88E+1	8.55E+2	2.81E+0	2.00E+1	1.61E-1	-4.99E+2	3.80E+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	1.61E-1	3.78E-4	3.37E-3	1.65E-1	2.95E-4	1.02E-2	1.81E-4	-8.51E-2	9.06E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.94E-4	8.55E-6	6.30E-10	2.02E-4	6.67E-6	3.03E-5	1.77E-7	-1.55E-4	8.50E-5
NHWD	kg	1.43E+0	2.07E-1	2.43E-3	1.64E+0	1.62E-1	8.93E-1	6.47E-1	-8.86E-1	2.45E+0
RWD	kg	4.18E-4	2.27E-5	2.53E-10	4.41E-4	1.77E-5	7.26E-5	9.58E-7	-2.41E-4	2.91E-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

Ecochain

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777