Environmental Profile

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

Ecochain v3.5.80

Product:	3010810 - X-Stream PP Repair Coupler BK 800
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	-5.11E+0	1.33E+0	4.05E-2	-3.74E+0	6.76E-1	9.15E+1	3.18E-1	-4.06E+1	4.82E+1
GWP-f	kg CO2 eq	6.59E+1	1.32E+0	4.08E-2	6.73E+1	6.76E-1	2.00E+1	3.19E-1	-4.04E+1	4.79E+1
GWP-b	kg CO2 eq	-7.11E+1	8.05E-4	-4.31E-4	-7.11E+1	4.10E-4	7.15E+1	2.77E-4	-1.11E-1	3.34E-1
GWP-luluc	kg CO2 eq	5.19E-2	4.69E-4	4.17E-5	5.24E-2	2.39E-4	3.98E-3	5.47E-6	-4.02E-2	1.65E-2
ODP	kg CFC11 eq	3.01E-6	3.05E-7	2.31E-9	3.32E-6	1.56E-7	5.72E-7	7.99E-9	-2.52E-6	1.53E-6
AP	mol H+ eq	2.63E-1	7.55E-3	4.12E-4	2.71E-1	3.85E-3	2.37E-2	1.91E-4	-1.51E-1	1.47E-1
EP-fw	kg P eq	1.30E-3	1.09E-5	2.30E-6	1.31E-3	5.56E-6	1.16E-4	2.50E-7	-8.06E-4	6.28E-4
EP-m	kg N eq	5.12E-2	2.70E-3	4.33E-5	5.39E-2	1.38E-3	7.16E-3	1.24E-4	-3.28E-2	2.98E-2
EP-T	mol N eq	5.76E-1	2.98E-2	5.18E-4	6.06E-1	1.52E-2	7.90E-2	7.74E-4	-3.75E-1	3.27E-1
POCP	kg NMVOC eq	2.48E-1	8.51E-3	1.75E-4	2.57E-1	4.34E-3	2.45E-2	2.91E-4	-1.52E-1	1.34E-1
ADP-mm	kg Sb eq	9.47E-4	3.43E-5	5.50E-6	9.87E-4	1.75E-5	9.07E-5	1.93E-7	-3.78E-4	7.18E-4
ADP-f	MJ	2.08E+3	2.03E+1	3.79E-1	2.10E+3	1.04E+1	7.16E+1	5.84E-1	-1.14E+3	1.04E+3
WDP	m3 depriv.	3.92E+1	6.24E-2	1.46E-2	3.93E+1	3.18E-2	1.32E+0	3.11E-3	-2.01E+1	2.05E+1
PM	disease inc.	3.22E-6	1.20E-7	2.54E-9	3.34E-6	6.10E-8	3.79E-7	4.01E-9	-2.02E-6	1.77E-6
IR	kBq U-235 eq	1.63E+0	8.89E-2	2.84E-4	1.72E+0	4.53E-2	2.25E-1	2.70E-3	-9.34E-1	1.06E+0
ETP-fw	CTUe	5.94E+2	1.65E+1	3.38E+0	6.14E+2	8.42E+0	7.93E+1	4.89E-1	-4.04E+2	2.99E+2
HTP-c	CTUh	4.56E-8	5.88E-10	1.72E-10	4.63E-8	3.00E-10	1.02E-8	1.44E-11	-3.11E-8	2.58E-8
HTP-nc	CTUh	6.14E-7	1.97E-8	4.37E-9	6.38E-7	1.00E-8	1.19E-7	3.15E-10	-3.69E-7	3.99E-7
SQP	Pt	6.05E+3	1.74E+1	6.26E-1	6.07E+3	8.87E+0	5.70E+1	1.50E+0	-5.05E+3	1.09E+3
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.49E+2	2.92E-1	6.72E+0	9.56E+2	1.49E-1	3.43E+0	2.25E-2	-7.64E+2	1.95E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.49E+2	2.92E-1	6.72E+0	9.56E+2	1.49E-1	3.43E+0	2.25E-2	-7.64E+2	1.95E+2
PENRE	MJ	2.23E+3	2.16E+1	4.03E-1	2.26E+3	1.10E+1	7.62E+1	6.19E-1	-1.23E+3	1.11E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.23E+3	2.16E+1	4.03E-1	2.26E+3	1.10E+1	7.62E+1	6.19E-1	-1.23E+3	1.11E+3
PET	MJ	3.18E+3	2.19E+1	7.12E+0	3.21E+3	1.12E+1	7.97E+1	6.42E-1	-1.99E+3	1.31E+3
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	6.40E-1	2.30E-3	4.08E-4	6.43E-1	1.17E-3	4.06E-2	7.19E-4	-3.40E-1	3.45E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.53E-4	5.20E-5	7.63E-11	8.05E-4	2.65E-5	1.21E-4	7.05E-7	-6.21E-4	3.32E-4
NHWD	kg	5.50E+0	1.26E+0	2.95E-4	6.76E+0	6.43E-1	3.56E+0	2.57E+0	-3.57E+0	9.96E+0
RWD	kg	1.70E-3	1.38E-4	3.06E-11	1.84E-3	7.05E-5	2.89E-4	3.81E-6	-9.69E-4	1.23E-3
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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