Environmental Profile

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

Ecochain v3.5.80

Product:	3010802 - X-Stream PP Dbl.Socket 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	2.09E+1	1.37E+0	7.65E-2	2.23E+1	6.98E-1	6.25E+1	3.29E-1	-3.78E+1	4.80E+1
GWP-f	kg CO2 eq	6.24E+1	1.37E+0	7.73E-2	6.39E+1	6.98E-1	2.05E+1	3.29E-1	-3.77E+1	4.77E+1
GWP-b	kg CO2 eq	-4.16E+1	8.30E-4	-8.15E-4	-4.16E+1	4.24E-4	4.20E+1	2.86E-4	-1.15E-1	2.83E-1
GWP-luluc	kg CO2 eq	3.67E-2	4.84E-4	7.90E-5	3.72E-2	2.47E-4	4.02E-3	5.66E-6	-2.64E-2	1.51E-2
ODP	kg CFC11 eq	2.42E-6	3.15E-7	4.37E-9	2.74E-6	1.61E-7	5.56E-7	8.25E-9	-2.13E-6	1.33E-6
AP	mol H+ eq	2.40E-1	7.78E-3	7.80E-4	2.48E-1	3.97E-3	2.31E-2	1.97E-4	-1.28E-1	1.47E-1
EP-fw	kg P eq	1.11E-3	1.12E-5	4.35E-6	1.13E-3	5.74E-6	1.17E-4	2.59E-7	-6.34E-4	6.15E-4
EP-m	kg N eq	4.40E-2	2.78E-3	8.20E-5	4.69E-2	1.42E-3	6.88E-3	1.28E-4	-2.62E-2	2.91E-2
EP-T	mol N eq	4.97E-1	3.07E-2	9.80E-4	5.28E-1	1.57E-2	7.59E-2	8.00E-4	-2.97E-1	3.24E-1
POCP	kg NMVOC eq	2.18E-1	8.77E-3	3.32E-4	2.27E-1	4.48E-3	2.37E-2	3.00E-4	-1.25E-1	1.31E-1
ADP-mm	kg Sb eq	9.12E-4	3.53E-5	1.04E-5	9.58E-4	1.81E-5	8.98E-5	1.99E-7	-3.18E-4	7.48E-4
ADP-f	MJ	2.05E+3	2.10E+1	7.17E-1	2.07E+3	1.07E+1	7.13E+1	6.03E-1	-1.11E+3	1.05E+3
WDP	m3 depriv.	3.91E+1	6.44E-2	2.76E-2	3.92E+1	3.29E-2	1.35E+0	3.27E-3	-1.97E+1	2.09E+1
PM	disease inc.	2.65E-6	1.23E-7	4.80E-9	2.78E-6	6.30E-8	3.74E-7	4.14E-9	-1.51E-6	1.71E-6
IR	kBq U-235 eq	1.42E+0	9.17E-2	5.38E-4	1.51E+0	4.68E-2	2.21E-1	2.79E-3	-7.61E-1	1.02E+0
ETP-fw	CTUe	4.96E+2	1.70E+1	6.39E+0	5.19E+2	8.70E+0	7.96E+1	5.05E-1	-2.94E+2	3.14E+2
HTP-c	CTUh	3.34E-8	6.06E-10	3.26E-10	3.43E-8	3.10E-10	1.00E-8	1.49E-11	-2.07E-8	2.40E-8
HTP-nc	CTUh	5.35E-7	2.03E-8	8.27E-9	5.64E-7	1.04E-8	1.19E-7	3.26E-10	-2.86E-7	4.08E-7
SQP	Pt	3.59E+3	1.79E+1	1.18E+0	3.60E+3	9.16E+0	5.69E+1	1.55E+0	-2.97E+3	6.98E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.08E+2	3.01E-1	1.27E+1	6.21E+2	1.54E-1	3.46E+0	2.32E-2	-4.54E+2	1.70E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.08E+2	3.01E-1	1.27E+1	6.21E+2	1.54E-1	3.46E+0	2.32E-2	-4.54E+2	1.70E+2
PENRE	MJ	2.20E+3	2.23E+1	7.63E-1	2.22E+3	1.14E+1	7.60E+1	6.40E-1	-1.19E+3	1.12E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.20E+3	2.23E+1	7.63E-1	2.22E+3	1.14E+1	7.60E+1	6.40E-1	-1.19E+3	1.12E+3
PET	MJ	2.81E+3	2.26E+1	1.35E+1	2.84E+3	1.15E+1	7.94E+1	6.63E-1	-1.65E+3	1.29E+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	6.18E-1	2.37E-3	7.71E-4	6.21E-1	1.21E-3	4.07E-2	7.42E-4	-3.16E-1	3.48E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.54E-4	5.36E-5	1.44E-10	6.08E-4	2.74E-5	1.18E-4	7.28E-7	-4.69E-4	2.85E-4
NHWD	kg	4.16E+0	1.30E+0	5.57E-4	5.46E+0	6.64E-1	3.53E+0	2.65E+0	-2.45E+0	9.85E+0
RWD	kg	1.44E-3	1.43E-4	5.79E-11	1.58E-3	7.28E-5	2.82E-4	3.93E-6	-7.60E-4	1.18E-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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