

Environmental Profile

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

Ecochain v3.5.80



Product: 3010940 - X-Stream PP Bend 45° BK 500 S/S
 Unit: 1 piece
 Manufacturer: Wavin - PL -Buk - Extra products

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



Wavin X-Stream is a new generation of double-walled pipes and fittings made of polypropylene. The system is

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]

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.28E+1	7.81E-1	4.28E-2	1.37E+1	3.95E-1	3.40E+1	1.86E-1	-2.12E+1	2.70E+1
GWP-f	kg CO2 eq	3.50E+1	7.80E-1	4.32E-2	3.58E+1	3.95E-1	1.16E+1	1.86E-1	-2.11E+1	2.69E+1
GWP-b	kg CO2 eq	-2.22E+1	4.74E-4	-4.56E-4	-2.22E+1	2.40E-4	2.24E+1	1.62E-4	-6.50E-2	1.59E-1
GWP-luluc	kg CO2 eq	1.99E-2	2.76E-4	4.41E-5	2.03E-2	1.40E-4	2.27E-3	3.19E-6	-1.43E-2	8.37E-3
ODP	kg CFC11 eq	1.33E-6	1.80E-7	2.44E-9	1.51E-6	9.09E-8	3.13E-7	4.67E-9	-1.17E-6	7.50E-7
AP	mol H+ eq	1.33E-1	4.44E-3	4.36E-4	1.38E-1	2.25E-3	1.30E-2	1.11E-4	-7.14E-2	8.23E-2
EP-fw	kg P eq	6.14E-4	6.42E-6	2.43E-6	6.23E-4	3.25E-6	6.58E-5	1.46E-7	-3.50E-4	3.43E-4
EP-m	kg N eq	2.45E-2	1.59E-3	4.58E-5	2.61E-2	8.04E-4	3.87E-3	7.23E-5	-1.45E-2	1.64E-2
EP-T	mol N eq	2.75E-1	1.75E-2	5.48E-4	2.94E-1	8.86E-3	4.27E-2	4.52E-4	-1.64E-1	1.81E-1
POCP	kg NMVOC eq	1.22E-1	5.01E-3	1.85E-4	1.27E-1	2.53E-3	1.33E-2	1.70E-4	-6.92E-2	7.35E-2
ADP-mm	kg Sb eq	4.93E-4	2.02E-5	5.81E-6	5.19E-4	1.02E-5	5.06E-5	1.13E-7	-1.77E-4	4.03E-4
ADP-f	MJ	1.16E+3	1.20E+1	4.01E-1	1.17E+3	6.06E+0	4.02E+1	3.41E-1	-6.24E+2	5.91E+2
WDP	m3 depriv.	2.20E+1	3.68E-2	1.54E-2	2.21E+1	1.86E-2	7.63E-1	1.82E-3	-1.11E+1	1.18E+1
PM	disease inc.	1.47E-6	7.04E-8	2.68E-9	1.54E-6	3.56E-8	2.11E-7	2.34E-9	-8.31E-7	9.58E-7
IR	kBq U-235 eq	7.92E-1	5.23E-2	3.01E-4	8.45E-1	2.65E-2	1.24E-1	1.58E-3	-4.21E-1	5.76E-1
ETP-fw	CTUe	2.70E+2	9.72E+0	3.57E+0	2.83E+2	4.92E+0	4.49E+1	2.85E-1	-1.61E+2	1.72E+2
HTP-c	CTUh	1.81E-8	3.46E-10	1.82E-10	1.87E-8	1.75E-10	5.64E-9	8.40E-12	-1.12E-8	1.33E-8
HTP-nc	CTUh	2.92E-7	1.16E-8	4.63E-9	3.08E-7	5.86E-9	6.73E-8	1.84E-10	-1.57E-7	2.25E-7
SQP	Pt	1.92E+3	1.02E+1	6.62E-1	1.93E+3	5.18E+0	3.21E+1	8.74E-1	-1.59E+3	3.76E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.20E+2	1.72E-1	7.10E+0	3.27E+2	8.69E-2	1.95E+0	1.31E-2	-2.43E+2	8.61E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.20E+2	1.72E-1	7.10E+0	3.27E+2	8.69E-2	1.95E+0	1.31E-2	-2.43E+2	8.61E+1
PENRE	MJ	1.24E+3	1.27E+1	4.27E-1	1.25E+3	6.43E+0	4.29E+1	3.62E-1	-6.72E+2	6.31E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.24E+3	1.27E+1	4.27E-1	1.25E+3	6.43E+0	4.29E+1	3.62E-1	-6.72E+2	6.31E+2
PET	MJ	1.56E+3	1.29E+1	7.53E+0	1.58E+3	6.52E+0	4.48E+1	3.75E-1	-9.15E+2	7.17E+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	3.47E-1	1.36E-3	4.31E-4	3.48E-1	6.85E-4	2.30E-2	4.20E-4	-1.77E-1	1.96E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.02E-4	3.06E-5	8.07E-11	3.33E-4	1.55E-5	6.67E-5	4.12E-7	-2.58E-4	1.57E-4
NHWD	kg	2.28E+0	7.42E-1	3.12E-4	3.02E+0	3.75E-1	1.99E+0	1.50E+0	-1.33E+0	5.55E+0
RWD	kg	8.00E-4	8.14E-5	3.24E-11	8.82E-4	4.12E-5	1.59E-4	2.22E-6	-4.19E-4	6.65E-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



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