

Environmental Profile

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

Ecochain v3.5.80



Product: 3043189 - X-Stream PP Bend 15° BK 100 S/S
Unit: 1 piece
Manufacturer: Wavin - PL -Buk - Extra products

Wavin X-Stream is a new generation of double-walled pipes and fittings 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					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use							C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal				
Construction process stage					Benefits and loads beyond the system boundaries											
A4 Transport gate to site A5 Assembly / Construction installation process					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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	5.05E-1	2.63E-3	1.45E-4	5.08E-1	5.87E-3	6.71E-1	3.22E-3	-3.48E-1	8.41E-1
GWP-f	kg CO2 eq	7.55E-1	2.63E-3	1.46E-4	7.57E-1	5.87E-3	4.04E-1	3.22E-3	-3.84E-1	7.87E-1
GWP-b	kg CO2 eq	-2.50E-1	1.60E-6	-1.54E-6	-2.50E-1	3.56E-6	2.67E-1	2.94E-6	3.66E-2	5.35E-2
GWP-luluc	kg CO2 eq	7.89E-4	9.31E-7	1.49E-7	7.90E-4	2.08E-6	3.02E-5	5.76E-8	-4.61E-4	3.61E-4
ODP	kg CFC11 eq	8.33E-8	6.06E-10	8.26E-12	8.39E-8	1.35E-9	5.02E-9	8.32E-11	-2.94E-8	6.09E-8
AP	mol H+ eq	3.51E-3	1.50E-5	1.47E-6	3.53E-3	3.34E-5	2.20E-4	2.01E-6	-1.15E-3	2.64E-3
EP-fw	kg P eq	2.08E-5	2.17E-8	8.24E-9	2.08E-5	4.83E-8	9.10E-7	2.64E-9	-8.10E-6	1.37E-5
EP-m	kg N eq	6.31E-4	5.36E-6	1.55E-7	6.37E-4	1.20E-5	7.00E-5	2.17E-6	-2.45E-4	4.76E-4
EP-T	mol N eq	6.99E-3	5.91E-5	1.85E-6	7.06E-3	1.32E-4	7.71E-4	8.11E-6	-2.78E-3	5.18E-3
POCP	kg NMVOC eq	2.91E-3	1.69E-5	6.28E-7	2.93E-3	3.77E-5	2.30E-4	3.01E-6	-1.06E-3	2.14E-3
ADP-mm	kg Sb eq	1.04E-4	6.81E-8	1.97E-8	1.04E-4	1.52E-7	7.57E-7	2.01E-9	-5.51E-6	9.93E-5
ADP-f	MJ	2.22E+1	4.04E-2	1.36E-3	2.23E+1	9.01E-2	5.71E-1	6.09E-3	-9.72E+0	1.32E+1
WDP	m3 depriv.	4.59E-1	1.24E-4	5.22E-5	4.59E-1	2.76E-4	1.26E-2	3.07E-5	-1.99E-1	2.73E-1
PM	disease inc.	4.02E-8	2.38E-10	9.08E-12	4.05E-8	5.30E-10	3.12E-9	4.17E-11	-1.43E-8	2.99E-8
IR	kBq U-235 eq	3.41E-2	1.77E-4	1.02E-6	3.43E-2	3.94E-4	1.81E-3	2.86E-5	-8.73E-3	2.78E-2
ETP-fw	CTUe	1.55E+1	3.28E-2	1.21E-2	1.55E+1	7.32E-2	1.04E+0	7.73E-3	-5.35E+0	1.13E+1
HTP-c	CTUh	4.40E-10	1.17E-12	6.17E-13	4.42E-10	2.60E-12	7.94E-11	1.54E-13	-1.61E-10	3.63E-10
HTP-nc	CTUh	9.08E-9	3.91E-11	1.57E-11	9.14E-9	8.72E-11	1.08E-9	3.93E-12	-2.59E-9	7.72E-9
SQP	Pt	2.46E+1	3.46E-2	2.24E-3	2.47E+1	7.71E-2	4.32E-1	1.56E-2	-2.50E+1	1.39E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.31E+0	5.79E-4	2.40E-2	6.33E+0	1.29E-3	2.70E-2	2.51E-4	-4.05E+0	2.30E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.31E+0	5.79E-4	2.40E-2	6.33E+0	1.29E-3	2.70E-2	2.51E-4	-4.05E+0	2.30E+0
PENRE	MJ	2.38E+1	4.29E-2	1.44E-3	2.38E+1	9.57E-2	6.09E-1	6.46E-3	-1.05E+1	1.40E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.38E+1	4.29E-2	1.44E-3	2.38E+1	9.57E-2	6.09E-1	6.46E-3	-1.05E+1	1.40E+1
PET	MJ	3.01E+1	4.35E-2	2.55E-2	3.02E+1	9.69E-2	6.36E-1	6.71E-3	-1.46E+1	1.63E+1
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	9.42E-3	4.57E-6	1.46E-6	9.43E-3	1.02E-5	6.12E-4	7.53E-6	-3.89E-3	6.17E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.92E-6	1.03E-7	2.73E-13	9.02E-6	2.30E-7	1.14E-6	7.32E-9	-5.87E-6	4.53E-6
NHWD	kg	6.09E-2	2.50E-3	1.05E-6	6.35E-2	5.58E-3	3.28E-2	2.67E-2	-2.00E-2	1.08E-1
RWD	kg	4.16E-5	2.75E-7	1.10E-13	4.19E-5	6.13E-7	2.33E-6	3.99E-8	-9.02E-6	3.59E-5
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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