

Environmental Profile

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

Ecochain v3.5.80



Product: 3023684 - X-Stream PP Bend 90° BK 100 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					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]

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.04E-1	2.85E-3	1.45E-4	6.07E-1	7.32E-3	7.77E-1	3.91E-3	-4.23E-1	9.73E-1
GWP-f	kg CO2 eq	9.03E-1	2.85E-3	1.46E-4	9.06E-1	7.32E-3	4.55E-1	3.91E-3	-4.68E-1	9.04E-1
GWP-b	kg CO2 eq	-2.99E-1	1.73E-6	-1.54E-6	-2.99E-1	4.44E-6	3.22E-1	3.54E-6	4.61E-2	6.85E-2
GWP-luluc	kg CO2 eq	9.38E-4	1.01E-6	1.49E-7	9.39E-4	2.59E-6	3.89E-5	6.93E-8	-5.73E-4	4.08E-4
ODP	kg CFC11 eq	8.99E-8	6.56E-10	8.26E-12	9.05E-8	1.69E-9	6.32E-9	1.00E-10	-3.45E-8	6.41E-8
AP	mol H+ eq	4.12E-3	1.62E-5	1.47E-6	4.14E-3	4.17E-5	2.73E-4	2.42E-6	-1.44E-3	3.01E-3
EP-fw	kg P eq	2.42E-5	2.34E-8	8.24E-9	2.43E-5	6.02E-8	1.16E-6	3.18E-9	-1.01E-5	1.54E-5
EP-m	kg N eq	7.46E-4	5.80E-6	1.55E-7	7.52E-4	1.49E-5	8.64E-5	2.44E-6	-3.04E-4	5.52E-4
EP-T	mol N eq	8.24E-3	6.40E-5	1.85E-6	8.31E-3	1.64E-4	9.52E-4	9.77E-6	-3.45E-3	5.98E-3
POCP	kg NMVOC eq	3.42E-3	1.83E-5	6.28E-7	3.44E-3	4.70E-5	2.86E-4	3.63E-6	-1.32E-3	2.45E-3
ADP-mm	kg Sb eq	1.06E-4	7.37E-8	1.97E-8	1.06E-4	1.89E-7	9.66E-7	2.42E-9	-6.16E-6	1.01E-4
ADP-f	MJ	2.69E+1	4.37E-2	1.36E-3	2.69E+1	1.12E-1	7.29E-1	7.34E-3	-1.21E+1	1.56E+1
WDP	m3 depriv.	5.51E-1	1.34E-4	5.22E-5	5.51E-1	3.45E-4	1.55E-2	3.74E-5	-2.55E-1	3.12E-1
PM	disease inc.	4.66E-8	2.57E-10	9.08E-12	4.68E-8	6.60E-10	3.98E-9	5.03E-11	-1.78E-8	3.37E-8
IR	kBq U-235 eq	3.77E-2	1.91E-4	1.02E-6	3.79E-2	4.91E-4	2.30E-3	3.44E-5	-1.08E-2	2.99E-2
ETP-fw	CTUe	1.82E+1	3.55E-2	1.21E-2	1.82E+1	9.12E-2	1.22E+0	8.78E-3	-6.66E+0	1.29E+1
HTP-c	CTUh	5.20E-10	1.26E-12	6.17E-13	5.22E-10	3.25E-12	1.02E-10	1.84E-13	-1.97E-10	4.30E-10
HTP-nc	CTUh	1.07E-8	4.23E-11	1.57E-11	1.08E-8	1.09E-10	1.35E-9	4.60E-12	-3.24E-9	9.03E-9
SQP	Pt	2.95E+1	3.74E-2	2.24E-3	2.95E+1	9.61E-2	5.56E-1	1.88E-2	-3.05E+1	-3.48E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.83E+0	6.27E-4	2.40E-2	7.85E+0	1.61E-3	3.44E-2	2.99E-4	-4.95E+0	2.93E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.83E+0	6.27E-4	2.40E-2	7.85E+0	1.61E-3	3.44E-2	2.99E-4	-4.95E+0	2.93E+0
PENRE	MJ	2.88E+1	4.64E-2	1.44E-3	2.88E+1	1.19E-1	7.76E-1	7.78E-3	-1.31E+1	1.66E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.88E+1	4.64E-2	1.44E-3	2.88E+1	1.19E-1	7.76E-1	7.78E-3	-1.31E+1	1.66E+1
PET	MJ	3.66E+1	4.70E-2	2.55E-2	3.67E+1	1.21E-1	8.11E-1	8.08E-3	-1.81E+1	1.95E+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	1.10E-2	4.95E-6	1.46E-6	1.10E-2	1.27E-5	7.01E-4	9.07E-6	-4.91E-3	6.83E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.01E-5	1.12E-7	2.73E-13	1.02E-5	2.87E-7	1.41E-6	8.83E-9	-6.90E-6	5.02E-6
NHWD	kg	7.05E-2	2.71E-3	1.05E-6	7.32E-2	6.96E-3	4.08E-2	3.22E-2	-2.46E-2	1.29E-1
RWD	kg	4.52E-5	2.97E-7	1.10E-13	4.55E-5	7.64E-7	2.98E-6	4.80E-8	-1.10E-5	3.83E-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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