

Environmental Profile

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

Ecochain v3.5.80



Product: 3010949 - X-Stream PP Plug BK 200
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	1.68E+0	4.73E-2	2.14E-2	1.75E+0	2.34E-2	8.83E-1	1.10E-2	-1.09E+0	1.57E+0
GWP-f	kg CO2 eq	1.87E+0	4.72E-2	2.16E-2	1.93E+0	2.34E-2	6.84E-1	1.10E-2	-1.09E+0	1.56E+0
GWP-b	kg CO2 eq	-1.88E-1	2.87E-5	-2.28E-4	-1.88E-1	1.42E-5	1.98E-1	9.62E-6	-3.87E-3	6.47E-3
GWP-luluc	kg CO2 eq	5.82E-4	1.67E-5	2.21E-5	6.21E-4	8.28E-6	1.32E-4	1.87E-7	-2.48E-4	5.14E-4
ODP	kg CFC11 eq	4.84E-8	1.09E-8	1.22E-9	6.05E-8	5.39E-9	1.74E-8	2.77E-10	-5.06E-8	3.30E-8
AP	mol H+ eq	6.66E-3	2.69E-4	2.18E-4	7.14E-3	1.33E-4	7.38E-4	6.60E-6	-3.16E-3	4.86E-3
EP-fw	kg P eq	2.79E-5	3.89E-7	1.22E-6	2.95E-5	1.93E-7	3.81E-6	8.60E-9	-1.28E-5	2.07E-5
EP-m	kg N eq	1.14E-3	9.63E-5	2.29E-5	1.25E-3	4.77E-5	2.18E-4	4.40E-6	-5.68E-4	9.56E-4
EP-T	mol N eq	1.27E-2	1.06E-3	2.74E-4	1.41E-2	5.26E-4	2.40E-3	2.68E-5	-6.41E-3	1.06E-2
POCP	kg NMVOC eq	5.79E-3	3.03E-4	9.27E-5	6.18E-3	1.50E-4	7.53E-4	1.01E-5	-2.83E-3	4.27E-3
ADP-mm	kg Sb eq	2.07E-5	1.22E-6	2.90E-6	2.49E-5	6.05E-7	2.87E-6	6.65E-9	-7.52E-6	2.08E-5
ADP-f	MJ	6.51E+1	7.25E-1	2.00E-1	6.61E+1	3.59E-1	2.30E+0	2.02E-2	-3.41E+1	3.46E+1
WDP	m3 depriv.	1.27E+0	2.23E-3	7.71E-3	1.28E+0	1.10E-3	4.50E-2	1.00E-4	-6.11E-1	7.11E-1
PM	disease inc.	6.67E-8	4.26E-9	1.34E-9	7.23E-8	2.11E-9	1.20E-8	1.39E-10	-2.71E-8	5.96E-8
IR	kBq U-235 eq	3.69E-2	3.17E-3	1.50E-4	4.02E-2	1.57E-3	6.95E-3	9.37E-5	-1.67E-2	3.21E-2
ETP-fw	CTUe	1.10E+1	5.89E-1	1.78E+0	1.34E+1	2.92E-1	2.60E+0	1.72E-2	-5.24E+0	1.11E+1
HTP-c	CTUh	5.01E-10	2.10E-11	9.11E-11	6.13E-10	1.04E-11	3.24E-10	4.93E-13	-2.00E-10	7.47E-10
HTP-nc	CTUh	1.29E-8	7.02E-10	2.31E-9	1.59E-8	3.48E-10	3.89E-9	1.09E-11	-5.75E-9	1.44E-8
SQP	Pt	2.03E+1	6.20E-1	3.31E-1	2.13E+1	3.07E-1	1.84E+0	5.18E-2	-4.82E+0	1.86E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.10E+0	1.04E-2	3.55E+0	8.66E+0	5.15E-3	1.13E-1	7.85E-4	-1.22E+0	7.57E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.10E+0	1.04E-2	3.55E+0	8.66E+0	5.15E-3	1.13E-1	7.85E-4	-1.22E+0	7.57E+0
PENRE	MJ	6.99E+1	7.70E-1	2.13E-1	7.09E+1	3.81E-1	2.45E+0	2.14E-2	-3.68E+1	3.70E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.99E+1	7.70E-1	2.13E-1	7.09E+1	3.81E-1	2.45E+0	2.14E-2	-3.68E+1	3.70E+1
PET	MJ	7.50E+1	7.80E-1	3.76E+0	7.96E+1	3.87E-1	2.56E+0	2.22E-2	-3.80E+1	4.45E+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	1.93E-2	8.21E-5	2.16E-4	1.96E-2	4.06E-5	1.34E-3	2.49E-5	-9.03E-3	1.20E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.25E-6	1.85E-6	4.03E-11	1.11E-5	9.19E-7	3.75E-6	2.43E-8	-8.34E-6	7.46E-6
NHWD	kg	7.15E-2	4.49E-2	1.56E-4	1.17E-1	2.23E-2	1.16E-1	8.90E-2	-2.90E-2	3.15E-1
RWD	kg	3.44E-5	4.93E-6	1.62E-11	3.93E-5	2.44E-6	8.81E-6	1.32E-7	-1.51E-5	3.56E-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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