

Environmental Profile

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

Ecochain v3.5.80



Product: 3010954 - X-Stream PP Plug BK 500
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	1.66E+1	5.64E-1	2.14E-2	1.72E+1	3.33E-1	2.20E+1	1.57E-1	-1.68E+1	2.28E+1
GWP-f	kg CO2 eq	2.86E+1	5.63E-1	2.16E-2	2.92E+1	3.33E-1	9.77E+0	1.57E-1	-1.68E+1	2.27E+1
GWP-b	kg CO2 eq	-1.20E+1	3.42E-4	-2.28E-4	-1.20E+1	2.02E-4	1.22E+1	1.37E-4	-5.43E-2	1.36E-1
GWP-luluc	kg CO2 eq	1.34E-2	1.99E-4	2.21E-5	1.36E-2	1.18E-4	1.90E-3	2.64E-6	-8.01E-3	7.61E-3
ODP	kg CFC11 eq	8.77E-7	1.30E-7	1.22E-9	1.01E-6	7.67E-8	2.57E-7	3.93E-9	-7.64E-7	5.82E-7
AP	mol H+ eq	1.06E-1	3.21E-3	2.18E-4	1.09E-1	1.90E-3	1.09E-2	9.37E-5	-5.32E-2	6.87E-2
EP-fw	kg P eq	4.72E-4	4.63E-6	1.22E-6	4.78E-4	2.74E-6	5.50E-5	1.22E-7	-2.37E-4	2.99E-4
EP-m	kg N eq	1.90E-2	1.15E-3	2.29E-5	2.02E-2	6.79E-4	3.23E-3	6.13E-5	-1.03E-2	1.38E-2
EP-T	mol N eq	2.16E-1	1.26E-2	2.74E-4	2.29E-1	7.48E-3	3.56E-2	3.81E-4	-1.18E-1	1.55E-1
POCP	kg NMVOC eq	9.48E-2	3.62E-3	9.27E-5	9.85E-2	2.14E-3	1.11E-2	1.43E-4	-5.01E-2	6.18E-2
ADP-mm	kg Sb eq	4.43E-4	1.46E-5	2.90E-6	4.61E-4	8.61E-6	4.19E-5	9.43E-8	-1.26E-4	3.85E-4
ADP-f	MJ	9.62E+2	8.64E+0	2.00E-1	9.70E+2	5.11E+0	3.34E+1	2.87E-1	-5.10E+2	5.00E+2
WDP	m3 depriv.	1.85E+1	2.65E-2	7.71E-3	1.85E+1	1.57E-2	6.43E-1	1.36E-3	-8.85E+0	1.03E+1
PM	disease inc.	1.15E-6	5.08E-8	1.34E-9	1.20E-6	3.01E-8	1.76E-7	1.97E-9	-5.57E-7	8.54E-7
IR	kBq U-235 eq	5.97E-1	3.78E-2	1.50E-4	6.35E-1	2.23E-2	1.02E-1	1.33E-3	-2.94E-1	4.67E-1
ETP-fw	CTUe	1.96E+2	7.02E+0	1.78E+0	2.05E+2	4.15E+0	3.76E+1	2.41E-1	-1.08E+2	1.38E+2
HTP-c	CTUh	1.19E-8	2.50E-10	9.11E-11	1.23E-8	1.48E-10	4.68E-9	6.95E-12	-6.26E-9	1.08E-8
HTP-nc	CTUh	2.21E-7	8.37E-9	2.31E-9	2.32E-7	4.95E-9	5.62E-8	1.54E-10	-1.07E-7	1.85E-7
SQP	Pt	1.07E+3	7.40E+0	3.31E-1	1.08E+3	4.37E+0	2.67E+1	7.37E-1	-7.48E+2	3.66E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.82E+2	1.24E-1	3.55E+0	1.86E+2	7.33E-2	1.63E+0	1.12E-2	-1.19E+2	6.90E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.82E+2	1.24E-1	3.55E+0	1.86E+2	7.33E-2	1.63E+0	1.12E-2	-1.19E+2	6.90E+1
PENRE	MJ	1.03E+3	9.18E+0	2.13E-1	1.04E+3	5.43E+0	3.56E+1	3.05E-1	-5.49E+2	5.34E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.03E+3	9.18E+0	2.13E-1	1.04E+3	5.43E+0	3.56E+1	3.05E-1	-5.49E+2	5.34E+2
PET	MJ	1.21E+3	9.30E+0	3.76E+0	1.23E+3	5.50E+0	3.73E+1	3.16E-1	-6.68E+2	6.03E+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	2.86E-1	9.78E-4	2.16E-4	2.87E-1	5.78E-4	1.94E-2	3.54E-4	-1.38E-1	1.70E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.21E-4	2.21E-5	4.03E-11	2.43E-4	1.31E-5	5.50E-5	3.45E-7	-1.68E-4	1.44E-4
NHWD	kg	1.68E+0	5.36E-1	1.56E-4	2.22E+0	3.17E-1	1.68E+0	1.27E+0	-7.79E-1	4.70E+0
RWD	kg	5.72E-4	5.88E-5	1.62E-11	6.31E-4	3.48E-5	1.30E-4	1.88E-6	-2.83E-4	5.15E-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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