

Environmental Profile

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

Ecochain v3.5.80



Product: 3010821 - X-Stream PP Plug BK 800
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	1.76E+1	2.01E+0	2.14E-2	1.96E+1	7.11E-1	6.85E+1	3.35E-1	-3.85E+1	5.07E+1
GWP-f	kg CO2 eq	6.47E+1	2.01E+0	2.16E-2	6.68E+1	7.10E-1	2.09E+1	3.35E-1	-3.83E+1	5.04E+1
GWP-b	kg CO2 eq	-4.72E+1	1.22E-3	-2.28E-4	-4.72E+1	4.31E-4	4.76E+1	2.92E-4	-1.16E-1	3.31E-1
GWP-luluc	kg CO2 eq	4.00E-2	7.12E-4	2.21E-5	4.08E-2	2.51E-4	4.11E-3	5.66E-6	-2.69E-2	1.82E-2
ODP	kg CFC11 eq	2.41E-6	4.64E-7	1.22E-9	2.87E-6	1.64E-7	5.72E-7	8.39E-9	-1.98E-6	1.64E-6
AP	mol H+ eq	2.47E-1	1.15E-2	2.18E-4	2.59E-1	4.04E-3	2.41E-2	2.00E-4	-1.32E-1	1.55E-1
EP-fw	kg P eq	1.16E-3	1.66E-5	1.22E-6	1.18E-3	5.84E-6	1.19E-4	2.60E-7	-6.35E-4	6.70E-4
EP-m	kg N eq	4.64E-2	4.10E-3	2.29E-5	5.05E-2	1.45E-3	7.26E-3	1.31E-4	-2.71E-2	3.22E-2
EP-T	mol N eq	5.23E-1	4.52E-2	2.74E-4	5.68E-1	1.59E-2	8.01E-2	8.13E-4	-3.11E-1	3.54E-1
POCP	kg NMVOC eq	2.27E-1	1.29E-2	9.27E-5	2.40E-1	4.56E-3	2.49E-2	3.05E-4	-1.28E-1	1.42E-1
ADP-mm	kg Sb eq	8.34E-4	5.21E-5	2.90E-6	8.89E-4	1.84E-5	9.20E-5	2.01E-7	-3.16E-4	6.83E-4
ADP-f	MJ	2.11E+3	3.09E+1	2.00E-1	2.14E+3	1.09E+1	7.31E+1	6.13E-1	-1.13E+3	1.10E+3
WDP	m3 depriv.	4.03E+1	9.48E-2	7.71E-3	4.04E+1	3.34E-2	1.38E+0	2.96E-3	-1.97E+1	2.22E+1
PM	disease inc.	2.95E-6	1.82E-7	1.34E-9	3.13E-6	6.41E-8	3.87E-7	4.21E-9	-1.56E-6	2.03E-6
IR	kBq U-235 eq	1.46E+0	1.35E-1	1.50E-4	1.60E+0	4.76E-2	2.26E-1	2.84E-3	-7.59E-1	1.12E+0
ETP-fw	CTUe	5.08E+2	2.51E+1	1.78E+0	5.35E+2	8.85E+0	8.17E+1	5.13E-1	-3.16E+2	3.10E+2
HTP-c	CTUh	3.50E-8	8.92E-10	9.11E-11	3.60E-8	3.15E-10	1.04E-8	1.49E-11	-2.07E-8	2.60E-8
HTP-nc	CTUh	5.47E-7	2.99E-8	2.31E-9	5.79E-7	1.06E-8	1.23E-7	3.29E-10	-2.92E-7	4.21E-7
SQP	Pt	4.10E+3	2.64E+1	3.31E-1	4.13E+3	9.32E+0	5.82E+1	1.57E+0	-3.04E+3	1.16E+3
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.72E+2	4.43E-1	3.55E+0	6.76E+2	1.56E-1	3.53E+0	2.38E-2	-4.71E+2	2.08E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.72E+2	4.43E-1	3.55E+0	6.76E+2	1.56E-1	3.53E+0	2.38E-2	-4.71E+2	2.08E+2
PENRE	MJ	2.27E+3	3.28E+1	2.13E-1	2.30E+3	1.16E+1	7.78E+1	6.50E-1	-1.22E+3	1.17E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.27E+3	3.28E+1	2.13E-1	2.30E+3	1.16E+1	7.78E+1	6.50E-1	-1.22E+3	1.17E+3
PET	MJ	2.94E+3	3.32E+1	3.76E+0	2.98E+3	1.17E+1	8.14E+1	6.74E-1	-1.69E+3	1.38E+3
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	6.39E-1	3.50E-3	2.16E-4	6.43E-1	1.23E-3	4.22E-2	7.56E-4	-3.18E-1	3.69E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.93E-4	7.90E-5	4.03E-11	6.72E-4	2.79E-5	1.22E-4	7.37E-7	-4.70E-4	3.53E-4
NHWD	kg	4.35E+0	1.91E+0	1.56E-4	6.26E+0	6.76E-1	3.71E+0	2.70E+0	-2.46E+0	1.09E+1
RWD	kg	1.46E-3	2.10E-4	1.62E-11	1.67E-3	7.41E-5	2.89E-4	4.00E-6	-7.60E-4	1.28E-3
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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