

Environmental Profile

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

Ecochain v3.5.80



Product: 3021112 - X-Stream PP Reducer BK 400x160 PVC
 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

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
 A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
 B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
 C4 Disposal

Benefits and loads beyond the system boundaries

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	4.54E+0	2.29E-1	4.28E-2	4.81E+0	1.20E-1	1.02E+1	5.66E-2	-6.35E+0	8.79E+0
GWP-f	kg CO2 eq	1.11E+1	2.28E-1	4.32E-2	1.13E+1	1.20E-1	3.55E+0	5.66E-2	-6.33E+0	8.72E+0
GWP-b	kg CO2 eq	-6.52E+0	1.39E-4	-4.56E-4	-6.52E+0	7.29E-5	6.60E+0	4.94E-5	-1.96E-2	5.98E-2
GWP-luluc	kg CO2 eq	6.21E-3	8.09E-5	4.41E-5	6.33E-3	4.25E-5	6.91E-4	9.53E-7	-3.92E-3	3.15E-3
ODP	kg CFC11 eq	3.99E-7	5.27E-8	2.44E-9	4.54E-7	2.77E-8	9.51E-8	1.42E-9	-3.12E-7	2.66E-7
AP	mol H+ eq	4.23E-2	1.30E-3	4.36E-4	4.41E-2	6.84E-4	4.01E-3	3.38E-5	-2.11E-2	2.77E-2
EP-fw	kg P eq	1.95E-4	1.88E-6	2.43E-6	2.00E-4	9.88E-7	2.00E-5	4.38E-8	-9.90E-5	1.22E-4
EP-m	kg N eq	7.81E-3	4.66E-4	4.58E-5	8.33E-3	2.45E-4	1.20E-3	2.22E-5	-4.26E-3	5.54E-3
EP-T	mol N eq	8.93E-2	5.13E-3	5.48E-4	9.50E-2	2.70E-3	1.33E-2	1.37E-4	-4.87E-2	6.24E-2
POCP	kg NMVOC eq	3.81E-2	1.47E-3	1.85E-4	3.98E-2	7.71E-4	4.13E-3	5.15E-5	-2.03E-2	2.44E-2
ADP-mm	kg Sb eq	2.02E-4	5.91E-6	5.81E-6	2.14E-4	3.11E-6	1.54E-5	3.40E-8	-5.05E-5	1.82E-4
ADP-f	MJ	3.60E+2	3.51E+0	4.01E-1	3.63E+2	1.84E+0	1.22E+1	1.04E-1	-1.89E+2	1.89E+2
WDP	m3 depriv.	6.92E+0	1.08E-2	1.54E-2	6.95E+0	5.65E-3	2.33E-1	4.88E-4	-3.27E+0	3.91E+0
PM	disease inc.	4.83E-7	2.06E-8	2.68E-9	5.06E-7	1.08E-8	6.46E-8	7.12E-10	-2.40E-7	3.42E-7
IR	kBq U-235 eq	2.43E-1	1.53E-2	3.01E-4	2.59E-1	8.05E-3	3.77E-2	4.81E-4	-1.20E-1	1.85E-1
ETP-fw	CTUe	8.73E+1	2.85E+0	3.57E+0	9.38E+1	1.50E+0	1.37E+1	8.68E-2	-4.77E+1	6.14E+1
HTP-c	CTUh	5.72E-9	1.01E-10	1.82E-10	6.00E-9	5.32E-11	1.73E-9	2.50E-12	-3.04E-9	4.75E-9
HTP-nc	CTUh	9.58E-8	3.40E-9	4.63E-9	1.04E-7	1.78E-9	2.05E-8	5.57E-11	-4.52E-8	8.10E-8
SQP	Pt	5.75E+2	3.00E+0	6.62E-1	5.79E+2	1.58E+0	9.76E+0	2.66E-1	-4.22E+2	1.68E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.84E+1	5.03E-2	7.10E+0	1.06E+2	2.64E-2	5.94E-1	4.03E-3	-6.56E+1	4.06E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.84E+1	5.03E-2	7.10E+0	1.06E+2	2.64E-2	5.94E-1	4.03E-3	-6.56E+1	4.06E+1
PENRE	MJ	3.86E+2	3.72E+0	4.27E-1	3.90E+2	1.96E+0	1.30E+1	1.10E-1	-2.03E+2	2.02E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.86E+2	3.72E+0	4.27E-1	3.90E+2	1.96E+0	1.30E+1	1.10E-1	-2.03E+2	2.02E+2
PET	MJ	4.84E+2	3.77E+0	7.53E+0	4.96E+2	1.98E+0	1.36E+1	1.14E-1	-2.69E+2	2.42E+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	1.10E-1	3.97E-4	4.31E-4	1.11E-1	2.09E-4	7.08E-3	1.28E-4	-5.22E-2	6.59E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.05E-4	8.97E-6	8.07E-11	1.14E-4	4.71E-6	2.03E-5	1.24E-7	-7.26E-5	6.60E-5
NHWD	kg	8.14E-1	2.17E-1	3.12E-4	1.03E+0	1.14E-1	6.19E-1	4.56E-1	-3.66E-1	1.86E+0
RWD	kg	2.40E-4	2.39E-5	3.24E-11	2.64E-4	1.25E-5	4.82E-5	6.76E-7	-1.19E-4	2.07E-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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