

Environmental Profile

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

Ecochain v3.5.80



Product: 3023683 - X-Stream PP Bend 45° 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]

Statement of Confidentiality

This document and supporting material contain confidential and proprietary business information of Wavin - PL -Buk - Extra products. These materials may be printed or (photo) copied or otherwise used only with the written consent of Wavin - PL -Buk - Extra products.

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	5.27E-1	2.84E-3	1.45E-4	5.30E-1	6.45E-3	7.46E-1	3.50E-3	-3.79E-1	9.07E-1
GWP-f	kg CO2 eq	8.26E-1	2.84E-3	1.46E-4	8.29E-1	6.45E-3	4.25E-1	3.50E-3	-4.25E-1	8.39E-1
GWP-b	kg CO2 eq	-2.99E-1	1.73E-6	-1.54E-6	-2.99E-1	3.92E-6	3.22E-1	3.18E-6	4.63E-2	6.85E-2
GWP-luluc	kg CO2 eq	9.14E-4	1.01E-6	1.49E-7	9.15E-4	2.28E-6	3.40E-5	6.22E-8	-5.65E-4	3.87E-4
ODP	kg CFC11 eq	8.70E-8	6.55E-10	8.26E-12	8.76E-8	1.49E-9	5.67E-9	9.00E-11	-3.21E-8	6.27E-8
AP	mol H+ eq	3.82E-3	1.62E-5	1.47E-6	3.84E-3	3.67E-5	2.46E-4	2.17E-6	-1.32E-3	2.80E-3
EP-fw	kg P eq	2.29E-5	2.34E-8	8.24E-9	2.30E-5	5.31E-8	1.02E-6	2.85E-9	-9.66E-6	1.44E-5
EP-m	kg N eq	6.98E-4	5.79E-6	1.55E-7	7.04E-4	1.31E-5	7.83E-5	2.28E-6	-2.83E-4	5.15E-4
EP-T	mol N eq	7.70E-3	6.38E-5	1.85E-6	7.77E-3	1.45E-4	8.63E-4	8.77E-6	-3.22E-3	5.57E-3
POCP	kg NMVOC eq	3.17E-3	1.83E-5	6.28E-7	3.19E-3	4.14E-5	2.58E-4	3.26E-6	-1.22E-3	2.28E-3
ADP-mm	kg Sb eq	1.05E-4	7.35E-8	1.97E-8	1.05E-4	1.67E-7	8.59E-7	2.17E-9	-5.88E-6	1.00E-4
ADP-f	MJ	2.42E+1	4.36E-2	1.36E-3	2.43E+1	9.90E-2	6.43E-1	6.59E-3	-1.08E+1	1.42E+1
WDP	m3 depriv.	5.00E-1	1.34E-4	5.22E-5	5.00E-1	3.04E-4	1.38E-2	3.30E-5	-2.32E-1	2.83E-1
PM	disease inc.	4.39E-8	2.57E-10	9.08E-12	4.41E-8	5.82E-10	3.53E-9	4.52E-11	-1.69E-8	3.14E-8
IR	kBq U-235 eq	3.60E-2	1.91E-4	1.02E-6	3.61E-2	4.33E-4	2.05E-3	3.09E-5	-1.01E-2	2.85E-2
ETP-fw	CTUe	1.75E+1	3.54E-2	1.21E-2	1.76E+1	8.04E-2	1.13E+0	8.15E-3	-6.49E+0	1.23E+1
HTP-c	CTUh	4.91E-10	1.26E-12	6.17E-13	4.93E-10	2.86E-12	8.97E-11	1.66E-13	-1.90E-10	3.96E-10
HTP-nc	CTUh	9.99E-9	4.22E-11	1.57E-11	1.00E-8	9.58E-11	1.20E-9	4.20E-12	-3.03E-9	8.31E-9
SQP	Pt	2.93E+1	3.73E-2	2.24E-3	2.93E+1	8.47E-2	4.87E-1	1.68E-2	-3.05E+1	-5.50E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.33E+0	6.26E-4	2.40E-2	7.36E+0	1.42E-3	3.02E-2	2.70E-4	-4.94E+0	2.45E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.33E+0	6.26E-4	2.40E-2	7.36E+0	1.42E-3	3.02E-2	2.70E-4	-4.94E+0	2.45E+0
PENRE	MJ	2.60E+1	4.63E-2	1.44E-3	2.60E+1	1.05E-1	6.85E-1	6.99E-3	-1.17E+1	1.51E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.60E+1	4.63E-2	1.44E-3	2.60E+1	1.05E-1	6.85E-1	6.99E-3	-1.17E+1	1.51E+1
PET	MJ	3.33E+1	4.69E-2	2.55E-2	3.34E+1	1.07E-1	7.15E-1	7.26E-3	-1.66E+1	1.76E+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	1.02E-2	4.94E-6	1.46E-6	1.02E-2	1.12E-5	6.51E-4	8.14E-6	-4.57E-3	6.31E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.75E-6	1.12E-7	2.73E-13	9.86E-6	2.53E-7	1.27E-6	7.92E-9	-6.53E-6	4.87E-6
NHWD	kg	6.75E-2	2.70E-3	1.05E-6	7.02E-2	6.14E-3	3.64E-2	2.89E-2	-2.36E-2	1.18E-1
RWD	kg	4.35E-5	2.97E-7	1.10E-13	4.38E-5	6.73E-7	2.65E-6	4.31E-8	-1.04E-5	3.67E-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



Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
<https://www.ecochain.com>
+31 20 3035 777