Environmental Profile

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

Ecochain v3.5.80

Product:	3020547 - X-Stream/Tegra Adaptor BK 500 NL
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

Wavin X-Stream is a new generation of double-walled pipes and □ttings made of polypropylene. The system is

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

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]

Statement of Confidentiality

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	9.88E+0	2.19E-1	1.00E-1	1.02E+1	2.71E-1	2.21E+1	1.28E-1	-1.44E+1	1.83E+1
GWP-f	kg CO2 eq	2.39E+1	2.19E-1	1.01E-1	2.42E+1	2.71E-1	7.96E+0	1.28E-1	-1.44E+1	1.82E+1
GWP-b	kg CO2 eq	-1.40E+1	1.33E-4	-1.07E-3	-1.40E+1	1.65E-4	1.42E+1	1.11E-4	-4.43E-2	1.11E-1
GWP-luluc	kg CO2 eq	1.30E-2	7.75E-5	1.03E-4	1.32E-2	9.60E-5	1.56E-3	2.17E-6	-9.19E-3	5.67E-3
ODP	kg CFC11 eq	8.13E-7	5.05E-8	5.70E-9	8.69E-7	6.25E-8	2.14E-7	3.21E-9	-7.35E-7	4.14E-7
AP	mol H+ eq	8.96E-2	1.25E-3	1.02E-3	9.19E-2	1.54E-3	8.90E-3	7.64E-5	-4.79E-2	5.45E-2
EP-fw	kg P eq	4.11E-4	1.80E-6	5.69E-6	4.19E-4	2.23E-6	4.51E-5	9.95E-8	-2.30E-4	2.36E-4
EP-m	kg N eq	1.64E-2	4.47E-4	1.07E-4	1.70E-2	5.53E-4	2.64E-3	4.99E-5	-9.65E-3	1.06E-2
EP-T	mol N eq	1.85E-1	4.92E-3	1.28E-3	1.91E-1	6.09E-3	2.91E-2	3.10E-4	-1.09E-1	1.17E-1
POCP	kg NMVOC eq	8.20E-2	1.41E-3	4.33E-4	8.38E-2	1.74E-3	9.11E-3	1.17E-4	-4.63E-2	4.85E-2
ADP-mm	kg Sb eq	3.26E-4	5.67E-6	1.36E-5	3.45E-4	7.02E-6	3.46E-5	7.70E-8	-1.17E-4	2.70E-4
ADP-f	MJ	7.93E+2	3.36E+0	9.37E-1	7.97E+2	4.16E+0	2.76E+1	2.34E-1	-4.28E+2	4.02E+2
WDP	m3 depriv.	1.51E+1	1.03E-2	3.60E-2	1.52E+1	1.28E-2	5.24E-1	1.15E-3	-7.47E+0	8.26E+0
PM	disease inc.	9.65E-7	1.98E-8	6.27E-9	9.91E-7	2.45E-8	1.44E-7	1.61E-9	-5.49E-7	6.12E-7
IR	kBq U-235 eq	5.16E-1	1.47E-2	7.03E-4	5.31E-1	1.82E-2	8.49E-2	1.09E-3	-2.78E-1	3.57E-1
ETP-fw	CTUe	1.75E+2	2.73E+0	8.35E+0	1.86E+2	3.38E+0	3.08E+1	1.96E-1	-1.05E+2	1.15E+2
HTP-c	CTUh	1.17E-8	9.72E-11	4.26E-10	1.22E-8	1.20E-10	3.80E-9	5.70E-12	-7.21E-9	8.93E-9
HTP-nc	CTUh	1.92E-7	3.26E-9	1.08E-8	2.07E-7	4.03E-9	4.59E-8	1.26E-10	-1.03E-7	1.54E-7
SQP	Pt	1.21E+3	2.88E+0	1.55E+0	1.22E+3	3.56E+0	2.20E+1	6.01E-1	-1.00E+3	2.38E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.01E+2	4.83E-2	1.66E+1	2.17E+2	5.97E-2	1.34E+0	9.08E-3	-1.54E+2	6.50E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.01E+2	4.83E-2	1.66E+1	2.17E+2	5.97E-2	1.34E+0	9.08E-3	-1.54E+2	6.50E+1
PENRE	MJ	8.51E+2	3.57E+0	9.97E-1	8.56E+2	4.42E+0	2.93E+1	2.48E-1	-4.60E+2	4.29E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.51E+2	3.57E+0	9.97E-1	8.56E+2	4.42E+0	2.93E+1	2.48E-1	-4.60E+2	4.29E+2
PET	MJ	1.05E+3	3.62E+0	1.76E+1	1.07E+3	4.48E+0	3.07E+1	2.57E-1	-6.14E+2	4.94E+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	2.37E-1	3.81E-4	1.01E-3	2.38E-1	4.71E-4	1.58E-2	2.89E-4	-1.19E-1	1.35E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.98E-4	8.60E-6	1.89E-10	2.06E-4	1.06E-5	4.56E-5	2.82E-7	-1.69E-4	9.35E-5
NHWD	kg	1.49E+0	2.08E-1	7.28E-4	1.70E+0	2.58E-1	1.36E+0	1.03E+0	-8.62E-1	3.49E+0
RWD	kg	5.07E-4	2.29E-5	7.57E-11	5.30E-4	2.83E-5	1.08E-4	1.53E-6	-2.76E-4	3.93E-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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