Environmental Profile

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

Ecochain v3.5.80

Product:	3020546 - X-Stream/Tegra Adaptor BK 400 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	8.55E+0	1.09E-1	1.04E-1	8.76E+0	1.84E-1	1.28E+1	8.67E-2	-9.51E+0	1.23E+1
GWP-f	kg CO2 eq	1.59E+1	1.08E-1	1.05E-1	1.61E+1	1.84E-1	5.38E+0	8.67E-2	-9.48E+0	1.22E+1
GWP-b	kg CO2 eq	-7.31E+0	6.59E-5	-1.10E-3	-7.31E+0	1.12E-4	7.41E+0	7.56E-5	-3.00E-2	7.39E-2
GWP-luluc	kg CO2 eq	7.67E-3	3.84E-5	1.07E-4	7.82E-3	6.51E-5	1.05E-3	1.46E-6	-5.19E-3	3.74E-3
ODP	kg CFC11 eq	4.99E-7	2.50E-8	5.92E-9	5.29E-7	4.24E-8	1.42E-7	2.17E-9	-4.58E-7	2.58E-7
AP	mol H+ eq	5.86E-2	6.18E-4	1.06E-3	6.03E-2	1.05E-3	5.95E-3	5.18E-5	-3.05E-2	3.68E-2
EP-fw	kg P eq	2.63E-4	8.92E-7	5.90E-6	2.70E-4	1.51E-6	3.04E-5	6.73E-8	-1.42E-4	1.61E-4
EP-m	kg N eq	1.05E-2	2.21E-4	1.11E-4	1.09E-2	3.75E-4	1.76E-3	3.39E-5	-6.02E-3	7.01E-3
EP-T	mol N eq	1.18E-1	2.44E-3	1.33E-3	1.22E-1	4.13E-3	1.94E-2	2.10E-4	-6.79E-2	7.78E-2
POCP	kg NMVOC eq	5.30E-2	6.96E-4	4.49E-4	5.42E-2	1.18E-3	6.07E-3	7.90E-5	-2.92E-2	3.23E-2
ADP-mm	kg Sb eq	2.06E-4	2.81E-6	1.41E-5	2.23E-4	4.76E-6	2.32E-5	5.21E-8	-7.42E-5	1.77E-4
ADP-f	MJ	5.32E+2	1.66E+0	9.72E-1	5.35E+2	2.82E+0	1.85E+1	1.59E-1	-2.85E+2	2.71E+2
WDP	m3 depriv.	1.02E+1	5.11E-3	3.74E-2	1.02E+1	8.66E-3	3.55E-1	7.66E-4	-4.98E+0	5.62E+0
PM	disease inc.	6.05E-7	9.79E-9	6.50E-9	6.22E-7	1.66E-8	9.68E-8	1.09E-9	-3.33E-7	4.03E-7
IR	kBq U-235 eq	3.30E-1	7.28E-3	7.29E-4	3.38E-1	1.23E-2	5.67E-2	7.36E-4	-1.74E-1	2.33E-1
ETP-fw	CTUe	1.11E+2	1.35E+0	8.66E+0	1.21E+2	2.29E+0	2.07E+1	1.33E-1	-6.25E+1	8.20E+1
HTP-c	CTUh	7.00E-9	4.81E-11	4.42E-10	7.49E-9	8.16E-11	2.53E-9	3.85E-12	-4.10E-9	6.00E-9
HTP-nc	CTUh	1.25E-7	1.61E-9	1.12E-8	1.38E-7	2.73E-9	3.09E-8	8.54E-11	-6.30E-8	1.09E-7
SQP	Pt	6.39E+2	1.42E+0	1.60E+0	6.42E+2	2.41E+0	1.48E+1	4.07E-1	-5.28E+2	1.31E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.15E+2	2.39E-2	1.72E+1	1.32E+2	4.05E-2	9.02E-1	6.16E-3	-8.13E+1	5.19E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.15E+2	2.39E-2	1.72E+1	1.32E+2	4.05E-2	9.02E-1	6.16E-3	-8.13E+1	5.19E+1
PENRE	MJ	5.71E+2	1.77E+0	1.03E+0	5.74E+2	3.00E+0	1.97E+1	1.68E-1	-3.07E+2	2.89E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.71E+2	1.77E+0	1.03E+0	5.74E+2	3.00E+0	1.97E+1	1.68E-1	-3.07E+2	2.89E+2
PET	MJ	6.86E+2	1.79E+0	1.82E+1	7.06E+2	3.04E+0	2.06E+1	1.74E-1	-3.89E+2	3.41E+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	1.58E-1	1.88E-4	1.05E-3	1.59E-1	3.19E-4	1.06E-2	1.96E-4	-7.84E-2	9.17E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.17E-4	4.26E-6	1.96E-10	1.21E-4	7.22E-6	3.05E-5	1.91E-7	-1.03E-4	5.62E-5
NHWD	kg	8.87E-1	1.03E-1	7.55E-4	9.91E-1	1.75E-1	9.12E-1	6.99E-1	-4.99E-1	2.28E+0
RWD	kg	3.19E-4	1.13E-5	7.85E-11	3.30E-4	1.92E-5	7.23E-5	1.04E-6	-1.70E-4	2.52E-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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