Environmental Profile

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

Ecochain v3.5.64

Product:	3010736 - ED Tech PP Pipe HTEM 160 L=3 S/PL
Unit:	1 piece
Manufacturer:	Wavin - IT - SM Maddalena

PP SWR (ED Tech) products made of PP for waste water discharge are the ideal solution for anyone who wants a quick and easy connection system. A push-fit system, made watertight using elastomeric seals. Triple-layer pipes, with a white inner layer for easier inspection. Low linear expansion.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	24-11-2022
End of validity:	24-11-2027
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 - IT - SM Maddalena (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 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF 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	6.83E+0	5.83E-1	5.38E-1	7.95E+0	1.19E-1	4.36E+0	4.76E-2	-4.76E+0	7.72E+0
GWP-f	kg CO2 eq	7.95E+0	5.83E-1	4.80E-1	9.02E+0	1.19E-1	3.21E+0	4.76E-2	-4.74E+0	7.64E+0
GWP-b	kg CO2 eq	-1.13E+0	3.54E-4	3.04E-2	-1.10E+0	7.21E-5	1.15E+0	4.22E-5	-1.62E-2	4.29E-2
GWP-luluc	kg CO2 eq	2.80E-3	2.06E-4	2.73E-2	3.03E-2	4.20E-5	6.67E-4	8.72E-7	-1.30E-3	2.97E-2
ODP	kg CFC11 eq	2.02E-7	1.34E-7	5.23E-8	3.88E-7	2.73E-8	8.81E-8	1.34E-9	-1.89E-7	3.17E-7
AP	mol H+ eq	3.10E-2	3.32E-3	1.62E-3	3.59E-2	6.76E-4	3.68E-3	3.14E-5	-1.39E-2	2.65E-2
EP-fw	kg P eq	1.30E-4	4.80E-6	6.41E-6	1.41E-4	9.76E-7	1.93E-5	3.94E-8	-5.65E-5	1.05E-4
EP-m	kg N eq	5.04E-3	1.19E-3	3.10E-4	6.54E-3	2.42E-4	1.07E-3	2.00E-5	-2.53E-3	5.34E-3
EP-T	mol N eq	5.73E-2	1.31E-2	3.42E-3	7.39E-2	2.67E-3	1.18E-2	1.27E-4	-2.85E-2	6.00E-2
POCP	kg NMVOC eq	2.56E-2	3.74E-3	1.08E-3	3.05E-2	7.62E-4	3.73E-3	4.67E-5	-1.26E-2	2.24E-2
ADP-mm	kg Sb eq	1.74E-4	1.51E-5	8.79E-6	1.98E-4	3.07E-6	1.45E-5	3.13E-8	-3.39E-5	1.82E-4
ADP-f	MJ	2.76E+2	8.95E+0	6.62E+0	2.92E+2	1.82E+0	1.17E+1	9.66E-2	-1.48E+2	1.58E+2
WDP	m3 depriv.	5.59E+0	2.75E-2	1.52E+0	7.13E+0	5.59E-3	2.26E-1	4.87E-4	-2.56E+0	4.81E+0
PM	disease inc.	2.92E-7	5.26E-8	1.96E-8	3.64E-7	1.07E-8	6.07E-8	6.60E-10	-1.25E-7	3.11E-7
IR	kBq U-235 eq	1.65E-1	3.91E-2	6.46E-3	2.10E-1	7.96E-3	3.53E-2	4.45E-4	-7.38E-2	1.80E-1
ETP-fw	CTUe	5.24E+1	7.27E+0	7.95E+0	6.77E+1	1.48E+0	1.33E+1	7.95E-2	-2.35E+1	5.90E+1
HTP-c	CTUh	2.64E-9	2.59E-10	4.83E-10	3.38E-9	5.26E-11	1.57E-9	2.25E-12	-1.05E-9	3.96E-9
HTP-nc	CTUh	5.80E-8	8.66E-9	8.77E-9	7.54E-8	1.76E-9	1.93E-8	5.01E-11	-2.48E-8	7.18E-8
SQP	Pt	1.12E+2	7.66E+0	1.37E+0	1.21E+2	1.56E+0	9.34E+0	2.44E-1	-6.14E+1	7.05E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.89E+1	1.28E-1	1.47E+1	3.38E+1	2.61E-2	5.71E-1	3.51E-3	-1.09E+1	2.35E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.89E+1	1.28E-1	1.47E+1	3.38E+1	2.61E-2	5.71E-1	3.51E-3	-1.09E+1	2.35E+1
PENRE	MJ	2.96E+2	9.50E+0	7.24E+0	3.13E+2	1.93E+0	1.24E+1	1.03E-1	-1.59E+2	1.68E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.96E+2	9.50E+0	7.24E+0	3.13E+2	1.93E+0	1.24E+1	1.03E-1	-1.59E+2	1.68E+2
PET	MJ	3.15E+2	9.63E+0	2.20E+1	3.47E+2	1.96E+0	1.30E+1	1.06E-1	-1.70E+2	1.92E+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	8.73E-2	1.01E-3	3.61E-2	1.24E-1	2.06E-4	6.79E-3	1.19E-4	-3.89E-2	9.26E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.56E-5	2.29E-5	7.36E-6	7.58E-5	4.66E-6	1.90E-5	1.16E-7	-3.84E-5	6.12E-5
NHWD	kg	4.51E-1	5.55E-1	7.14E-2	1.08E+0	1.13E-1	5.80E-1	4.54E-1	-1.43E-1	2.08E+0
RWD	kg	1.52E-4	6.09E-5	7.85E-6	2.21E-4	1.24E-5	4.48E-5	6.33E-7	-6.80E-5	2.11E-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

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