Environmental Profile

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

Ecochain v3.5.64

Product:	3010755 - ED Tech PP Pipe HTDM 90 L=2 S/S
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	1.93E+0	1.60E-1	1.38E-1	2.23E+0	3.19E-2	1.14E+0	1.29E-2	-1.29E+0	2.13E+0
GWP-f	kg CO2 eq	2.17E+0	1.60E-1	1.23E-1	2.45E+0	3.18E-2	9.02E-1	1.29E-2	-1.29E+0	2.11E+0
GWP-b	kg CO2 eq	-2.31E-1	9.74E-5	7.80E-3	-2.23E-1	1.93E-5	2.38E-1	1.15E-5	-4.31E-3	1.04E-2
GWP-luluc	kg CO2 eq	7.46E-4	5.68E-5	7.02E-3	7.82E-3	1.13E-5	1.78E-4	2.37E-7	-3.34E-4	7.68E-3
ODP	kg CFC11 eq	6.39E-8	3.70E-8	1.34E-8	1.14E-7	7.34E-9	2.35E-8	3.62E-10	-5.21E-8	9.34E-8
AP	mol H+ eq	8.50E-3	9.13E-4	4.16E-4	9.83E-3	1.81E-4	9.83E-4	8.50E-6	-3.69E-3	7.32E-3
EP-fw	kg P eq	3.58E-5	1.32E-6	1.65E-6	3.88E-5	2.62E-7	5.14E-6	1.07E-8	-1.50E-5	2.92E-5
EP-m	kg N eq	1.37E-3	3.27E-4	7.95E-5	1.78E-3	6.49E-5	2.86E-4	5.59E-6	-6.72E-4	1.46E-3
EP-T	mol N eq	1.56E-2	3.60E-3	8.78E-4	2.00E-2	7.15E-4	3.15E-3	3.45E-5	-7.52E-3	1.64E-2
POCP	kg NMVOC eq	7.00E-3	1.03E-3	2.78E-4	8.31E-3	2.04E-4	9.94E-4	1.27E-5	-3.36E-3	6.15E-3
ADP-mm	kg Sb eq	6.41E-5	4.15E-6	2.26E-6	7.05E-5	8.24E-7	3.88E-6	8.50E-9	-9.63E-6	6.56E-5
ADP-f	MJ	7.50E+1	2.46E+0	1.70E+0	7.92E+1	4.89E-1	3.11E+0	2.62E-2	-3.98E+1	4.30E+1
WDP	m3 depriv.	1.52E+0	7.55E-3	3.90E-1	1.92E+0	1.50E-3	6.08E-2	1.33E-4	-6.85E-1	1.30E+0
PM	disease inc.	7.82E-8	1.45E-8	5.05E-9	9.77E-8	2.87E-9	1.62E-8	1.79E-10	-3.28E-8	8.41E-8
IR	kBq U-235 eq	4.75E-2	1.08E-2	1.66E-3	5.99E-2	2.14E-3	9.39E-3	1.21E-4	-1.98E-2	5.18E-2
ETP-fw	CTUe	1.48E+1	2.00E+0	2.04E+0	1.88E+1	3.97E-1	3.60E+0	2.20E-2	-6.04E+0	1.68E+1
HTP-c	CTUh	7.04E-10	7.11E-11	1.24E-10	9.00E-10	1.41E-11	4.16E-10	6.13E-13	-2.74E-10	1.06E-9
HTP-nc	CTUh	1.59E-8	2.38E-9	2.25E-9	2.05E-8	4.73E-10	5.18E-9	1.37E-11	-6.52E-9	1.96E-8
SQP	Pt	2.38E+1	2.11E+0	3.52E-1	2.63E+1	4.18E-1	2.49E+0	6.62E-2	-1.42E+1	1.50E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.17E+0	3.53E-2	3.79E+0	7.99E+0	7.01E-3	1.52E-1	9.55E-4	-2.53E+0	5.62E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.17E+0	3.53E-2	3.79E+0	7.99E+0	7.01E-3	1.52E-1	9.55E-4	-2.53E+0	5.62E+0
PENRE	MJ	8.05E+1	2.61E+0	1.86E+0	8.50E+1	5.19E-1	3.31E+0	2.78E-2	-4.29E+1	4.59E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.05E+1	2.61E+0	1.86E+0	8.50E+1	5.19E-1	3.31E+0	2.78E-2	-4.29E+1	4.59E+1
PET	MJ	8.47E+1	2.65E+0	5.65E+0	9.30E+1	5.26E-1	3.46E+0	2.87E-2	-4.54E+1	5.16E+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	2.40E-2	2.79E-4	9.28E-3	3.36E-2	5.53E-5	1.86E-3	3.21E-5	-1.04E-2	2.51E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.25E-5	6.29E-6	1.89E-6	2.06E-5	1.25E-6	5.10E-6	3.14E-8	-1.05E-5	1.65E-5
NHWD	kg	1.22E-1	1.53E-1	1.83E-2	2.93E-1	3.03E-2	1.54E-1	1.23E-1	-3.75E-2	5.63E-1
RWD	kg	4.54E-5	1.67E-5	2.02E-6	6.42E-5	3.32E-6	1.19E-5	1.72E-7	-1.83E-5	6.13E-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