Environmental Profile

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

Ecochain v3.5.64

Product:	3010968 - Ed Tech Branch HTEA 45° 125x125
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	1.11E+0	7.35E-2	7.65E-2	1.26E+0	1.42E-2	8.68E-1	6.98E-3	-6.51E-1	1.49E+0
GWP-f	kg CO2 eq	1.35E+0	7.34E-2	6.55E-2	1.49E+0	1.42E-2	5.54E-1	6.98E-3	-7.95E-1	1.27E+0
GWP-b	kg CO2 eq	-2.46E-1	4.46E-5	5.53E-3	-2.41E-1	8.63E-6	3.14E-1	6.16E-6	1.45E-1	2.19E-1
GWP-luluc	kg CO2 eq	1.34E-3	2.60E-5	5.53E-3	6.90E-3	5.03E-6	8.13E-5	1.21E-7	-1.27E-3	5.72E-3
ODP	kg CFC11 eq	7.78E-8	1.69E-8	6.57E-9	1.01E-7	3.27E-9	1.25E-8	1.77E-10	-4.47E-8	7.26E-8
AP	mol H+ eq	5.52E-3	4.18E-4	2.64E-4	6.21E-3	8.09E-5	5.18E-4	4.23E-6	-2.73E-3	4.08E-3
EP-fw	kg P eq	3.11E-5	6.04E-7	1.02E-6	3.28E-5	1.17E-7	2.40E-6	5.54E-9	-2.14E-5	1.39E-5
EP-m	kg N eq	1.06E-3	1.50E-4	4.46E-5	1.25E-3	2.90E-5	1.59E-4	3.29E-6	-5.46E-4	8.99E-4
EP-T	mol N eq	1.16E-2	1.65E-3	5.01E-4	1.37E-2	3.19E-4	1.75E-3	1.71E-5	-6.17E-3	9.63E-3
POCP	kg NMVOC eq	4.67E-3	4.71E-4	1.56E-4	5.30E-3	9.12E-5	5.41E-4	6.41E-6	-2.36E-3	3.57E-3
ADP-mm	kg Sb eq	7.74E-5	1.90E-6	1.59E-6	8.09E-5	3.68E-7	2.00E-6	4.26E-9	-7.66E-6	7.57E-5
ADP-f	MJ	4.34E+1	1.13E+0	8.62E-1	4.54E+1	2.18E-1	1.49E+0	1.29E-2	-2.27E+1	2.45E+1
WDP	m3 depriv.	8.78E-1	3.46E-3	3.05E-1	1.19E+0	6.69E-4	2.88E-2	6.68E-5	-5.66E-1	6.50E-1
PM	disease inc.	5.92E-8	6.62E-9	2.65E-9	6.84E-8	1.28E-9	8.15E-9	8.86E-11	-3.34E-8	4.45E-8
IR	kBq U-235 eq	4.03E-2	4.92E-3	8.04E-4	4.61E-2	9.53E-4	4.72E-3	6.00E-5	-2.06E-2	3.12E-2
ETP-fw	CTUe	2.81E+1	9.15E-1	1.36E+0	3.03E+1	1.77E-1	2.01E+0	1.24E-2	-1.47E+1	1.78E+1
HTP-c	CTUh	5.02E-10	3.26E-11	7.25E-11	6.07E-10	6.30E-12	2.06E-10	3.20E-13	-2.85E-10	5.34E-10
HTP-nc	CTUh	1.15E-8	1.09E-9	1.50E-9	1.41E-8	2.11E-10	2.58E-9	7.36E-12	-6.71E-9	1.02E-8
SQP	Pt	2.90E+1	9.64E-1	1.57E-1	3.01E+1	1.87E-1	1.15E+0	3.31E-2	-4.45E+1	-1.30E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.95E+0	1.62E-2	2.98E+0	7.95E+0	3.13E-3	7.08E-2	5.08E-4	-7.67E+0	3.54E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.95E+0	1.62E-2	2.98E+0	7.95E+0	3.13E-3	7.08E-2	5.08E-4	-7.67E+0	3.54E-1
PENRE	MJ	4.66E+1	1.20E+0	9.40E-1	4.87E+1	2.32E-1	1.59E+0	1.37E-2	-2.44E+1	2.61E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.66E+1	1.20E+0	9.40E-1	4.87E+1	2.32E-1	1.59E+0	1.37E-2	-2.44E+1	2.61E+1
PET	MJ	5.15E+1	1.21E+0	3.92E+0	5.66E+1	2.35E-1	1.66E+0	1.42E-2	-3.21E+1	2.65E+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	1.55E-2	1.27E-4	7.24E-3	2.29E-2	2.47E-5	1.02E-3	1.59E-5	-1.10E-2	1.29E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.15E-5	2.88E-6	8.38E-7	1.52E-5	5.58E-7	2.68E-6	1.55E-8	-8.93E-6	9.54E-6
NHWD	kg	9.25E-2	6.98E-2	8.16E-3	1.70E-1	1.35E-2	7.50E-2	5.68E-2	-3.71E-2	2.79E-1
RWD	kg	4.31E-5	7.66E-6	8.94E-7	5.17E-5	1.48E-6	6.09E-6	8.43E-8	-1.97E-5	3.96E-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