Environmental Profile

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

Ecochain v3.5.64

Product:	3010960 - Ed Tech Branch Reduced HTEA 45° 90x50
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	2.93E-1	2.22E-2	1.92E-2	3.34E-1	3.70E-3	2.51E-1	1.85E-3	-1.74E-1	4.17E-1
GWP-f	kg CO2 eq	3.65E-1	2.22E-2	1.64E-2	4.04E-1	3.69E-3	1.61E-1	1.85E-3	-2.11E-1	3.60E-1
GWP-b	kg CO2 eq	-7.30E-2	1.35E-5	1.39E-3	-7.16E-2	2.24E-6	9.00E-2	1.64E-6	3.73E-2	5.57E-2
GWP-luluc	kg CO2 eq	3.67E-4	7.85E-6	1.39E-3	1.76E-3	1.31E-6	2.07E-5	3.26E-8	-3.30E-4	1.45E-3
ODP	kg CFC11 eq	2.53E-8	5.11E-9	1.65E-9	3.21E-8	8.51E-10	3.23E-9	4.70E-11	-1.25E-8	2.38E-8
AP	mol H+ eq	1.54E-3	1.26E-4	6.63E-5	1.74E-3	2.10E-5	1.35E-4	1.13E-6	-7.10E-4	1.18E-3
EP-fw	kg P eq	8.76E-6	1.82E-7	2.55E-7	9.20E-6	3.04E-8	6.14E-7	1.49E-9	-5.56E-6	4.29E-6
EP-m	kg N eq	2.92E-4	4.52E-5	1.12E-5	3.48E-4	7.53E-6	4.17E-5	9.43E-7	-1.43E-4	2.55E-4
EP-T	mol N eq	3.20E-3	4.98E-4	1.26E-4	3.82E-3	8.29E-5	4.59E-4	4.57E-6	-1.62E-3	2.75E-3
POCP	kg NMVOC eq	1.29E-3	1.42E-4	3.91E-5	1.48E-3	2.37E-5	1.41E-4	1.71E-6	-6.18E-4	1.02E-3
ADP-mm	kg Sb eq	2.82E-5	5.74E-7	4.00E-7	2.92E-5	9.55E-8	5.13E-7	1.14E-9	-2.24E-6	2.75E-5
ADP-f	MJ	1.16E+1	3.40E-1	2.16E-1	1.21E+1	5.67E-2	3.83E-1	3.44E-3	-5.90E+0	6.66E+0
WDP	m3 depriv.	2.36E-1	1.04E-3	7.65E-2	3.14E-1	1.74E-4	7.56E-3	1.86E-5	-1.45E-1	1.77E-1
PM	disease inc.	1.68E-8	2.00E-9	6.64E-10	1.95E-8	3.33E-10	2.09E-9	2.36E-11	-8.74E-9	1.32E-8
IR	kBq U-235 eq	1.22E-2	1.49E-3	2.02E-4	1.39E-2	2.48E-4	1.21E-3	1.60E-5	-5.40E-3	9.99E-3
ETP-fw	CTUe	7.72E+0	2.76E-1	3.41E-1	8.34E+0	4.60E-2	5.47E-1	3.52E-3	-3.82E+0	5.12E+0
HTP-c	CTUh	1.44E-10	9.83E-12	1.82E-11	1.72E-10	1.64E-12	5.32E-11	8.62E-14	-7.70E-11	1.50E-10
HTP-nc	CTUh	3.25E-9	3.29E-10	3.77E-10	3.96E-9	5.49E-11	6.72E-10	2.02E-12	-1.75E-9	2.94E-9
SQP	Pt	8.36E+0	2.91E-1	3.94E-2	8.69E+0	4.85E-2	2.94E-1	8.81E-3	-1.21E+1	-3.05E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.41E+0	4.88E-3	7.48E-1	2.16E+0	8.13E-4	1.81E-2	1.36E-4	-2.07E+0	1.12E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.41E+0	4.88E-3	7.48E-1	2.16E+0	8.13E-4	1.81E-2	1.36E-4	-2.07E+0	1.12E-1
PENRE	MJ	1.24E+1	3.61E-1	2.36E-1	1.30E+1	6.02E-2	4.08E-1	3.65E-3	-6.36E+0	7.11E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.24E+1	3.61E-1	2.36E-1	1.30E+1	6.02E-2	4.08E-1	3.65E-3	-6.36E+0	7.11E+0
PET	MJ	1.38E+1	3.66E-1	9.84E-1	1.52E+1	6.10E-2	4.26E-1	3.79E-3	-8.43E+0	7.22E+0
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	4.32E-3	3.85E-5	1.82E-3	6.18E-3	6.41E-6	2.85E-4	4.24E-6	-2.84E-3	3.63E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.39E-6	8.70E-7	2.10E-7	4.47E-6	1.45E-7	6.99E-7	4.15E-9	-2.49E-6	2.83E-6
NHWD	kg	2.64E-2	2.11E-2	2.05E-3	4.95E-2	3.51E-3	1.96E-2	1.51E-2	-9.93E-3	7.78E-2
RWD	kg	1.36E-5	2.31E-6	2.24E-7	1.61E-5	3.85E-7	1.56E-6	2.25E-8	-5.24E-6	1.29E-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