Environmental Profile

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

Ecochain v3.5.64

Product:	3010962 - Ed Tech Branch HTEA 45° 90x90
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	4.44E-1	3.25E-2	2.90E-2	5.05E-1	5.52E-3	3.43E-1	2.75E-3	-2.59E-1	5.97E-1
GWP-f	kg CO2 eq	5.31E-1	3.25E-2	2.48E-2	5.88E-1	5.51E-3	2.33E-1	2.75E-3	-3.07E-1	5.22E-1
GWP-b	kg CO2 eq	-8.73E-2	1.97E-5	2.09E-3	-8.52E-2	3.35E-6	1.10E-1	2.44E-6	4.85E-2	7.30E-2
GWP-luluc	kg CO2 eq	4.90E-4	1.15E-5	2.09E-3	2.59E-3	1.95E-6	3.09E-5	4.79E-8	-4.34E-4	2.19E-3
ODP	kg CFC11 eq	3.45E-8	7.48E-9	2.49E-9	4.44E-8	1.27E-9	4.71E-9	6.98E-11	-1.75E-8	3.30E-8
AP	mol H+ eq	2.20E-3	1.85E-4	1.00E-4	2.48E-3	3.14E-5	1.97E-4	1.67E-6	-1.01E-3	1.70E-3
EP-fw	kg P eq	1.22E-5	2.67E-7	3.85E-7	1.28E-5	4.54E-8	9.12E-7	2.19E-9	-7.56E-6	6.25E-6
EP-m	kg N eq	4.11E-4	6.62E-5	1.69E-5	4.94E-4	1.12E-5	6.06E-5	1.38E-6	-2.01E-4	3.66E-4
EP-T	mol N eq	4.51E-3	7.30E-4	1.90E-4	5.43E-3	1.24E-4	6.66E-4	6.77E-6	-2.27E-3	3.96E-3
POCP	kg NMVOC eq	1.85E-3	2.09E-4	5.89E-5	2.12E-3	3.54E-5	2.05E-4	2.53E-6	-8.79E-4	1.49E-3
ADP-mm	kg Sb eq	3.86E-5	8.40E-7	6.03E-7	4.00E-5	1.43E-7	7.52E-7	1.68E-9	-3.16E-6	3.78E-5
ADP-f	MJ	1.71E+1	4.99E-1	3.26E-1	1.79E+1	8.46E-2	5.66E-1	5.10E-3	-8.70E+0	9.85E+0
WDP	m3 depriv.	3.46E-1	1.53E-3	1.15E-1	4.63E-1	2.60E-4	1.12E-2	2.62E-5	-2.06E-1	2.69E-1
PM	disease inc.	2.35E-8	2.93E-9	1.00E-9	2.75E-8	4.97E-10	3.07E-9	3.50E-11	-1.20E-8	1.90E-8
IR	kBq U-235 eq	1.71E-2	2.18E-3	3.04E-4	1.96E-2	3.70E-4	1.78E-3	2.38E-5	-7.48E-3	1.43E-2
ETP-fw	CTUe	1.03E+1	4.05E-1	5.15E-1	1.13E+1	6.87E-2	7.93E-1	5.15E-3	-5.08E+0	7.04E+0
HTP-c	CTUh	1.97E-10	1.44E-11	2.74E-11	2.39E-10	2.44E-12	7.77E-11	1.27E-13	-1.03E-10	2.16E-10
HTP-nc	CTUh	4.55E-9	4.83E-10	5.69E-10	5.61E-9	8.19E-11	9.87E-10	2.97E-12	-2.42E-9	4.26E-9
SQP	Pt	1.03E+1	4.27E-1	5.94E-2	1.08E+1	7.24E-2	4.37E-1	1.31E-2	-1.53E+1	-3.92E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.77E+0	7.15E-3	1.13E+0	2.91E+0	1.21E-3	2.69E-2	2.02E-4	-2.63E+0	3.06E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.77E+0	7.15E-3	1.13E+0	2.91E+0	1.21E-3	2.69E-2	2.02E-4	-2.63E+0	3.06E-1
PENRE	MJ	1.83E+1	5.29E-1	3.56E-1	1.92E+1	8.98E-2	6.03E-1	5.41E-3	-9.38E+0	1.05E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.83E+1	5.29E-1	3.56E-1	1.92E+1	8.98E-2	6.03E-1	5.41E-3	-9.38E+0	1.05E+1
PET	MJ	2.01E+1	5.36E-1	1.48E+0	2.21E+1	9.10E-2	6.30E-1	5.61E-3	-1.20E+1	1.08E+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	6.20E-3	5.64E-5	2.74E-3	9.00E-3	9.57E-6	4.14E-4	6.29E-6	-3.96E-3	5.47E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.60E-6	1.28E-6	3.17E-7	6.19E-6	2.16E-7	1.02E-6	6.14E-9	-3.46E-6	3.97E-6
NHWD	kg	3.60E-2	3.09E-2	3.09E-3	7.00E-2	5.24E-3	2.88E-2	2.24E-2	-1.34E-2	1.13E-1
RWD	kg	1.89E-5	3.39E-6	3.38E-7	2.26E-5	5.75E-7	2.29E-6	3.33E-8	-7.22E-6	1.83E-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

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