Environmental Profile

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

Ecochain v4.3.1

Product:	3040181 - PPr Tee GY 50
Unit:	1 piece
Manufacturer:	Wavin - TR - Adana
Location:	Güzelevler Mahallesi
Address:	Girne Bulvarı 294 01321 Adana Turkey

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	04-10-2022
End of validity:	04-10-2027
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 - TR - Adana (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 EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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-f** = EF Resource use, fossils [MJ]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **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	3.97E-1	2.85E-2	1.10E-2	4.36E-1	9.22E-3	3.33E-1	4.34E-3	-2.19E-1	5.64E-1
GWP-f	kg CO2 eq	3.96E-1	2.85E-2	1.06E-2	4.35E-1	9.21E-3	3.16E-1	4.34E-3	-2.38E-1	5.26E-1
GWP-b	kg CO2 eq	1.22E-3	-4.88E-6	3.71E-4	1.59E-3	5.59E-6	1.72E-2	3.77E-6	1.94E-2	3.82E-2
GWP-luluc	kg CO2 eq	2.26E-4	1.80E-5	6.47E-6	2.51E-4	3.26E-6	5.31E-5	7.50E-8	-1.82E-4	1.25E-4
ODP	kg CFC11 eq	9.78E-9	5.81E-9	8.51E-10	1.64E-8	2.12E-9	7.39E-9	1.09E-10	-1.07E-8	1.53E-8
AP	mol H+ eq	1.48E-3	7.92E-4	6.75E-5	2.34E-3	5.25E-5	3.09E-4	2.60E-6	-7.06E-4	2.00E-3
EP-fw	kg P eq	7.28E-6	1.44E-7	8.48E-7	8.28E-6	7.58E-8	1.54E-6	3.42E-9	-4.12E-6	5.78E-6
EP-m	kg N eq	2.64E-4	1.98E-4	2.35E-5	4.85E-4	1.88E-5	9.23E-5	1.68E-6	-1.31E-4	4.66E-4
EP-T	mol N eq	2.93E-3	2.20E-3	1.59E-4	5.29E-3	2.07E-4	1.02E-3	1.06E-5	-1.46E-3	5.05E-3
POCP	kg NMVOC eq	1.26E-3	5.72E-4	5.20E-5	1.88E-3	5.92E-5	3.19E-4	3.96E-6	-6.17E-4	1.64E-3
ADP-f	MJ	1.34E+1	3.75E-1	1.05E-1	1.39E+1	1.41E-1	9.43E-1	7.96E-3	-7.16E+0	7.80E+0
ADP-mm	kg Sb eq	6.11E-6	3.00E-7	8.42E-7	7.25E-6	2.38E-7	1.21E-6	2.63E-9	-1.56E-6	7.15E-6
WDP	m3 depriv.	2.74E-1	7.00E-4	2.19E-2	2.96E-1	4.34E-4	1.80E-2	4.41E-5	-1.47E-1	1.68E-1
PM	disease inc.	1.35E-8	1.16E-9	9.27E-10	1.56E-8	8.32E-10	5.02E-9	5.47E-11	-6.96E-9	1.46E-8
IR	kBq U-235 eq	7.97E-3	1.60E-3	3.16E-4	9.89E-3	6.18E-4	2.90E-3	3.68E-5	-4.44E-3	9.00E-3
ETP-fw	CTUe	4.78E+0	2.60E-1	5.70E-1	5.61E+0	1.15E-1	1.10E+0	6.66E-3	-2.38E+0	4.46E+0
HTP-c	CTUh	1.01E-10	1.55E-11	3.47E-11	1.52E-10	4.09E-12	1.36E-10	1.97E-13	-4.83E-11	2.43E-10
HTP-nc	CTUh	2.81E-9	2.27E-10	6.12E-10	3.65E-9	1.37E-10	1.63E-9	4.31E-12	-1.42E-9	3.99E-9
SQP	Pt	1.38E+0	1.03E-1	1.41E-1	1.62E+0	1.21E-1	7.45E-1	2.04E-2	-3.80E+0	-1.29E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.77E-1	2.89E-3	1.92E+0	2.30E+0	2.03E-3	4.57E-2	3.06E-4	-7.40E-1	1.60E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.77E-1	2.89E-3	1.92E+0	2.30E+0	2.03E-3	4.57E-2	3.06E-4	-7.40E-1	1.60E+0
PENRE	MJ	1.44E+1	3.98E-1	1.12E-1	1.49E+1	1.50E-1	1.00E+0	8.45E-3	-7.72E+0	8.32E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.44E+1	3.98E-1	1.12E-1	1.49E+1	1.50E-1	1.00E+0	8.45E-3	-7.72E+0	8.32E+0
PET	MJ	1.47E+1	4.01E-1	2.03E+0	1.72E+1	1.52E-1	1.05E+0	8.75E-3	-8.46E+0	9.92E+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	4.44E-3	2.45E-5	5.25E-4	4.99E-3	1.60E-5	5.42E-4	9.80E-6	-2.52E-3	3.04E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.11E-6	4.67E-7	6.78E-7	3.25E-6	3.62E-7	1.58E-6	9.63E-9	-2.07E-6	3.14E-6
NHWD	kg	1.98E-2	5.28E-3	1.26E-2	3.77E-2	8.77E-3	4.79E-2	3.50E-2	-6.87E-3	1.23E-1
RWD	kg	7.03E-6	2.58E-6	3.87E-7	1.00E-5	9.62E-7	3.70E-6	5.19E-8	-4.09E-6	1.06E-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	4.59E-1	4.59E-1	0	0	0	0	4.59E-1
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