Environmental Profile

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

Ecochain v4.3.1

Product:	3065530 - PP-RCT Pipe (WT) 20/22 L=4
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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.02E+0	1.49E-2	1.50E-2	1.05E+0	2.57E-2	7.96E-1	1.21E-2	-6.12E-1	1.27E+0
GWP-f	kg CO2 eq	1.02E+0	1.49E-2	1.40E-2	1.05E+0	2.56E-2	7.97E-1	1.21E-2	-6.10E-1	1.27E+0
GWP-b	kg CO2 eq	3.53E-3	4.78E-7	1.04E-3	4.57E-3	1.56E-5	-1.03E-3	1.05E-5	-2.09E-3	1.48E-3
GWP-luluc	kg CO2 eq	4.26E-4	8.10E-6	7.77E-6	4.42E-4	9.07E-6	1.44E-4	2.05E-7	-1.16E-4	4.80E-4
ODP	kg CFC11 eq	1.96E-8	3.12E-9	1.44E-9	2.42E-8	5.91E-9	1.88E-8	3.03E-10	-2.36E-8	2.56E-8
AP	mol H+ eq	3.97E-3	3.05E-4	9.42E-5	4.37E-3	1.46E-4	7.94E-4	7.23E-6	-1.68E-3	3.63E-3
EP-fw	kg P eq	1.60E-5	9.74E-8	1.62E-6	1.77E-5	2.11E-7	4.16E-6	9.42E-9	-6.58E-6	1.55E-5
EP-m	kg N eq	6.18E-4	7.90E-5	5.06E-5	7.47E-4	5.23E-5	2.32E-4	4.71E-6	-2.99E-4	7.37E-4
EP-T	mol N eq	6.90E-3	8.77E-4	2.81E-4	8.06E-3	5.76E-4	2.55E-3	2.94E-5	-3.31E-3	7.91E-3
POCP	kg NMVOC eq	3.19E-3	2.31E-4	8.70E-5	3.51E-3	1.65E-4	8.06E-4	1.10E-5	-1.52E-3	2.97E-3
ADP-f	MJ	3.59E+1	2.05E-1	1.50E-1	3.62E+1	3.94E-1	2.51E+0	2.21E-2	-1.90E+1	2.01E+1
ADP-mm	kg Sb eq	1.33E-5	2.28E-7	7.88E-7	1.44E-5	6.63E-7	3.13E-6	7.28E-9	-3.95E-6	1.42E-5
WDP	m3 depriv.	7.28E-1	5.02E-4	5.70E-2	7.85E-1	1.21E-3	4.92E-2	1.11E-4	-3.26E-1	5.10E-1
PM	disease inc.	3.25E-8	8.42E-10	1.63E-9	3.49E-8	2.31E-9	1.30E-8	1.52E-10	-1.40E-8	3.64E-8
IR	kBq U-235 eq	1.93E-2	8.67E-4	4.91E-4	2.06E-2	1.72E-3	7.56E-3	1.03E-4	-8.79E-3	2.12E-2
ETP-fw	CTUe	5.84E+0	1.56E-1	9.16E-1	6.92E+0	3.20E-1	2.84E+0	1.85E-2	-2.34E+0	7.75E+0
HTP-c	CTUh	2.92E-10	7.55E-12	3.82E-11	3.38E-10	1.14E-11	3.46E-10	5.40E-13	-1.00E-10	5.95E-10
HTP-nc	CTUh	6.95E-9	1.51E-10	7.58E-10	7.86E-9	3.81E-10	4.25E-9	1.19E-11	-2.82E-9	9.68E-9
SQP	Pt	1.49E+0	9.80E-2	1.53E-1	1.74E+0	3.37E-1	2.00E+0	5.68E-2	-5.11E-1	3.63E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.58E-1	1.86E-3	1.69E+0	2.25E+0	5.65E-3	1.24E-1	8.57E-4	-2.34E-1	2.14E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.58E-1	1.86E-3	1.69E+0	2.25E+0	5.65E-3	1.24E-1	8.57E-4	-2.34E-1	2.14E+0
PENRE	MJ	3.85E+1	2.17E-1	1.59E-1	3.89E+1	4.18E-1	2.67E+0	2.35E-2	-2.05E+1	2.15E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.85E+1	2.17E-1	1.59E-1	3.89E+1	4.18E-1	2.67E+0	2.35E-2	-2.05E+1	2.15E+1
PET	MJ	3.91E+1	2.19E-1	1.85E+0	4.11E+1	4.23E-1	2.79E+0	2.43E-2	-2.08E+1	2.36E+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	1.13E-2	1.73E-5	1.35E-3	1.26E-2	4.45E-5	1.45E-3	2.73E-5	-4.88E-3	9.27E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.25E-6	3.53E-7	8.44E-7	6.45E-6	1.01E-6	4.09E-6	2.67E-8	-4.63E-6	6.93E-6
NHWD	kg	5.56E-2	6.34E-3	1.30E-2	7.49E-2	2.44E-2	1.25E-1	9.75E-2	-1.45E-2	3.07E-1
RWD	kg	1.68E-5	1.39E-6	6.51E-7	1.89E-5	2.68E-6	9.58E-6	1.44E-7	-7.94E-6	2.33E-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	4.03E-1	4.03E-1	0	0	0	0	4.03E-1
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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