

Environmental Profile

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

Ecochain v3.5.64



Product: 3018667 - PE Branch 45° 32

Unit: 1 piece

Manufacturer: Wavin - IT - SM Maddalena

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

Use stage

End-of-Life stage

A1 Raw material supply A2 Transport A3 Manufacturing

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Construction process stage

A4 Transport gate to site

A5 Assembly / Construction installation process

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]

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	7.84E-2	1.08E-2	6.30E-3	9.55E-2	1.11E-3	5.40E-2	6.13E-4	-5.44E-2	9.68E-2
GWP-f	kg CO2 eq	9.26E-2	1.08E-2	5.39E-3	1.09E-1	1.11E-3	3.66E-2	6.13E-4	-6.06E-2	8.64E-2
GWP-b	kg CO2 eq	-1.42E-2	6.10E-6	4.56E-4	-1.37E-2	6.71E-7	1.75E-2	4.60E-7	6.20E-3	9.93E-3
GWP-luluc	kg CO2 eq	6.93E-5	3.95E-6	4.55E-4	5.29E-4	3.91E-7	6.42E-6	8.79E-9	-6.41E-5	4.71E-4
ODP	kg CFC11 eq	5.68E-9	2.46E-9	5.41E-10	8.68E-9	2.55E-10	9.13E-10	1.31E-11	-3.34E-9	6.52E-9
AP	mol H+ eq	3.65E-4	7.54E-5	2.18E-5	4.62E-4	6.30E-6	3.76E-5	3.12E-7	-1.96E-4	3.10E-4
EP-fw	kg P eq	1.91E-6	8.62E-8	8.38E-8	2.08E-6	9.10E-9	1.87E-7	4.05E-10	-1.33E-6	9.46E-7
EP-m	kg N eq	6.80E-5	2.51E-5	3.67E-6	9.68E-5	2.25E-6	1.13E-5	2.21E-7	-3.84E-5	7.21E-5
EP-T	mol N eq	7.49E-4	2.77E-4	4.13E-5	1.07E-3	2.48E-5	1.24E-4	1.27E-6	-4.33E-4	7.85E-4
POCP	kg NMVOC eq	3.22E-4	7.79E-5	1.28E-5	4.13E-4	7.10E-6	3.89E-5	4.96E-7	-1.80E-4	2.79E-4
ADP-mm	kg Sb eq	1.26E-6	2.68E-7	1.31E-7	1.66E-6	2.86E-8	1.49E-7	3.13E-10	-4.33E-7	1.41E-6
ADP-f	MJ	3.12E+0	1.64E-1	7.10E-2	3.35E+0	1.70E-2	1.15E-1	9.54E-4	-1.75E+0	1.73E+0
WDP	m3 depriv.	6.72E-2	4.91E-4	2.51E-2	9.28E-2	5.21E-5	2.17E-3	4.37E-6	-4.19E-2	5.32E-2
PM	disease inc.	3.84E-9	9.39E-10	2.18E-10	5.00E-9	9.98E-11	6.13E-10	6.56E-12	-2.08E-9	3.64E-9
IR	kBq U-235 eq	2.98E-3	7.15E-4	6.62E-5	3.76E-3	7.42E-5	3.56E-4	4.45E-6	-1.49E-3	2.71E-3
ETP-fw	CTUe	1.41E+0	1.32E-1	1.12E-1	1.65E+0	1.38E-2	1.35E-1	8.41E-4	-7.82E-1	1.02E+0
HTP-c	CTUh	3.37E-11	4.81E-12	5.97E-12	4.45E-11	4.90E-13	1.56E-11	2.32E-14	-2.04E-11	4.02E-11
HTP-nc	CTUh	6.87E-10	1.55E-10	1.24E-10	9.67E-10	1.64E-11	1.95E-10	5.35E-13	-4.27E-10	7.52E-10
SQP	Pt	1.62E+0	1.35E-1	1.29E-2	1.77E+0	1.45E-2	9.02E-2	2.45E-3	-2.23E+0	-3.57E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.80E-1	2.30E-3	2.46E-1	5.28E-1	2.43E-4	5.53E-3	3.78E-5	-3.87E-1	1.47E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.80E-1	2.30E-3	2.46E-1	5.28E-1	2.43E-4	5.53E-3	3.78E-5	-3.87E-1	1.47E-1
PENRE	MJ	3.34E+0	1.74E-1	7.74E-2	3.59E+0	1.80E-2	1.22E-1	1.01E-3	-1.88E+0	1.85E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.34E+0	1.74E-1	7.74E-2	3.59E+0	1.80E-2	1.22E-1	1.01E-3	-1.88E+0	1.85E+0
PET	MJ	3.62E+0	1.76E-1	3.23E-1	4.12E+0	1.83E-2	1.28E-1	1.05E-3	-2.27E+0	2.00E+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	1.08E-3	1.81E-5	5.97E-4	1.69E-3	1.92E-6	6.50E-5	1.18E-6	-7.48E-4	1.01E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.85E-7	4.08E-7	6.90E-8	1.16E-6	4.34E-8	1.94E-7	1.15E-9	-6.46E-7	7.54E-7
NHWD	kg	5.13E-3	9.75E-3	6.72E-4	1.56E-2	1.05E-3	5.60E-3	4.20E-3	-2.43E-3	2.40E-2
RWD	kg	3.25E-6	1.11E-6	7.36E-8	4.44E-6	1.15E-7	4.56E-7	6.24E-9	-1.42E-6	3.60E-6
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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