

Environmental Profile

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

Ecochain v3.5.64



Product: 3018668 - PE Branch Reduced 45° 40x32
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					Benefits and loads beyond the system boundaries											
A4 Transport gate to site A5 Assembly / Construction installation process					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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.29E-1	1.66E-2	9.76E-3	1.55E-1	1.71E-3	7.58E-2	9.48E-4	-8.30E-2	1.51E-1
GWP-f	kg CO2 eq	1.43E-1	1.65E-2	8.35E-3	1.67E-1	1.71E-3	5.66E-2	9.48E-4	-9.31E-2	1.34E-1
GWP-b	kg CO2 eq	-1.39E-2	9.38E-6	7.05E-4	-1.32E-2	1.04E-6	1.92E-2	7.12E-7	1.02E-2	1.62E-2
GWP-luluc	kg CO2 eq	1.06E-4	6.07E-6	7.05E-4	8.17E-4	6.06E-7	9.92E-6	1.36E-8	-9.95E-5	7.28E-4
ODP	kg CFC11 eq	8.71E-9	3.79E-9	8.38E-10	1.33E-8	3.94E-10	1.41E-9	2.02E-11	-5.09E-9	1.01E-8
AP	mol H+ eq	5.60E-4	1.16E-4	3.37E-5	7.09E-4	9.75E-6	5.82E-5	4.83E-7	-2.99E-4	4.79E-4
EP-fw	kg P eq	2.94E-6	1.33E-7	1.30E-7	3.20E-6	1.41E-8	2.89E-7	6.26E-10	-2.06E-6	1.44E-6
EP-m	kg N eq	1.04E-4	3.87E-5	5.69E-6	1.48E-4	3.49E-6	1.74E-5	3.41E-7	-5.82E-5	1.11E-4
EP-T	mol N eq	1.14E-3	4.27E-4	6.39E-5	1.64E-3	3.84E-5	1.91E-4	1.96E-6	-6.55E-4	1.21E-3
POCP	kg NMVOC eq	4.91E-4	1.20E-4	1.99E-5	6.31E-4	1.10E-5	6.01E-5	7.68E-7	-2.72E-4	4.30E-4
ADP-mm	kg Sb eq	1.94E-6	4.13E-7	2.03E-7	2.55E-6	4.43E-8	2.31E-7	4.84E-10	-6.56E-7	2.17E-6
ADP-f	MJ	4.81E+0	2.52E-1	1.10E-1	5.17E+0	2.63E-2	1.77E-1	1.48E-3	-2.69E+0	2.68E+0
WDP	m3 depriv.	1.04E-1	7.55E-4	3.89E-2	1.43E-1	8.06E-5	3.36E-3	6.76E-6	-6.54E-2	8.15E-2
PM	disease inc.	5.82E-9	1.45E-9	3.37E-10	7.60E-9	1.54E-10	9.49E-10	1.01E-11	-3.12E-9	5.59E-9
IR	kBq U-235 eq	4.58E-3	1.10E-3	1.02E-4	5.78E-3	1.15E-4	5.50E-4	6.88E-6	-2.29E-3	4.16E-3
ETP-fw	CTUe	2.22E+0	2.03E-1	1.73E-1	2.60E+0	2.13E-2	2.09E-1	1.30E-3	-1.22E+0	1.61E+0
HTP-c	CTUh	4.89E-11	7.41E-12	9.24E-12	6.56E-11	7.59E-13	2.41E-11	3.59E-14	-2.91E-11	6.14E-11
HTP-nc	CTUh	1.04E-9	2.39E-10	1.92E-10	1.48E-9	2.54E-11	3.02E-10	8.28E-13	-6.48E-10	1.16E-9
SQP	Pt	1.86E+0	2.08E-1	2.00E-2	2.09E+0	2.25E-2	1.39E-1	3.79E-3	-3.00E+0	-7.44E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.41E-1	3.53E-3	3.80E-1	7.24E-1	3.77E-4	8.55E-3	5.84E-5	-5.33E-1	2.00E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.41E-1	3.53E-3	3.80E-1	7.24E-1	3.77E-4	8.55E-3	5.84E-5	-5.33E-1	2.00E-1
PENRE	MJ	5.16E+0	2.67E-1	1.20E-1	5.54E+0	2.79E-2	1.89E-1	1.57E-3	-2.90E+0	2.86E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.16E+0	2.67E-1	1.20E-1	5.54E+0	2.79E-2	1.89E-1	1.57E-3	-2.90E+0	2.86E+0
PET	MJ	5.50E+0	2.71E-1	5.00E-1	6.27E+0	2.83E-2	1.98E-1	1.63E-3	-3.44E+0	3.06E+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	1.66E-3	2.78E-5	9.23E-4	2.61E-3	2.97E-6	1.01E-4	1.83E-6	-1.17E-3	1.55E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.02E-6	6.27E-7	1.07E-7	1.75E-6	6.72E-8	3.00E-7	1.77E-9	-9.64E-7	1.16E-6
NHWD	kg	7.66E-3	1.50E-2	1.04E-3	2.37E-2	1.63E-3	8.66E-3	6.51E-3	-3.49E-3	3.70E-2
RWD	kg	4.99E-6	1.71E-6	1.14E-7	6.82E-6	1.79E-7	7.05E-7	9.66E-9	-2.16E-6	5.54E-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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