

Environmental Profile

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

Ecochain v3.5.64



Product: 3018663 - PE Bend 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					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	3.20E-2	5.25E-3	3.00E-3	4.03E-2	5.27E-4	3.42E-2	2.92E-4	-2.63E-2	4.89E-2
GWP-f	kg CO2 eq	4.65E-2	5.25E-3	2.57E-3	5.43E-2	5.26E-4	1.75E-2	2.92E-4	-3.05E-2	4.21E-2
GWP-b	kg CO2 eq	-1.45E-2	2.98E-6	2.17E-4	-1.42E-2	3.20E-7	1.66E-2	2.19E-7	4.26E-3	6.62E-3
GWP-luluc	kg CO2 eq	4.44E-5	1.92E-6	2.17E-4	2.63E-4	1.86E-7	3.11E-6	4.18E-9	-4.33E-5	2.23E-4
ODP	kg CFC11 eq	3.00E-9	1.20E-9	2.58E-10	4.46E-9	1.21E-10	4.61E-10	6.22E-12	-1.81E-9	3.24E-9
AP	mol H+ eq	1.88E-4	3.66E-5	1.04E-5	2.35E-4	3.00E-6	1.89E-5	1.48E-7	-1.06E-4	1.51E-4
EP-fw	kg P eq	1.05E-6	4.21E-8	3.99E-8	1.13E-6	4.33E-9	9.11E-8	1.93E-10	-7.96E-7	4.29E-7
EP-m	kg N eq	3.66E-5	1.22E-5	1.75E-6	5.06E-5	1.07E-6	5.72E-6	1.05E-7	-2.16E-5	3.59E-5
EP-T	mol N eq	4.01E-4	1.35E-4	1.97E-5	5.56E-4	1.18E-5	6.29E-5	6.03E-7	-2.44E-4	3.86E-4
POCP	kg NMVOC eq	1.67E-4	3.79E-5	6.11E-6	2.11E-4	3.38E-6	1.96E-5	2.36E-7	-9.75E-5	1.37E-4
ADP-mm	kg Sb eq	6.38E-7	1.31E-7	6.25E-8	8.32E-7	1.36E-8	7.47E-8	1.49E-10	-2.32E-7	6.88E-7
ADP-f	MJ	1.52E+0	7.99E-2	3.38E-2	1.64E+0	8.08E-3	5.64E-2	4.54E-4	-8.62E-1	8.39E-1
WDP	m3 depriv.	3.28E-2	2.40E-4	1.20E-2	4.50E-2	2.48E-5	1.05E-3	2.08E-6	-2.21E-2	2.40E-2
PM	disease inc.	2.09E-9	4.59E-10	1.04E-10	2.65E-9	4.75E-11	3.05E-10	3.12E-12	-1.25E-9	1.76E-9
IR	kBq U-235 eq	1.53E-3	3.49E-4	3.15E-5	1.92E-3	3.53E-5	1.78E-4	2.12E-6	-8.39E-4	1.29E-3
ETP-fw	CTUe	8.63E-1	6.43E-2	5.33E-2	9.80E-1	6.56E-3	6.70E-2	4.01E-4	-5.01E-1	5.53E-1
HTP-c	CTUh	2.00E-11	2.35E-12	2.84E-12	2.52E-11	2.34E-13	7.73E-12	1.10E-14	-1.33E-11	2.00E-11
HTP-nc	CTUh	3.71E-10	7.58E-11	5.90E-11	5.06E-10	7.82E-12	9.58E-11	2.55E-13	-2.52E-10	3.58E-10
SQP	Pt	1.47E+0	6.61E-2	6.16E-3	1.54E+0	6.91E-3	4.41E-2	1.17E-3	-1.84E+0	-2.46E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.38E-1	1.12E-3	1.17E-1	3.56E-1	1.16E-4	2.69E-3	1.80E-5	-3.08E-1	5.07E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.38E-1	1.12E-3	1.17E-1	3.56E-1	1.16E-4	2.69E-3	1.80E-5	-3.08E-1	5.07E-2
PENRE	MJ	1.63E+0	8.48E-2	3.69E-2	1.75E+0	8.58E-3	6.01E-2	4.82E-4	-9.28E-1	8.95E-1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.63E+0	8.48E-2	3.69E-2	1.75E+0	8.58E-3	6.01E-2	4.82E-4	-9.28E-1	8.95E-1
PET	MJ	1.87E+0	8.59E-2	1.54E-1	2.11E+0	8.70E-3	6.28E-2	5.00E-4	-1.24E+0	9.45E-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	5.39E-4	8.83E-6	2.84E-4	8.32E-4	9.14E-7	3.17E-5	5.62E-7	-4.14E-4	4.52E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.01E-7	1.99E-7	3.28E-8	6.33E-7	2.07E-8	9.70E-8	5.45E-10	-3.66E-7	3.86E-7
NHWD	kg	3.03E-3	4.76E-3	3.20E-4	8.11E-3	5.01E-4	2.75E-3	2.00E-3	-1.56E-3	1.18E-2
RWD	kg	1.68E-6	5.44E-7	3.51E-8	2.26E-6	5.50E-8	2.29E-7	2.97E-9	-8.09E-7	1.73E-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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