

Environmental Profile

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

Ecochain v3.5.64



Product: 3003625 - PE Bend 90° BK 110 S12,5 Shorten
 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

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 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 non-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	9.46E-1	1.23E-1	7.28E-2	1.14E+0	1.28E-2	5.48E-1	7.07E-3	-6.28E-1	1.08E+0
GWP-f	kg CO2 eq	1.04E+0	1.23E-1	6.23E-2	1.23E+0	1.28E-2	4.20E-1	7.08E-3	-6.82E-1	9.87E-1
GWP-b	kg CO2 eq	-9.73E-2	6.99E-5	5.26E-3	-9.20E-2	7.75E-6	1.27E-1	5.31E-6	5.40E-2	8.91E-2
GWP-luluc	kg CO2 eq	6.66E-4	4.53E-5	5.26E-3	5.97E-3	4.52E-6	7.35E-5	1.01E-7	-5.87E-4	5.46E-3
ODP	kg CFC11 eq	6.23E-8	2.82E-8	6.25E-9	9.68E-8	2.94E-9	1.02E-8	1.51E-10	-3.63E-8	7.38E-8
AP	mol H+ eq	4.06E-3	8.66E-4	2.51E-4	5.18E-3	7.27E-5	4.24E-4	3.60E-6	-2.12E-3	3.56E-3
EP-fw	kg P eq	2.05E-5	9.88E-7	9.68E-7	2.25E-5	1.05E-7	2.14E-6	4.67E-9	-1.35E-5	1.13E-5
EP-m	kg N eq	7.37E-4	2.88E-4	4.24E-5	1.07E-3	2.60E-5	1.26E-4	2.55E-6	-4.09E-4	8.14E-4
EP-T	mol N eq	8.17E-3	3.18E-3	4.77E-4	1.18E-2	2.87E-4	1.38E-3	1.46E-5	-4.59E-3	8.92E-3
POCP	kg NMVOC eq	3.58E-3	8.94E-4	1.48E-4	4.62E-3	8.20E-5	4.35E-4	5.73E-6	-1.95E-3	3.19E-3
ADP-mm	kg Sb eq	1.42E-5	3.07E-6	1.52E-6	1.88E-5	3.30E-7	1.68E-6	3.61E-9	-4.73E-6	1.61E-5
ADP-f	MJ	3.56E+1	1.88E+0	8.20E-1	3.83E+1	1.96E-1	1.30E+0	1.10E-2	-1.99E+1	1.99E+1
WDP	m3 depriv.	7.68E-1	5.63E-3	2.90E-1	1.06E+0	6.01E-4	2.49E-2	5.05E-5	-4.56E-1	6.32E-1
PM	disease inc.	4.16E-8	1.08E-8	2.52E-9	5.49E-8	1.15E-9	6.92E-9	7.57E-11	-2.11E-8	4.20E-8
IR	kBq U-235 eq	3.32E-2	8.20E-3	7.65E-4	4.21E-2	8.57E-4	4.01E-3	5.14E-5	-1.57E-2	3.14E-2
ETP-fw	CTUe	1.38E+1	1.51E+0	1.29E+0	1.66E+1	1.59E-1	1.52E+0	9.71E-3	-7.44E+0	1.09E+1
HTP-c	CTUh	3.51E-10	5.52E-11	6.89E-11	4.75E-10	5.66E-12	1.77E-10	2.68E-13	-2.02E-10	4.56E-10
HTP-nc	CTUh	7.47E-9	1.78E-9	1.43E-9	1.07E-8	1.90E-10	2.22E-9	6.18E-12	-4.38E-9	8.72E-9
SQP	Pt	1.24E+1	1.55E+0	1.49E-1	1.41E+1	1.68E-1	1.03E+0	2.83E-2	-1.79E+1	-2.60E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.28E+0	2.63E-2	2.84E+0	5.14E+0	2.81E-3	6.32E-2	4.36E-4	-3.19E+0	2.01E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.28E+0	2.63E-2	2.84E+0	5.14E+0	2.81E-3	6.32E-2	4.36E-4	-3.19E+0	2.01E+0
PENRE	MJ	3.81E+1	1.99E+0	8.94E-1	4.10E+1	2.08E-1	1.39E+0	1.17E-2	-2.14E+1	2.12E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.81E+1	1.99E+0	8.94E-1	4.10E+1	2.08E-1	1.39E+0	1.17E-2	-2.14E+1	2.12E+1
PET	MJ	4.04E+1	2.02E+0	3.73E+0	4.62E+1	2.11E-1	1.45E+0	1.21E-2	-2.46E+1	2.32E+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	1.21E-2	2.07E-4	6.89E-3	1.92E-2	2.22E-5	7.43E-4	1.36E-5	-7.91E-3	1.21E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.14E-6	4.67E-6	7.96E-7	1.26E-5	5.01E-7	2.18E-6	1.32E-8	-6.88E-6	8.43E-6
NHWD	kg	5.31E-2	1.12E-1	7.76E-3	1.73E-1	1.21E-2	6.37E-2	4.86E-2	-2.40E-2	2.73E-1
RWD	kg	3.62E-5	1.28E-5	8.50E-7	4.98E-5	1.33E-6	5.13E-6	7.21E-8	-1.48E-5	4.15E-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	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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