

Environmental Profile

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

Ecochain v3.5.64



Product: 3018709 - End Cap Protection BL 110
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]

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	6.98E-2	1.07E-3	5.25E-3	7.61E-2	9.48E-4	4.58E-2	4.30E-4	-3.47E-2	8.86E-2
GWP-f	kg CO2 eq	8.40E-2	1.07E-3	4.49E-3	8.96E-2	9.48E-4	2.73E-2	4.30E-4	-4.34E-2	7.48E-2
GWP-b	kg CO2 eq	-1.44E-2	6.51E-7	3.80E-4	-1.40E-2	5.75E-7	1.86E-2	3.13E-7	8.75E-3	1.33E-2
GWP-luluc	kg CO2 eq	1.26E-4	3.79E-7	3.79E-4	5.06E-4	3.35E-7	5.59E-6	1.74E-8	-7.72E-5	4.35E-4
ODP	kg CFC11 eq	1.00E-8	2.47E-10	4.51E-10	1.07E-8	2.18E-10	8.31E-10	1.18E-11	-1.75E-9	1.00E-8
AP	mol H+ eq	6.48E-4	6.10E-6	1.81E-5	6.72E-4	5.40E-6	3.31E-5	3.25E-7	-1.73E-4	5.38E-4
EP-fw	kg P eq	3.26E-6	8.82E-9	6.98E-8	3.34E-6	7.80E-9	1.64E-7	6.58E-10	-1.34E-6	2.17E-6
EP-m	kg N eq	9.17E-5	2.18E-6	3.06E-6	9.69E-5	1.93E-6	9.87E-6	1.10E-7	-3.33E-5	7.56E-5
EP-T	mol N eq	1.22E-3	2.41E-5	3.44E-5	1.28E-3	2.13E-5	1.08E-4	1.21E-6	-3.76E-4	1.04E-3
POCP	kg NMVOC eq	2.78E-4	6.88E-6	1.07E-5	2.96E-4	6.08E-6	3.39E-5	4.41E-7	-1.48E-4	1.88E-4
ADP-mm	kg Sb eq	1.02E-5	2.77E-8	1.09E-7	1.04E-5	2.45E-8	1.36E-7	4.07E-10	-3.82E-7	1.01E-5
ADP-f	MJ	9.25E-1	1.65E-2	5.92E-2	1.00E+0	1.45E-2	1.02E-1	8.96E-4	-1.38E+0	-2.62E-1
WDP	m3 depriv.	6.48E-2	5.05E-5	2.09E-2	8.58E-2	4.46E-5	1.78E-3	3.86E-5	-3.70E-2	5.06E-2
PM	disease inc.	5.64E-9	9.67E-11	1.82E-10	5.92E-9	8.55E-11	5.44E-10	6.20E-12	-2.12E-9	4.44E-9
IR	kBq U-235 eq	2.80E-3	7.19E-5	5.52E-5	2.93E-3	6.36E-5	3.20E-4	3.53E-6	-1.25E-3	2.06E-3
ETP-fw	CTUe	3.37E+0	1.34E-2	9.33E-2	3.48E+0	1.18E-2	1.21E-1	7.43E-4	-8.92E-1	2.72E+0
HTP-c	CTUh	8.00E-11	4.75E-13	4.98E-12	8.55E-11	4.20E-13	3.34E-11	4.72E-14	-1.73E-11	1.02E-10
HTP-nc	CTUh	1.89E-9	1.59E-11	1.03E-10	2.01E-9	1.41E-11	2.20E-10	6.35E-13	-4.21E-10	1.82E-9
SQP	Pt	1.95E+0	1.41E-2	1.08E-2	1.98E+0	1.24E-2	7.94E-2	2.14E-3	-2.66E+0	-5.91E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.11E-1	2.36E-4	2.05E-1	5.16E-1	2.09E-4	4.82E-3	1.56E-5	-4.61E-1	6.04E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.11E-1	2.36E-4	2.05E-1	5.16E-1	2.09E-4	4.82E-3	1.56E-5	-4.61E-1	6.04E-2
PENRE	MJ	9.93E-1	1.75E-2	6.45E-2	1.07E+0	1.54E-2	1.09E-1	9.52E-4	-1.48E+0	-2.82E-1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.93E-1	1.75E-2	6.45E-2	1.07E+0	1.54E-2	1.09E-1	9.52E-4	-1.48E+0	-2.82E-1
PET	MJ	1.30E+0	1.77E-2	2.69E-1	1.59E+0	1.57E-2	1.14E-1	9.68E-4	-1.94E+0	-2.22E-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	1.66E-3	1.86E-6	4.97E-4	2.16E-3	1.65E-6	5.45E-5	9.41E-7	-7.02E-4	1.52E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.02E-6	4.21E-8	5.75E-8	2.12E-6	3.72E-8	1.93E-7	1.38E-9	-3.65E-7	1.99E-6
NHWD	kg	1.61E-2	1.02E-3	5.60E-4	1.77E-2	9.02E-4	5.12E-3	3.61E-3	-2.29E-3	2.50E-2
RWD	kg	2.78E-6	1.12E-7	6.14E-8	2.95E-6	9.89E-8	4.13E-7	5.37E-9	-1.17E-6	2.30E-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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