

# Environmental Profile

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

Ecochain v3.5.64



Product: 3070630 - PE Branch S12,5 45° 200x200  
 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]

## 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	6.69E+0	8.64E-1	5.10E-1	8.07E+0	8.96E-2	3.89E+0	4.96E-2	-4.37E+0	7.73E+0
GWP-f	kg CO2 eq	7.38E+0	8.64E-1	4.37E-1	8.68E+0	8.95E-2	2.95E+0	4.96E-2	-4.82E+0	6.95E+0
GWP-b	kg CO2 eq	-6.95E-1	4.89E-4	3.69E-2	-6.58E-1	5.43E-5	9.40E-1	3.72E-5	4.58E-1	7.40E-1
GWP-luluc	kg CO2 eq	5.12E-3	3.17E-4	3.69E-2	4.23E-2	3.17E-5	5.17E-4	7.11E-7	-4.67E-3	3.82E-2
ODP	kg CFC11 eq	4.46E-7	1.98E-7	4.38E-8	6.88E-7	2.06E-8	7.28E-8	1.06E-9	-2.60E-7	5.22E-7
AP	mol H+ eq	2.89E-2	6.06E-3	1.76E-3	3.67E-2	5.10E-4	3.01E-3	2.52E-5	-1.53E-2	2.50E-2
EP-fw	kg P eq	1.49E-4	6.92E-6	6.78E-6	1.63E-4	7.36E-7	1.51E-5	3.28E-8	-1.01E-4	7.70E-5
EP-m	kg N eq	5.31E-3	2.02E-3	2.97E-4	7.62E-3	1.82E-4	8.97E-4	1.79E-5	-2.95E-3	5.77E-3
EP-T	mol N eq	5.86E-2	2.23E-2	3.34E-3	8.42E-2	2.01E-3	9.86E-3	1.02E-4	-3.32E-2	6.29E-2
POCP	kg NMVOC eq	2.54E-2	6.26E-3	1.04E-3	3.27E-2	5.75E-4	3.10E-3	4.02E-5	-1.40E-2	2.24E-2
ADP-mm	kg Sb eq	1.00E-4	2.15E-5	1.06E-5	1.33E-4	2.32E-6	1.19E-5	2.53E-8	-3.37E-5	1.13E-4
ADP-f	MJ	2.50E+2	1.31E+1	5.75E+0	2.69E+2	1.37E+0	9.21E+0	7.72E-2	-1.40E+2	1.40E+2
WDP	m3 depriv.	5.41E+0	3.94E-2	2.03E+0	7.48E+0	4.22E-3	1.75E-1	3.54E-4	-3.31E+0	4.35E+0
PM	disease inc.	2.98E-7	7.54E-8	1.76E-8	3.91E-7	8.08E-9	4.91E-8	5.31E-10	-1.56E-7	2.93E-7
IR	kBq U-235 eq	2.36E-1	5.74E-2	5.36E-3	2.99E-1	6.00E-3	2.84E-2	3.60E-4	-1.15E-1	2.19E-1
ETP-fw	CTUe	1.07E+2	1.06E+1	9.07E+0	1.27E+2	1.12E+0	1.08E+1	6.81E-2	-5.82E+1	8.03E+1
HTP-c	CTUh	2.51E-9	3.87E-10	4.83E-10	3.38E-9	3.97E-11	1.25E-9	1.88E-12	-1.47E-9	3.20E-9
HTP-nc	CTUh	5.35E-8	1.25E-8	1.00E-8	7.60E-8	1.33E-9	1.57E-8	4.33E-11	-3.23E-8	6.07E-8
SQP	Pt	9.14E+1	1.09E+1	1.05E+0	1.03E+2	1.18E+0	7.25E+0	1.98E-1	-1.41E+2	-2.90E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.68E+1	1.84E-1	1.99E+1	3.69E+1	1.97E-2	4.45E-1	3.06E-3	-2.51E+1	1.22E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.68E+1	1.84E-1	1.99E+1	3.69E+1	1.97E-2	4.45E-1	3.06E-3	-2.51E+1	1.22E+1
PENRE	MJ	2.69E+2	1.40E+1	6.27E+0	2.89E+2	1.46E+0	9.81E+0	8.19E-2	-1.51E+2	1.49E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.69E+2	1.40E+1	6.27E+0	2.89E+2	1.46E+0	9.81E+0	8.19E-2	-1.51E+2	1.49E+2
PET	MJ	2.85E+2	1.41E+1	2.61E+1	3.26E+2	1.48E+0	1.03E+1	8.50E-2	-1.76E+2	1.61E+2
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	8.60E-2	1.45E-3	4.83E-2	1.36E-1	1.55E-4	5.23E-3	9.55E-5	-5.84E-2	8.28E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.16E-5	3.27E-5	5.58E-6	8.99E-5	3.51E-6	1.55E-5	9.27E-8	-4.93E-5	5.97E-5
NHWD	kg	3.86E-1	7.83E-1	5.44E-2	1.22E+0	8.51E-2	4.50E-1	3.40E-1	-1.75E-1	1.92E+0
RWD	kg	2.57E-4	8.95E-5	5.96E-6	3.53E-4	9.34E-6	3.64E-5	5.05E-7	-1.09E-4	2.90E-4
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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