Environmental Profile

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

Ecochain v3.5.80

Product:	3025434 - Gutter Support Bracket Sand 16
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	08-06-2023
End of validity:	08-06-2028
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 - PL -Buk - Extra products (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 EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	4.50E-2	1.24E-3	1.45E-4	4.64E-2	6.85E-4	6.30E-2	2.20E-4	-3.49E-2	7.53E-2
GWP-f	kg CO2 eq	7.76E-2	1.24E-3	1.46E-4	7.90E-2	6.84E-4	2.74E-2	2.20E-4	-3.99E-2	6.74E-2
GWP-b	kg CO2 eq	-3.27E-2	7.52E-7	-1.54E-6	-3.27E-2	4.16E-7	3.56E-2	2.60E-7	5.05E-3	7.94E-3
GWP-luluc	kg CO2 eq	1.08E-4	4.38E-7	1.49E-7	1.09E-4	2.42E-7	8.14E-6	6.36E-9	-7.08E-5	4.64E-5
ODP	kg CFC11 eq	2.77E-8	2.85E-10	8.26E-12	2.80E-8	1.58E-10	2.21E-9	8.05E-12	-1.55E-8	1.48E-8
AP	mol H+ eq	4.76E-4	7.05E-6	1.47E-6	4.85E-4	3.90E-6	4.17E-5	1.98E-7	-1.64E-4	3.66E-4
EP-fw	kg P eq	3.65E-6	1.02E-8	8.24E-9	3.66E-6	5.63E-9	2.70E-7	2.76E-10	-1.71E-6	2.23E-6
EP-m	kg N eq	7.71E-5	2.52E-6	1.55E-7	7.97E-5	1.39E-6	1.09E-5	1.14E-7	-3.33E-5	5.89E-5
EP-T	mol N eq	8.40E-4	2.78E-5	1.85E-6	8.70E-4	1.54E-5	1.20E-4	7.84E-7	-3.69E-4	6.37E-4
POCP	kg NMVOC eq	2.78E-4	7.95E-6	6.28E-7	2.86E-4	4.39E-6	3.59E-5	2.71E-7	-1.23E-4	2.04E-4
ADP-mm	kg Sb eq	9.81E-5	3.20E-8	1.97E-8	9.81E-5	1.77E-8	1.61E-7	2.05E-10	-6.89E-7	9.76E-5
ADP-f	MJ	1.71E+0	1.90E-2	1.36E-3	1.73E+0	1.05E-2	1.10E-1	5.89E-4	-8.88E-1	9.66E-1
WDP	m3 depriv.	9.68E-2	5.83E-5	5.22E-5	9.69E-2	3.22E-5	3.94E-3	6.51E-6	-4.97E-2	5.11E-2
PM	disease inc.	3.54E-9	1.12E-10	9.08E-12	3.66E-9	6.18E-11	5.31E-10	4.05E-12	-1.78E-9	2.47E-9
IR	kBq U-235 eq	3.89E-3	8.30E-5	1.02E-6	3.98E-3	4.59E-5	3.91E-4	2.66E-6	-1.87E-3	2.54E-3
ETP-fw	CTUe	2.85E+0	1.54E-2	1.21E-2	2.87E+0	8.53E-3	7.47E-1	8.07E-3	-9.24E-1	2.71E+0
HTP-c	CTUh	9.25E-11	5.49E-13	6.17E-13	9.37E-11	3.04E-13	1.53E-11	1.79E-14	-3.02E-11	7.91E-11
HTP-nc	CTUh	2.17E-9	1.84E-11	1.57E-11	2.21E-9	1.02E-11	2.89E-10	1.59E-12	-7.25E-10	1.78E-9
SQP	Pt	3.28E+0	1.63E-2	2.24E-3	3.29E+0	8.99E-3	6.98E-2	1.49E-3	-3.35E+0	2.15E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.88E-1	2.73E-4	2.40E-2	7.12E-1	1.51E-4	7.45E-3	2.02E-5	-5.51E-1	1.69E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.88E-1	2.73E-4	2.40E-2	7.12E-1	1.51E-4	7.45E-3	2.02E-5	-5.51E-1	1.69E-1
PENRE	MJ	1.84E+0	2.02E-2	1.44E-3	1.86E+0	1.12E-2	1.17E-1	6.26E-4	-9.57E-1	1.03E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.84E+0	2.02E-2	1.44E-3	1.86E+0	1.12E-2	1.17E-1	6.26E-4	-9.57E-1	1.03E+0
PET	MJ	2.52E+0	2.04E-2	2.55E-2	2.57E+0	1.13E-2	1.25E-1	6.46E-4	-1.51E+0	1.20E+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	1.40E-3	2.15E-6	1.46E-6	1.40E-3	1.19E-6	1.11E-4	7.09E-7	-6.65E-4	8.51E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.37E-5	4.86E-8	2.73E-13	1.37E-5	2.69E-8	1.88E-7	7.40E-10	-9.05E-7	1.30E-5
NHWD	kg	1.29E-2	1.18E-3	1.05E-6	1.41E-2	6.51E-4	4.57E-3	2.60E-3	-3.91E-3	1.80E-2
RWD	kg	3.53E-6	1.29E-7	1.10E-13	3.66E-6	7.14E-8	4.35E-7	3.80E-9	-1.75E-6	2.42E-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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