Environmental Profile

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

Ecochain v3.5.80

Product:	3025690 - Gutter Bend 67°3 Sand 50 S/S
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	1.56E-1	2.91E-3	1.45E-4	1.59E-1	1.90E-3	1.02E-1	6.00E-4	-8.56E-2	1.78E-1
GWP-f	kg CO2 eq	1.87E-1	2.91E-3	1.46E-4	1.90E-1	1.90E-3	6.51E-2	6.00E-4	-9.34E-2	1.65E-1
GWP-b	kg CO2 eq	-3.16E-2	1.76E-6	-1.54E-6	-3.16E-2	1.15E-6	3.69E-2	7.21E-7	7.85E-3	1.32E-2
GWP-luluc	kg CO2 eq	2.21E-4	1.03E-6	1.49E-7	2.23E-4	6.71E-7	2.25E-5	1.70E-8	-1.25E-4	1.21E-4
ODP	kg CFC11 eq	7.60E-8	6.70E-10	8.26E-12	7.67E-8	4.37E-10	6.08E-9	2.22E-11	-4.09E-8	4.23E-8
AP	mol H+ eq	1.18E-3	1.66E-5	1.47E-6	1.20E-3	1.08E-5	1.10E-4	5.45E-7	-3.69E-4	9.48E-4
EP-fw	kg P eq	8.88E-6	2.39E-8	8.24E-9	8.91E-6	1.56E-8	7.48E-7	7.46E-10	-3.82E-6	5.86E-6
EP-m	kg N eq	1.75E-4	5.92E-6	1.55E-7	1.81E-4	3.86E-6	2.78E-5	3.19E-7	-6.97E-5	1.44E-4
EP-T	mol N eq	1.90E-3	6.53E-5	1.85E-6	1.97E-3	4.26E-5	3.06E-4	2.16E-6	-7.60E-4	1.56E-3
POCP	kg NMVOC eq	6.27E-4	1.87E-5	6.28E-7	6.47E-4	1.22E-5	9.17E-5	7.44E-7	-2.55E-4	4.97E-4
ADP-mm	kg Sb eq	2.45E-4	7.52E-8	1.97E-8	2.45E-4	4.90E-8	4.30E-7	5.59E-10	-1.73E-6	2.44E-4
ADP-f	MJ	4.22E+0	4.46E-2	1.36E-3	4.27E+0	2.91E-2	2.96E-1	1.63E-3	-2.16E+0	2.43E+0
WDP	m3 depriv.	2.58E-1	1.37E-4	5.22E-5	2.58E-1	8.93E-5	1.10E-2	1.60E-5	-1.26E-1	1.44E-1
PM	disease inc.	7.57E-9	2.62E-10	9.08E-12	7.84E-9	1.71E-10	1.39E-9	1.12E-11	-3.27E-9	6.14E-9
IR	kBq U-235 eq	9.75E-3	1.95E-4	1.02E-6	9.94E-3	1.27E-4	1.04E-3	7.36E-6	-4.39E-3	6.73E-3
ETP-fw	CTUe	6.48E+0	3.62E-2	1.21E-2	6.53E+0	2.36E-2	2.11E+0	2.30E-2	-1.85E+0	6.83E+0
HTP-c	CTUh	2.21E-10	1.29E-12	6.17E-13	2.23E-10	8.41E-13	3.83E-11	4.81E-14	-5.84E-11	2.04E-10
HTP-nc	CTUh	5.51E-9	4.32E-11	1.57E-11	5.57E-9	2.82E-11	7.83E-10	4.50E-12	-1.70E-9	4.69E-9
SQP	Pt	3.85E+0	3.82E-2	2.24E-3	3.89E+0	2.49E-2	1.86E-1	4.12E-3	-4.05E+0	5.56E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.14E+0	6.40E-4	2.40E-2	1.17E+0	4.17E-4	2.06E-2	5.67E-5	-7.05E-1	4.83E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.14E+0	6.40E-4	2.40E-2	1.17E+0	4.17E-4	2.06E-2	5.67E-5	-7.05E-1	4.83E-1
PENRE	MJ	4.53E+0	4.74E-2	1.44E-3	4.57E+0	3.09E-2	3.15E-1	1.73E-3	-2.33E+0	2.60E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.53E+0	4.74E-2	1.44E-3	4.57E+0	3.09E-2	3.15E-1	1.73E-3	-2.33E+0	2.60E+0
PET	MJ	5.67E+0	4.80E-2	2.55E-2	5.74E+0	3.13E-2	3.36E-1	1.78E-3	-3.03E+0	3.08E+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	3.51E-3	5.05E-6	1.46E-6	3.52E-3	3.29E-6	3.06E-4	1.96E-6	-1.53E-3	2.30E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.39E-5	1.14E-7	2.73E-13	3.41E-5	7.44E-8	4.94E-7	2.02E-9	-1.99E-6	3.26E-5
NHWD	kg	3.14E-2	2.76E-3	1.05E-6	3.42E-2	1.80E-3	1.17E-2	7.21E-3	-7.98E-3	4.69E-2
RWD	kg	8.71E-6	3.03E-7	1.10E-13	9.01E-6	1.98E-7	1.14E-6	1.05E-8	-3.98E-6	6.37E-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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