Environmental Profile

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

Ecochain v3.5.80

Product:	3026178 - PP Bracket GY 32
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	2.85E-2	6.06E-4	1.45E-4	2.93E-2	2.63E-4	5.09E-2	1.23E-4	-2.55E-2	5.51E-2
GWP-f	kg CO2 eq	6.16E-2	6.06E-4	1.46E-4	6.24E-2	2.63E-4	1.72E-2	1.23E-4	-2.65E-2	5.34E-2
GWP-b	kg CO2 eq	-3.32E-2	3.68E-7	-1.54E-6	-3.32E-2	1.60E-7	3.38E-2	1.04E-7	1.04E-3	1.65E-3
GWP-luluc	kg CO2 eq	5.79E-5	2.14E-7	1.49E-7	5.82E-5	9.32E-8	1.82E-6	2.63E-9	-2.38E-5	3.64E-5
ODP	kg CFC11 eq	3.53E-9	1.40E-10	8.26E-12	3.68E-9	6.07E-11	3.11E-10	3.14E-12	-2.76E-9	1.29E-9
AP	mol H+ eq	3.14E-4	3.45E-6	1.47E-6	3.19E-4	1.50E-6	1.33E-5	7.73E-8	-9.05E-5	2.43E-4
EP-fw	kg P eq	2.01E-6	4.99E-9	8.24E-9	2.02E-6	2.17E-9	5.66E-8	1.13E-10	-6.45E-7	1.43E-6
EP-m	kg N eq	5.62E-5	1.23E-6	1.55E-7	5.76E-5	5.37E-7	4.19E-6	4.49E-8	-1.98E-5	4.26E-5
EP-T	mol N eq	6.43E-4	1.36E-5	1.85E-6	6.59E-4	5.91E-6	4.65E-5	3.08E-7	-2.26E-4	4.86E-4
POCP	kg NMVOC eq	2.33E-4	3.89E-6	6.28E-7	2.38E-4	1.69E-6	1.39E-5	1.15E-7	-9.60E-5	1.58E-4
ADP-mm	kg Sb eq	1.64E-6	1.57E-8	1.97E-8	1.68E-6	6.81E-9	4.93E-8	8.21E-11	-2.00E-7	1.53E-6
ADP-f	MJ	1.31E+0	9.30E-3	1.36E-3	1.32E+0	4.04E-3	3.45E-2	2.31E-4	-5.74E-1	7.88E-1
WDP	m3 depriv.	2.88E-2	2.85E-5	5.22E-5	2.88E-2	1.24E-5	5.70E-4	2.98E-6	-1.25E-2	1.69E-2
PM	disease inc.	3.66E-9	5.47E-11	9.08E-12	3.73E-9	2.38E-11	2.00E-10	1.59E-12	-1.23E-9	2.72E-9
IR	kBq U-235 eq	1.97E-3	4.07E-5	1.02E-6	2.01E-3	1.77E-5	1.16E-4	1.04E-6	-4.90E-4	1.66E-3
ETP-fw	CTUe	1.32E+0	7.55E-3	1.21E-2	1.34E+0	3.28E-3	4.41E-2	1.93E-4	-4.21E-1	9.62E-1
HTP-c	CTUh	3.32E-10	2.69E-13	6.17E-13	3.33E-10	1.17E-13	6.55E-12	7.00E-15	-1.63E-11	3.23E-10
HTP-nc	CTUh	1.33E-9	9.00E-12	1.57E-11	1.35E-9	3.91E-12	6.99E-11	1.33E-13	5.69E-10	1.99E-9
SQP	Pt	3.03E+0	7.96E-3	2.24E-3	3.04E+0	3.46E-3	2.90E-2	5.85E-4	-2.55E+0	5.22E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.95E-1	1.33E-4	2.40E-2	5.20E-1	5.80E-5	1.68E-3	7.94E-6	-3.90E-1	1.31E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.95E-1	1.33E-4	2.40E-2	5.20E-1	5.80E-5	1.68E-3	7.94E-6	-3.90E-1	1.31E-1
PENRE	MJ	1.41E+0	9.87E-3	1.44E-3	1.42E+0	4.29E-3	3.67E-2	2.46E-4	-6.19E-1	8.39E-1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.41E+0	9.87E-3	1.44E-3	1.42E+0	4.29E-3	3.67E-2	2.46E-4	-6.19E-1	8.39E-1
PET	MJ	1.90E+0	1.00E-2	2.55E-2	1.94E+0	4.35E-3	3.84E-2	2.53E-4	-1.01E+0	9.70E-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	6.49E-4	1.05E-6	1.46E-6	6.51E-4	4.57E-7	1.93E-5	2.77E-7	-2.14E-4	4.57E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.98E-7	2.38E-8	2.73E-13	1.02E-6	1.03E-8	6.60E-8	2.94E-10	-9.04E-7	1.94E-7
NHWD	kg	2.59E-2	5.76E-4	1.05E-6	2.65E-2	2.50E-4	2.14E-3	1.00E-3	-2.23E-3	2.76E-2
RWD	kg	1.89E-6	6.33E-8	1.10E-13	1.95E-6	2.75E-8	1.53E-7	1.49E-9	-5.53E-7	1.58E-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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