

# Environmental Profile

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

Ecochain v3.5.80



Product: 3026176 - PP Bracket GY 50  
 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

This document and supporting material contain confidential and proprietary business information of Wavin - PL -Buk - Extra products. These materials may be printed or (photo) copied or otherwise used only with the written consent of Wavin - PL -Buk - Extra products.

# Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.36E-2	6.66E-4	1.45E-4	3.44E-2	3.16E-4	5.30E-2	1.48E-4	-2.75E-2	6.04E-2
GWP-f	kg CO2 eq	6.67E-2	6.65E-4	1.46E-4	6.75E-2	3.16E-4	1.88E-2	1.48E-4	-2.95E-2	5.72E-2
GWP-b	kg CO2 eq	-3.31E-2	4.04E-7	-1.54E-6	-3.31E-2	1.92E-7	3.42E-2	1.26E-7	2.08E-3	3.19E-3
GWP-luluc	kg CO2 eq	6.47E-5	2.35E-7	1.49E-7	6.51E-5	1.12E-7	2.14E-6	3.05E-9	-3.15E-5	3.58E-5
ODP	kg CFC11 eq	3.74E-9	1.53E-10	8.26E-12	3.90E-9	7.28E-11	3.64E-10	3.77E-12	-2.93E-9	1.41E-9
AP	mol H+ eq	3.33E-4	3.79E-6	1.47E-6	3.38E-4	1.80E-6	1.54E-5	9.21E-8	-1.02E-4	2.53E-4
EP-fw	kg P eq	2.13E-6	5.47E-9	8.24E-9	2.14E-6	2.60E-9	6.63E-8	1.32E-10	-7.63E-7	1.45E-6
EP-m	kg N eq	6.03E-5	1.36E-6	1.55E-7	6.18E-5	6.44E-7	4.85E-6	5.46E-8	-2.21E-5	4.52E-5
EP-T	mol N eq	6.86E-4	1.49E-5	1.85E-6	7.02E-4	7.09E-6	5.37E-5	3.68E-7	-2.53E-4	5.11E-4
POCP	kg NMVOC eq	2.49E-4	4.27E-6	6.28E-7	2.54E-4	2.03E-6	1.62E-5	1.38E-7	-1.05E-4	1.67E-4
ADP-mm	kg Sb eq	1.67E-6	1.72E-8	1.97E-8	1.71E-6	8.17E-9	5.79E-8	9.70E-11	-2.23E-7	1.55E-6
ADP-f	MJ	1.47E+0	1.02E-2	1.36E-3	1.48E+0	4.85E-3	4.06E-2	2.77E-4	-6.60E-1	8.69E-1
WDP	m3 depriv.	3.19E-2	3.13E-5	5.22E-5	3.20E-2	1.49E-5	6.78E-4	3.18E-6	-1.54E-2	1.73E-2
PM	disease inc.	3.86E-9	6.00E-11	9.08E-12	3.93E-9	2.85E-11	2.34E-10	1.90E-12	-1.39E-9	2.81E-9
IR	kBq U-235 eq	2.09E-3	4.46E-5	1.02E-6	2.14E-3	2.12E-5	1.36E-4	1.25E-6	-5.91E-4	1.70E-3
ETP-fw	CTUe	1.46E+0	8.29E-3	1.21E-2	1.49E+0	3.94E-3	5.18E-2	2.31E-4	-5.10E-1	1.03E+0
HTP-c	CTUh	3.33E-10	2.95E-13	6.17E-13	3.34E-10	1.40E-13	7.38E-12	8.09E-15	-1.73E-11	3.24E-10
HTP-nc	CTUh	1.36E-9	9.88E-12	1.57E-11	1.39E-9	4.69E-12	8.01E-11	1.57E-13	5.37E-10	2.01E-9
SQP	Pt	3.07E+0	8.74E-3	2.24E-3	3.08E+0	4.15E-3	3.36E-2	7.02E-4	-2.74E+0	3.83E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.06E-1	1.46E-4	2.40E-2	5.30E-1	6.96E-5	1.97E-3	9.71E-6	-4.25E-1	1.07E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.06E-1	1.46E-4	2.40E-2	5.30E-1	6.96E-5	1.97E-3	9.71E-6	-4.25E-1	1.07E-1
PENRE	MJ	1.58E+0	1.08E-2	1.44E-3	1.59E+0	5.15E-3	4.32E-2	2.94E-4	-7.12E-1	9.25E-1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.58E+0	1.08E-2	1.44E-3	1.59E+0	5.15E-3	4.32E-2	2.94E-4	-7.12E-1	9.25E-1
PET	MJ	2.08E+0	1.10E-2	2.55E-2	2.12E+0	5.22E-3	4.52E-2	3.03E-4	-1.14E+0	1.03E+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	7.03E-4	1.16E-6	1.46E-6	7.06E-4	5.49E-7	2.26E-5	3.33E-7	-2.73E-4	4.56E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.03E-6	2.61E-8	2.73E-13	1.06E-6	1.24E-8	7.69E-8	3.49E-10	-9.35E-7	2.11E-7
NHWD	kg	2.62E-2	6.33E-4	1.05E-6	2.68E-2	3.01E-4	2.43E-3	1.20E-3	-2.37E-3	2.84E-2
RWD	kg	2.00E-6	6.94E-8	1.10E-13	2.07E-6	3.30E-8	1.78E-7	1.78E-9	-6.46E-7	1.64E-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



Ecochain Technologies BV  
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands  
<https://www.ecochain.com>  
+31 20 3035 777