

Environmental Profile

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

Ecochain v3.5.64



Product: 3080007 - AS+ Branch DN 90x90 88.5° IR
 Unit: 1 piece
 Manufacturer: Wavin Germany Twist
 Address: Industriestraße 20
 49767 Twist
 Germany
 Contact: <https://www.wavin.com/en-en>

LCA standard: EN15804+A2 (2019)
 Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off
 Externally verified: Yes
 Issue date: 08-04-2022
 End of validity: 08-04-2027
 Verifier: Harry van Ewijk - SGS Search



This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

Wavin AS+ is a mineral-reinforced polypropylene (PP) low noise soil and waste solution. The AS+ has a unique material composition for optimal noise reduction.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin Germany Twist (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 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]

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.20E+0	4.30E-2	5.80E-2	1.30E+0	1.81E-2	6.43E-1	3.85E-3	-6.97E-1	1.27E+0
GWP-f	kg CO2 eq	1.20E+0	4.29E-2	4.73E-2	1.29E+0	1.81E-2	6.03E-1	3.85E-3	-7.79E-1	1.14E+0
GWP-b	kg CO2 eq	-2.27E-3	1.98E-5	7.08E-3	4.83E-3	1.10E-5	3.90E-2	7.36E-6	8.20E-2	1.26E-1
GWP-luluc	kg CO2 eq	1.19E-3	1.57E-5	3.63E-3	4.84E-3	6.40E-6	1.49E-4	1.51E-7	-7.48E-4	4.24E-3
ODP	kg CFC11 eq	1.04E-7	9.47E-9	5.40E-9	1.19E-7	4.17E-9	3.56E-8	2.19E-10	-2.80E-8	1.31E-7
AP	mol H+ eq	5.40E-3	2.49E-4	2.28E-4	5.88E-3	1.03E-4	8.54E-4	5.23E-6	-2.65E-3	4.19E-3
EP-fw	kg P eq	3.42E-5	4.33E-7	7.20E-7	3.53E-5	1.49E-7	7.43E-6	6.87E-9	-1.63E-5	2.66E-5
EP-m	kg N eq	1.04E-3	8.77E-5	5.97E-5	1.19E-3	3.69E-5	2.25E-4	3.32E-6	-4.79E-4	9.73E-4
EP-T	mol N eq	1.16E-2	9.67E-4	6.31E-4	1.32E-2	4.06E-4	2.49E-3	2.12E-5	-5.36E-3	1.08E-2
POCP	kg NMVOC eq	3.98E-3	2.76E-4	1.81E-4	4.44E-3	1.16E-4	7.63E-4	6.84E-6	-2.28E-3	3.05E-3
ADP-mm	kg Sb eq	1.14E-4	1.09E-6	9.73E-7	1.16E-4	4.68E-7	2.99E-6	5.31E-9	-7.15E-6	1.12E-4
ADP-f	MJ	2.57E+1	6.47E-1	5.96E-1	2.70E+1	2.78E-1	2.61E+0	1.60E-2	-2.52E+1	4.69E+0
WDP	m3 depriv.	1.16E+0	2.32E-3	3.54E-1	1.51E+0	8.52E-4	5.92E-2	9.32E-5	-5.68E-1	1.01E+0
PM	disease inc.	5.05E-8	3.85E-9	3.08E-9	5.74E-8	1.63E-9	1.36E-8	1.10E-10	-2.72E-8	4.56E-8
IR	kBq U-235 eq	4.91E-2	2.71E-3	7.95E-4	5.27E-2	1.21E-3	9.23E-3	7.35E-5	-1.71E-2	4.61E-2
ETP-fw	CTUe	2.79E+2	5.77E-1	9.08E-1	2.81E+2	2.26E-1	6.25E+0	1.36E-2	-9.55E+0	2.78E+2
HTP-c	CTUh	4.89E-10	1.87E-11	3.89E-11	5.47E-10	8.03E-12	3.47E-10	3.95E-13	-1.81E-10	7.21E-10
HTP-nc	CTUh	1.31E-7	6.31E-10	9.57E-10	1.33E-7	2.69E-10	4.52E-9	8.06E-12	-5.49E-9	1.32E-7
SQP	Pt	6.93E+0	5.62E-1	5.79E-2	7.55E+0	2.38E-1	1.81E+0	4.11E-2	-1.59E+1	-6.24E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.57E+0	8.10E-3	1.96E+0	3.53E+0	3.98E-3	2.31E-1	5.97E-4	-3.08E+0	6.90E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.57E+0	8.10E-3	1.96E+0	3.53E+0	3.98E-3	2.31E-1	5.97E-4	-3.08E+0	6.90E-1
PENRE	MJ	2.76E+1	6.87E-1	6.49E-1	2.89E+1	2.95E-1	2.78E+0	1.70E-2	-2.71E+1	4.89E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.76E+1	6.87E-1	6.49E-1	2.89E+1	2.95E-1	2.78E+0	1.70E-2	-2.71E+1	4.89E+0
PET	MJ	2.91E+1	6.95E-1	2.61E+0	3.24E+1	2.99E-1	3.01E+0	1.76E-2	-3.02E+1	5.58E+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	2.66E-2	7.88E-5	8.33E-3	3.50E-2	3.14E-5	1.87E-3	1.96E-5	-9.83E-3	2.71E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.33E-5	1.64E-6	7.32E-7	1.57E-5	7.10E-7	5.79E-6	1.94E-8	-5.28E-6	1.69E-5
NHWD	kg	1.10E-1	4.11E-2	2.98E-3	1.54E-1	1.72E-2	1.26E-1	7.05E-2	-2.62E-2	3.41E-1
RWD	kg	5.40E-5	4.25E-6	1.05E-6	5.93E-5	1.89E-6	1.17E-5	1.04E-7	-1.56E-5	5.74E-5
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