

# Environmental Profile

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

Ecochain v3.5.64



Product: 3079985 - AS+ Branch DN 100x70 87°  
 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	☑	☑	☑	☑
<b>Product stage</b>					<b>Use stage</b>							<b>End-of-Life stage</b>				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use							C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal				
<b>Construction process stage</b>					<b>Benefits and loads beyond the system boundaries</b>											
A4 Transport gate to site A5 Assembly / Construction installation process					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]

## Statement of Confidentiality

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# Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.26E+0	4.52E-2	6.13E-2	1.36E+0	1.91E-2	6.68E-1	4.03E-3	-7.35E-1	1.32E+0
GWP-f	kg CO2 eq	1.26E+0	4.52E-2	5.00E-2	1.35E+0	1.91E-2	6.29E-1	4.03E-3	-8.16E-1	1.19E+0
GWP-b	kg CO2 eq	-2.28E-3	2.08E-5	7.48E-3	5.22E-3	1.16E-5	3.91E-2	7.74E-6	8.19E-2	1.26E-1
GWP-luluc	kg CO2 eq	1.22E-3	1.65E-5	3.84E-3	5.08E-3	6.75E-6	1.57E-4	1.59E-7	-7.57E-4	4.49E-3
ODP	kg CFC11 eq	1.07E-7	9.97E-9	5.70E-9	1.23E-7	4.40E-9	3.75E-8	2.31E-10	-2.88E-8	1.37E-7
AP	mol H+ eq	5.64E-3	2.62E-4	2.40E-4	6.14E-3	1.09E-4	9.00E-4	5.50E-6	-2.77E-3	4.38E-3
EP-fw	kg P eq	3.55E-5	4.55E-7	7.61E-7	3.67E-5	1.57E-7	7.85E-6	7.23E-9	-1.68E-5	2.79E-5
EP-m	kg N eq	1.08E-3	9.23E-5	6.31E-5	1.24E-3	3.89E-5	2.37E-4	3.46E-6	-5.00E-4	1.02E-3
EP-T	mol N eq	1.21E-2	1.02E-3	6.67E-4	1.38E-2	4.29E-4	2.61E-3	2.24E-5	-5.59E-3	1.13E-2
POCP	kg NMVOC eq	4.15E-3	2.90E-4	1.91E-4	4.63E-3	1.23E-4	8.02E-4	7.19E-6	-2.39E-3	3.17E-3
ADP-mm	kg Sb eq	1.16E-4	1.14E-6	1.03E-6	1.18E-4	4.94E-7	3.15E-6	5.59E-9	-7.42E-6	1.15E-4
ADP-f	MJ	2.68E+1	6.81E-1	6.30E-1	2.81E+1	2.93E-1	2.75E+0	1.68E-2	-2.65E+1	4.67E+0
WDP	m3 depriv.	1.22E+0	2.44E-3	3.74E-1	1.59E+0	8.99E-4	6.25E-2	9.90E-5	-5.93E-1	1.06E+0
PM	disease inc.	5.23E-8	4.06E-9	3.26E-9	5.97E-8	1.72E-9	1.44E-8	1.16E-10	-2.83E-8	4.76E-8
IR	kBq U-235 eq	5.08E-2	2.85E-3	8.41E-4	5.45E-2	1.28E-3	9.74E-3	7.74E-5	-1.78E-2	4.79E-2
ETP-fw	CTUe	2.95E+2	6.07E-1	9.60E-1	2.96E+2	2.38E-1	6.58E+0	1.42E-2	-9.71E+0	2.93E+2
HTP-c	CTUh	5.10E-10	1.97E-11	4.11E-11	5.71E-10	8.46E-12	3.66E-10	4.16E-13	-1.88E-10	7.58E-10
HTP-nc	CTUh	1.39E-7	6.64E-10	1.01E-9	1.40E-7	2.84E-10	4.77E-9	8.46E-12	-5.70E-9	1.40E-7
SQP	Pt	7.08E+0	5.91E-1	6.11E-2	7.73E+0	2.51E-1	1.91E+0	4.32E-2	-1.59E+1	-5.98E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.61E+0	8.53E-3	2.07E+0	3.68E+0	4.20E-3	2.44E-1	6.27E-4	-3.10E+0	8.35E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.61E+0	8.53E-3	2.07E+0	3.68E+0	4.20E-3	2.44E-1	6.27E-4	-3.10E+0	8.35E-1
PENRE	MJ	2.87E+1	7.23E-1	6.86E-1	3.01E+1	3.11E-1	2.93E+0	1.79E-2	-2.85E+1	4.87E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.87E+1	7.23E-1	6.86E-1	3.01E+1	3.11E-1	2.93E+0	1.79E-2	-2.85E+1	4.87E+0
PET	MJ	3.03E+1	7.32E-1	2.76E+0	3.38E+1	3.15E-1	3.17E+0	1.85E-2	-3.16E+1	5.70E+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	2.79E-2	8.29E-5	8.81E-3	3.68E-2	3.31E-5	1.97E-3	2.07E-5	-1.02E-2	2.86E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.39E-5	1.73E-6	7.74E-7	1.64E-5	7.49E-7	6.10E-6	2.04E-8	-5.45E-6	1.78E-5
NHWD	kg	1.14E-1	4.32E-2	3.15E-3	1.61E-1	1.82E-2	1.33E-1	7.42E-2	-2.73E-2	3.59E-1
RWD	kg	5.57E-5	4.47E-6	1.11E-6	6.13E-5	1.99E-6	1.23E-5	1.10E-7	-1.61E-5	5.95E-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