

# Environmental Profile

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

Ecochain v3.5.64



Product: 3079955 - AS+ Bend DN 125 15°  
 Unit: 1 piece  
 Manufacturer: Wavin Germany Twist  
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 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]

## 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	1.04E+0	3.65E-2	4.88E-2	1.13E+0	1.53E-2	5.63E-1	3.31E-3	-5.87E-1	1.12E+0
GWP-f	kg CO2 eq	1.04E+0	3.65E-2	3.98E-2	1.12E+0	1.53E-2	5.25E-1	3.31E-3	-6.69E-1	9.93E-1
GWP-b	kg CO2 eq	-2.01E-3	1.69E-5	5.96E-3	3.96E-3	9.29E-6	3.87E-2	6.26E-6	8.25E-2	1.25E-1
GWP-luluc	kg CO2 eq	1.09E-3	1.34E-5	3.05E-3	4.16E-3	5.42E-6	1.26E-4	1.28E-7	-7.24E-4	3.56E-3
ODP	kg CFC11 eq	9.32E-8	8.06E-9	4.54E-9	1.06E-7	3.53E-9	3.01E-8	1.86E-10	-2.53E-8	1.14E-7
AP	mol H+ eq	4.71E-3	2.12E-4	1.91E-4	5.11E-3	8.72E-5	7.28E-4	4.44E-6	-2.30E-3	3.63E-3
EP-fw	kg P eq	3.02E-5	3.68E-7	6.05E-7	3.11E-5	1.26E-7	6.27E-6	5.84E-9	-1.49E-5	2.26E-5
EP-m	kg N eq	9.13E-4	7.46E-5	5.02E-5	1.04E-3	3.12E-5	1.93E-4	2.88E-6	-4.20E-4	8.45E-4
EP-T	mol N eq	1.02E-2	8.23E-4	5.31E-4	1.15E-2	3.44E-4	2.13E-3	1.81E-5	-4.70E-3	9.33E-3
POCP	kg NMVOC eq	3.47E-3	2.35E-4	1.52E-4	3.86E-3	9.83E-5	6.52E-4	5.82E-6	-1.96E-3	2.65E-3
ADP-mm	kg Sb eq	1.02E-4	9.25E-7	8.19E-7	1.04E-4	3.96E-7	2.55E-6	4.51E-9	-6.30E-6	1.00E-4
ADP-f	MJ	2.23E+1	5.51E-1	5.01E-1	2.34E+1	2.35E-1	2.21E+0	1.36E-2	-2.15E+1	4.37E+0
WDP	m3 depriv.	9.90E-1	1.97E-3	2.97E-1	1.29E+0	7.21E-4	5.01E-2	7.94E-5	-4.98E-1	8.43E-1
PM	disease inc.	4.46E-8	3.28E-9	2.59E-9	5.05E-8	1.38E-9	1.16E-8	9.35E-11	-2.42E-8	3.94E-8
IR	kBq U-235 eq	4.33E-2	2.31E-3	6.69E-4	4.63E-2	1.03E-3	7.83E-3	6.25E-5	-1.53E-2	3.99E-2
ETP-fw	CTUe	2.37E+2	4.91E-1	7.64E-1	2.38E+2	1.91E-1	5.30E+0	1.17E-2	-9.07E+0	2.35E+2
HTP-c	CTUh	4.27E-10	1.59E-11	3.27E-11	4.75E-10	6.79E-12	2.94E-10	3.36E-13	-1.61E-10	6.16E-10
HTP-nc	CTUh	1.11E-7	5.37E-10	8.05E-10	1.12E-7	2.27E-10	3.84E-9	6.90E-12	-4.90E-9	1.11E-7
SQP	Pt	6.47E+0	4.78E-1	4.87E-2	6.99E+0	2.01E-1	1.53E+0	3.49E-2	-1.58E+1	-7.02E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.45E+0	6.89E-3	1.65E+0	3.10E+0	3.37E-3	1.94E-1	5.08E-4	-3.03E+0	2.73E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.45E+0	6.89E-3	1.65E+0	3.10E+0	3.37E-3	1.94E-1	5.08E-4	-3.03E+0	2.73E-1
PENRE	MJ	2.39E+1	5.85E-1	5.46E-1	2.50E+1	2.49E-1	2.35E+0	1.44E-2	-2.31E+1	4.57E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.39E+1	5.85E-1	5.46E-1	2.50E+1	2.49E-1	2.35E+0	1.44E-2	-2.31E+1	4.57E+0
PET	MJ	2.53E+1	5.92E-1	2.19E+0	2.81E+1	2.53E-1	2.55E+0	1.49E-2	-2.61E+1	4.84E+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	2.28E-2	6.71E-5	7.01E-3	2.99E-2	2.66E-5	1.60E-3	1.67E-5	-8.80E-3	2.27E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.17E-5	1.40E-6	6.16E-7	1.38E-5	6.01E-7	4.92E-6	1.65E-8	-4.74E-6	1.45E-5
NHWD	kg	9.61E-2	3.49E-2	2.51E-3	1.34E-1	1.46E-2	1.07E-1	5.99E-2	-2.32E-2	2.92E-1
RWD	kg	4.79E-5	3.62E-6	8.82E-7	5.24E-5	1.60E-6	9.91E-6	8.85E-8	-1.40E-5	5.00E-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



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