

Environmental Profile

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

Ecochain v3.5.64



Product: 3079954 - AS+ Bend DN 100 87°
 Unit: 1 piece
 Manufacturer: Wavin Germany Twist
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 Germany
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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	1.21E+0	4.43E-2	6.03E-2	1.31E+0	1.86E-2	6.27E-1	3.83E-3	-7.10E-1	1.25E+0
GWP-f	kg CO2 eq	1.21E+0	4.42E-2	4.92E-2	1.30E+0	1.86E-2	5.88E-1	3.82E-3	-7.91E-1	1.12E+0
GWP-b	kg CO2 eq	-1.70E-3	2.04E-5	7.37E-3	5.68E-3	1.13E-5	3.91E-2	7.49E-6	8.19E-2	1.27E-1
GWP-luluc	kg CO2 eq	1.19E-3	1.62E-5	3.78E-3	4.98E-3	6.58E-6	1.54E-4	1.53E-7	-7.53E-4	4.39E-3
ODP	kg CFC11 eq	9.85E-8	9.76E-9	5.62E-9	1.14E-7	4.29E-9	3.68E-8	2.23E-10	-2.69E-8	1.28E-7
AP	mol H+ eq	5.36E-3	2.56E-4	2.37E-4	5.85E-3	1.06E-4	8.80E-4	5.32E-6	-2.72E-3	4.12E-3
EP-fw	kg P eq	3.39E-5	4.46E-7	7.49E-7	3.51E-5	1.53E-7	7.71E-6	6.98E-9	-1.66E-5	2.63E-5
EP-m	kg N eq	1.04E-3	9.04E-5	6.21E-5	1.19E-3	3.79E-5	2.31E-4	3.24E-6	-4.90E-4	9.73E-4
EP-T	mol N eq	1.16E-2	9.96E-4	6.56E-4	1.33E-2	4.18E-4	2.55E-3	2.16E-5	-5.47E-3	1.08E-2
POCP	kg NMVOC eq	3.94E-3	2.85E-4	1.88E-4	4.41E-3	1.19E-4	7.84E-4	6.94E-6	-2.34E-3	2.98E-3
ADP-mm	kg Sb eq	1.03E-4	1.12E-6	1.01E-6	1.05E-4	4.81E-7	3.09E-6	5.40E-9	-6.90E-6	1.02E-4
ADP-f	MJ	2.56E+1	6.67E-1	6.20E-1	2.68E+1	2.86E-1	2.70E+0	1.63E-2	-2.59E+1	3.97E+0
WDP	m3 depriv.	1.18E+0	2.39E-3	3.68E-1	1.55E+0	8.76E-4	6.11E-2	9.45E-5	-5.84E-1	1.03E+0
PM	disease inc.	4.93E-8	3.97E-9	3.21E-9	5.65E-8	1.68E-9	1.41E-8	1.12E-10	-2.78E-8	4.46E-8
IR	kBq U-235 eq	4.74E-2	2.79E-3	8.28E-4	5.10E-2	1.25E-3	9.56E-3	7.48E-5	-1.74E-2	4.45E-2
ETP-fw	CTUe	2.89E+2	5.95E-1	9.45E-1	2.91E+2	2.32E-1	6.42E+0	1.35E-2	-9.62E+0	2.88E+2
HTP-c	CTUh	4.84E-10	1.93E-11	4.05E-11	5.44E-10	8.25E-12	3.59E-10	4.01E-13	-1.84E-10	7.27E-10
HTP-nc	CTUh	1.36E-7	6.51E-10	9.96E-10	1.38E-7	2.76E-10	4.66E-9	8.09E-12	-5.61E-9	1.37E-7
SQP	Pt	6.83E+0	5.79E-1	6.02E-2	7.47E+0	2.44E-1	1.87E+0	4.18E-2	-1.59E+1	-6.26E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.56E+0	8.35E-3	2.04E+0	3.60E+0	4.10E-3	2.39E-1	6.05E-4	-3.09E+0	7.56E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.56E+0	8.35E-3	2.04E+0	3.60E+0	4.10E-3	2.39E-1	6.05E-4	-3.09E+0	7.56E-1
PENRE	MJ	2.74E+1	7.08E-1	6.75E-1	2.87E+1	3.03E-1	2.88E+0	1.73E-2	-2.78E+1	4.13E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.74E+1	7.08E-1	6.75E-1	2.87E+1	3.03E-1	2.88E+0	1.73E-2	-2.78E+1	4.13E+0
PET	MJ	2.89E+1	7.17E-1	2.71E+0	3.23E+1	3.07E-1	3.11E+0	1.79E-2	-3.09E+1	4.89E+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	2.69E-2	8.12E-5	8.67E-3	3.56E-2	3.23E-5	1.89E-3	2.00E-5	-1.01E-2	2.75E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.31E-5	1.69E-6	7.62E-7	1.56E-5	7.30E-7	5.97E-6	1.97E-8	-5.12E-6	1.72E-5
NHWD	kg	1.09E-1	4.23E-2	3.10E-3	1.55E-1	1.77E-2	1.30E-1	7.18E-2	-2.68E-2	3.47E-1
RWD	kg	5.13E-5	4.38E-6	1.09E-6	5.68E-5	1.94E-6	1.21E-5	1.06E-7	-1.57E-5	5.52E-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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