

Environmental Profile

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

Ecochain v3.5.64



Product: 3079950 - AS+ Bend DN 100 15°
 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	8.09E-1	2.92E-2	3.97E-2	8.78E-1	1.24E-2	4.29E-1	2.62E-3	-4.81E-1	8.40E-1
GWP-f	kg CO2 eq	8.10E-1	2.91E-2	3.24E-2	8.71E-1	1.24E-2	4.07E-1	2.62E-3	-5.25E-1	7.68E-1
GWP-b	kg CO2 eq	-1.62E-3	1.35E-5	4.85E-3	3.25E-3	7.52E-6	2.16E-2	5.03E-6	4.43E-2	6.92E-2
GWP-luluc	kg CO2 eq	7.46E-4	1.07E-5	2.49E-3	3.24E-3	4.39E-6	1.02E-4	1.03E-7	-4.30E-4	2.92E-3
ODP	kg CFC11 eq	6.88E-8	6.43E-9	3.70E-9	7.90E-8	2.86E-9	2.42E-8	1.50E-10	-1.80E-8	8.82E-8
AP	mol H+ eq	3.62E-3	1.69E-4	1.56E-4	3.94E-3	7.06E-5	5.80E-4	3.57E-6	-1.76E-3	2.84E-3
EP-fw	kg P eq	2.25E-5	2.94E-7	4.93E-7	2.33E-5	1.02E-7	5.08E-6	4.70E-9	-1.02E-5	1.83E-5
EP-m	kg N eq	6.88E-4	5.96E-5	4.09E-5	7.89E-4	2.53E-5	1.52E-4	2.25E-6	-3.15E-4	6.53E-4
EP-T	mol N eq	7.74E-3	6.57E-4	4.32E-4	8.83E-3	2.78E-4	1.68E-3	1.45E-5	-3.52E-3	7.28E-3
POCP	kg NMVOC eq	2.66E-3	1.88E-4	1.24E-4	2.97E-3	7.96E-5	5.15E-4	4.67E-6	-1.52E-3	2.05E-3
ADP-mm	kg Sb eq	7.56E-5	7.38E-7	6.67E-7	7.70E-5	3.21E-7	2.03E-6	3.63E-9	-4.75E-6	7.46E-5
ADP-f	MJ	1.73E+1	4.40E-1	4.08E-1	1.82E+1	1.90E-1	1.78E+0	1.09E-2	-1.72E+1	3.00E+0
WDP	m3 depriv.	7.87E-1	1.57E-3	2.42E-1	1.03E+0	5.84E-4	4.05E-2	6.43E-5	-3.72E-1	7.00E-1
PM	disease inc.	3.33E-8	2.62E-9	2.11E-9	3.81E-8	1.12E-9	9.27E-9	7.52E-11	-1.75E-8	3.10E-8
IR	kBq U-235 eq	3.27E-2	1.84E-3	5.45E-4	3.51E-2	8.31E-4	6.28E-3	5.02E-5	-1.10E-2	3.12E-2
ETP-fw	CTUe	1.90E+2	3.92E-1	6.22E-1	1.91E+2	1.54E-1	4.25E+0	9.25E-3	-5.64E+0	1.90E+2
HTP-c	CTUh	3.27E-10	1.27E-11	2.67E-11	3.67E-10	5.50E-12	2.36E-10	2.70E-13	-1.17E-10	4.92E-10
HTP-nc	CTUh	8.98E-8	4.29E-10	6.56E-10	9.09E-8	1.84E-10	3.08E-9	5.49E-12	-3.53E-9	9.07E-8
SQP	Pt	4.24E+0	3.81E-1	3.96E-2	4.66E+0	1.63E-1	1.23E+0	2.80E-2	-8.75E+0	-2.66E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.70E-1	5.50E-3	1.34E+0	2.32E+0	2.73E-3	1.58E-1	4.07E-4	-1.72E+0	7.53E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.70E-1	5.50E-3	1.34E+0	2.32E+0	2.73E-3	1.58E-1	4.07E-4	-1.72E+0	7.53E-1
PENRE	MJ	1.85E+1	4.67E-1	4.45E-1	1.95E+1	2.02E-1	1.89E+0	1.16E-2	-1.84E+1	3.12E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.85E+1	4.67E-1	4.45E-1	1.95E+1	2.02E-1	1.89E+0	1.16E-2	-1.84E+1	3.12E+0
PET	MJ	1.95E+1	4.72E-1	1.79E+0	2.18E+1	2.05E-1	2.05E+0	1.20E-2	-2.02E+1	3.87E+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	1.80E-2	5.35E-5	5.71E-3	2.37E-2	2.15E-5	1.27E-3	1.34E-5	-6.30E-3	1.88E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.85E-6	1.11E-6	5.02E-7	1.05E-5	4.86E-7	3.94E-6	1.33E-8	-3.42E-6	1.15E-5
NHWD	kg	7.27E-2	2.79E-2	2.04E-3	1.03E-1	1.18E-2	8.59E-2	4.82E-2	-1.70E-2	2.31E-1
RWD	kg	3.58E-5	2.89E-6	7.19E-7	3.94E-5	1.29E-6	7.94E-6	7.11E-8	-9.96E-6	3.88E-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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