

Environmental Profile

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

Ecochain v3.5.64



Product: 3079952 - AS+ Bend DN 100 45°
 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	9.58E-1	3.52E-2	4.86E-2	1.04E+0	1.51E-2	5.01E-1	3.14E-3	-5.88E-1	9.73E-1
GWP-f	kg CO2 eq	9.59E-1	3.52E-2	3.96E-2	1.03E+0	1.50E-2	4.82E-1	3.13E-3	-6.27E-1	9.07E-1
GWP-b	kg CO2 eq	-1.92E-3	1.62E-5	5.93E-3	4.03E-3	9.14E-6	1.96E-2	6.08E-6	3.88E-2	6.24E-2
GWP-luluc	kg CO2 eq	8.13E-4	1.29E-5	3.04E-3	3.87E-3	5.33E-6	1.24E-4	1.25E-7	-4.18E-4	3.58E-3
ODP	kg CFC11 eq	7.86E-8	7.77E-9	4.52E-9	9.09E-8	3.47E-9	2.93E-8	1.81E-10	-2.02E-8	1.04E-7
AP	mol H+ eq	4.25E-3	2.04E-4	1.91E-4	4.65E-3	8.57E-5	6.98E-4	4.32E-6	-2.07E-3	3.37E-3
EP-fw	kg P eq	2.60E-5	3.55E-7	6.03E-7	2.70E-5	1.24E-7	6.19E-6	5.68E-9	-1.11E-5	2.22E-5
EP-m	kg N eq	8.00E-4	7.19E-5	5.00E-5	9.22E-4	3.07E-5	1.82E-4	2.67E-6	-3.67E-4	7.71E-4
EP-T	mol N eq	9.04E-3	7.93E-4	5.29E-4	1.04E-2	3.38E-4	2.01E-3	1.76E-5	-4.08E-3	8.65E-3
POCP	kg NMVOC eq	3.13E-3	2.26E-4	1.52E-4	3.50E-3	9.66E-5	6.18E-4	5.64E-6	-1.80E-3	2.42E-3
ADP-mm	kg Sb eq	8.63E-5	8.92E-7	8.16E-7	8.80E-5	3.89E-7	2.44E-6	4.39E-9	-5.53E-6	8.53E-5
ADP-f	MJ	2.05E+1	5.31E-1	5.00E-1	2.15E+1	2.31E-1	2.15E+0	1.32E-2	-2.07E+1	3.26E+0
WDP	m3 depriv.	9.46E-1	1.90E-3	2.96E-1	1.24E+0	7.09E-4	4.91E-2	7.77E-5	-4.32E-1	8.63E-1
PM	disease inc.	3.85E-8	3.16E-9	2.59E-9	4.42E-8	1.36E-9	1.12E-8	9.10E-11	-1.99E-8	3.69E-8
IR	kBq U-235 eq	3.79E-2	2.22E-3	6.67E-4	4.08E-2	1.01E-3	7.60E-3	6.07E-5	-1.24E-2	3.71E-2
ETP-fw	CTUe	2.30E+2	4.73E-1	7.61E-1	2.31E+2	1.88E-1	5.14E+0	1.10E-2	-5.71E+0	2.31E+2
HTP-c	CTUh	3.84E-10	1.54E-11	3.26E-11	4.32E-10	6.68E-12	2.86E-10	3.26E-13	-1.33E-10	5.91E-10
HTP-nc	CTUh	1.09E-7	5.18E-10	8.02E-10	1.11E-7	2.24E-10	3.73E-9	6.60E-12	-3.99E-9	1.11E-7
SQP	Pt	4.47E+0	4.61E-1	4.85E-2	4.98E+0	1.98E-1	1.49E+0	3.39E-2	-7.93E+0	-1.22E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.04E+0	6.65E-3	1.64E+0	2.68E+0	3.31E-3	1.92E-1	4.91E-4	-1.60E+0	1.28E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.04E+0	6.65E-3	1.64E+0	2.68E+0	3.31E-3	1.92E-1	4.91E-4	-1.60E+0	1.28E+0
PENRE	MJ	2.20E+1	5.64E-1	5.44E-1	2.31E+1	2.45E-1	2.29E+0	1.40E-2	-2.22E+1	3.38E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.20E+1	5.64E-1	5.44E-1	2.31E+1	2.45E-1	2.29E+0	1.40E-2	-2.22E+1	3.38E+0
PET	MJ	2.30E+1	5.70E-1	2.18E+0	2.57E+1	2.49E-1	2.48E+0	1.45E-2	-2.38E+1	4.66E+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	2.15E-2	6.47E-5	6.98E-3	2.86E-2	2.61E-5	1.53E-3	1.62E-5	-7.10E-3	2.30E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.03E-5	1.35E-6	6.14E-7	1.22E-5	5.91E-7	4.76E-6	1.60E-8	-3.87E-6	1.37E-5
NHWD	kg	8.47E-2	3.37E-2	2.50E-3	1.21E-1	1.43E-2	1.04E-1	5.83E-2	-1.95E-2	2.78E-1
RWD	kg	4.12E-5	3.49E-6	8.79E-7	4.56E-5	1.57E-6	9.59E-6	8.61E-8	-1.12E-5	4.57E-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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