

Environmental Profile

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

Ecochain v3.5.64



Product: 3079969 - AS+ Bend DN 50 87°
 Unit: 1 piece
 Manufacturer: Wavin Germany Twist
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 49767 Twist
 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	2.80E-1	9.78E-3	1.27E-2	3.03E-1	4.01E-3	1.51E-1	8.61E-4	-1.50E-1	3.09E-1
GWP-f	kg CO2 eq	2.80E-1	9.78E-3	1.03E-2	3.00E-1	4.00E-3	1.37E-1	8.61E-4	-1.80E-1	2.62E-1
GWP-b	kg CO2 eq	-3.74E-4	4.51E-6	1.55E-3	1.18E-3	2.43E-6	1.39E-2	1.63E-6	3.02E-2	4.53E-2
GWP-luluc	kg CO2 eq	3.33E-4	3.58E-6	7.95E-4	1.13E-3	1.42E-6	3.31E-5	3.35E-8	-2.50E-4	9.16E-4
ODP	kg CFC11 eq	2.48E-8	2.16E-9	1.18E-9	2.81E-8	9.23E-10	8.01E-9	4.86E-11	-7.22E-9	2.99E-8
AP	mol H+ eq	1.27E-3	5.67E-5	4.98E-5	1.38E-3	2.28E-5	1.95E-4	1.16E-6	-6.43E-4	9.53E-4
EP-fw	kg P eq	8.39E-6	9.86E-8	1.58E-7	8.65E-6	3.29E-8	1.65E-6	1.52E-9	-4.66E-6	5.67E-6
EP-m	kg N eq	2.53E-4	2.00E-5	1.31E-5	2.86E-4	8.16E-6	5.20E-5	7.39E-7	-1.19E-4	2.27E-4
EP-T	mol N eq	2.80E-3	2.20E-4	1.38E-4	3.16E-3	8.99E-5	5.75E-4	4.71E-6	-1.34E-3	2.48E-3
POCP	kg NMVOC eq	9.34E-4	6.29E-5	3.96E-5	1.04E-3	2.57E-5	1.76E-4	1.52E-6	-5.41E-4	6.99E-4
ADP-mm	kg Sb eq	2.56E-5	2.48E-7	2.13E-7	2.61E-5	1.04E-7	6.85E-7	1.18E-9	-1.68E-6	2.52E-5
ADP-f	MJ	5.94E+0	1.47E-1	1.30E-1	6.22E+0	6.15E-2	5.87E-1	3.55E-3	-5.71E+0	1.16E+0
WDP	m3 depriv.	2.62E-1	5.27E-4	7.74E-2	3.40E-1	1.89E-4	1.32E-2	2.10E-5	-1.43E-1	2.10E-1
PM	disease inc.	1.22E-8	8.78E-10	6.75E-10	1.38E-8	3.61E-10	3.10E-9	2.44E-11	-7.15E-9	1.01E-8
IR	kBq U-235 eq	1.15E-2	6.18E-4	1.74E-4	1.23E-2	2.69E-4	2.09E-3	1.63E-5	-4.54E-3	1.01E-2
ETP-fw	CTUe	6.30E+1	1.31E-1	1.99E-1	6.33E+1	4.99E-2	1.40E+0	3.03E-3	-3.03E+0	6.17E+1
HTP-c	CTUh	1.15E-10	4.26E-12	8.52E-12	1.28E-10	1.78E-12	7.85E-11	8.78E-14	-4.71E-11	1.61E-10
HTP-nc	CTUh	2.91E-8	1.44E-10	2.09E-10	2.94E-8	5.95E-11	1.02E-9	1.79E-12	-1.45E-9	2.91E-8
SQP	Pt	2.03E+0	1.28E-1	1.27E-2	2.17E+0	5.26E-2	4.05E-1	9.10E-3	-5.68E+0	-3.04E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.50E-1	1.85E-3	4.29E-1	8.81E-1	8.82E-4	5.11E-2	1.32E-4	-1.07E+0	-1.41E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.50E-1	1.85E-3	4.29E-1	8.81E-1	8.82E-4	5.11E-2	1.32E-4	-1.07E+0	-1.41E-1
PENRE	MJ	6.36E+0	1.57E-1	1.42E-1	6.66E+0	6.52E-2	6.25E-1	3.76E-3	-6.13E+0	1.22E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.36E+0	1.57E-1	1.42E-1	6.66E+0	6.52E-2	6.25E-1	3.76E-3	-6.13E+0	1.22E+0
PET	MJ	6.81E+0	1.58E-1	5.71E-1	7.54E+0	6.61E-2	6.76E-1	3.89E-3	-7.21E+0	1.08E+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	6.06E-3	1.80E-5	1.82E-3	7.90E-3	6.95E-6	4.19E-4	4.35E-6	-2.63E-3	5.70E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.20E-6	3.74E-7	1.60E-7	3.74E-6	1.57E-7	1.31E-6	4.30E-9	-1.35E-6	3.86E-6
NHWD	kg	2.66E-2	9.35E-3	6.53E-4	3.66E-2	3.81E-3	2.84E-2	1.56E-2	-6.75E-3	7.76E-2
RWD	kg	1.26E-5	9.68E-7	2.30E-7	1.38E-5	4.18E-7	2.65E-6	2.31E-8	-4.17E-6	1.27E-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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