

Environmental Profile

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

Ecochain v3.5.64



Product: 3079979 - AS+ Bend DN 90 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
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 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					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use							C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal				
Construction process stage					Benefits and loads beyond the system boundaries											
A4 Transport gate to site A5 Assembly / Construction installation process					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	7.57E-1	2.75E-2	3.74E-2	8.22E-1	1.16E-2	3.98E-1	2.44E-3	-4.49E-1	7.84E-1
GWP-f	kg CO2 eq	7.58E-1	2.75E-2	3.05E-2	8.15E-1	1.16E-2	3.76E-1	2.44E-3	-4.93E-1	7.12E-1
GWP-b	kg CO2 eq	-1.35E-3	1.27E-5	4.56E-3	3.23E-3	7.06E-6	2.15E-2	4.70E-6	4.45E-2	6.92E-2
GWP-luluc	kg CO2 eq	7.11E-4	1.01E-5	2.34E-3	3.06E-3	4.12E-6	9.57E-5	9.65E-8	-4.24E-4	2.74E-3
ODP	kg CFC11 eq	6.33E-8	6.07E-9	3.48E-9	7.28E-8	2.68E-9	2.28E-8	1.40E-10	-1.68E-8	8.16E-8
AP	mol H+ eq	3.38E-3	1.59E-4	1.47E-4	3.68E-3	6.62E-5	5.46E-4	3.34E-6	-1.67E-3	2.63E-3
EP-fw	kg P eq	2.11E-5	2.77E-7	4.64E-7	2.19E-5	9.57E-8	4.78E-6	4.39E-9	-9.80E-6	1.69E-5
EP-m	kg N eq	6.46E-4	5.62E-5	3.85E-5	7.40E-4	2.37E-5	1.43E-4	2.08E-6	-2.99E-4	6.10E-4
EP-T	mol N eq	7.25E-3	6.19E-4	4.07E-4	8.28E-3	2.61E-4	1.58E-3	1.36E-5	-3.34E-3	6.79E-3
POCP	kg NMVOC eq	2.48E-3	1.77E-4	1.17E-4	2.78E-3	7.47E-5	4.85E-4	4.36E-6	-1.44E-3	1.90E-3
ADP-mm	kg Sb eq	6.83E-5	6.96E-7	6.28E-7	6.96E-5	3.01E-7	1.91E-6	3.39E-9	-4.39E-6	6.74E-5
ADP-f	MJ	1.62E+1	4.14E-1	3.84E-1	1.70E+1	1.78E-1	1.68E+0	1.02E-2	-1.61E+1	2.70E+0
WDP	m3 depriv.	7.37E-1	1.48E-3	2.28E-1	9.67E-1	5.48E-4	3.80E-2	6.01E-5	-3.54E-1	6.51E-1
PM	disease inc.	3.11E-8	2.47E-9	1.99E-9	3.55E-8	1.05E-9	8.73E-9	7.04E-11	-1.67E-8	2.86E-8
IR	kBq U-235 eq	3.02E-2	1.74E-3	5.13E-4	3.25E-2	7.80E-4	5.92E-3	4.70E-5	-1.05E-2	2.87E-2
ETP-fw	CTUe	1.79E+2	3.70E-1	5.85E-1	1.80E+2	1.45E-1	3.99E+0	8.58E-3	-5.51E+0	1.78E+2
HTP-c	CTUh	3.05E-10	1.20E-11	2.51E-11	3.42E-10	5.16E-12	2.23E-10	2.52E-13	-1.11E-10	4.59E-10
HTP-nc	CTUh	8.44E-8	4.04E-10	6.17E-10	8.54E-8	1.73E-10	2.90E-9	5.12E-12	-3.37E-9	8.51E-8
SQP	Pt	4.06E+0	3.60E-1	3.73E-2	4.45E+0	1.53E-1	1.16E+0	2.62E-2	-8.72E+0	-2.93E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.27E-1	5.19E-3	1.26E+0	2.19E+0	2.56E-3	1.48E-1	3.80E-4	-1.71E+0	6.35E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.27E-1	5.19E-3	1.26E+0	2.19E+0	2.56E-3	1.48E-1	3.80E-4	-1.71E+0	6.35E-1
PENRE	MJ	1.73E+1	4.40E-1	4.18E-1	1.82E+1	1.89E-1	1.78E+0	1.08E-2	-1.73E+1	2.81E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.73E+1	4.40E-1	4.18E-1	1.82E+1	1.89E-1	1.78E+0	1.08E-2	-1.73E+1	2.81E+0
PET	MJ	1.82E+1	4.45E-1	1.68E+0	2.03E+1	1.92E-1	1.93E+0	1.12E-2	-1.90E+1	3.44E+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	1.68E-2	5.05E-5	5.37E-3	2.23E-2	2.02E-5	1.19E-3	1.25E-5	-6.02E-3	1.75E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.24E-6	1.05E-6	4.72E-7	9.77E-6	4.56E-7	3.70E-6	1.24E-8	-3.20E-6	1.07E-5
NHWD	kg	6.81E-2	2.63E-2	1.92E-3	9.64E-2	1.11E-2	8.08E-2	4.50E-2	-1.62E-2	2.17E-1
RWD	kg	3.29E-5	2.72E-6	6.76E-7	3.63E-5	1.21E-6	7.48E-6	6.65E-8	-9.49E-6	3.56E-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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