

Environmental Profile

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

Ecochain v3.5.64



Product: 3079951 - AS+ Bend DN 100 30°
 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
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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	8.91E-1	3.24E-2	4.40E-2	9.68E-1	1.37E-2	4.70E-1	2.88E-3	-5.29E-1	9.25E-1
GWP-f	kg CO2 eq	8.92E-1	3.23E-2	3.59E-2	9.60E-1	1.37E-2	4.44E-1	2.87E-3	-5.80E-1	8.41E-1
GWP-b	kg CO2 eq	-1.60E-3	1.49E-5	5.37E-3	3.79E-3	8.31E-6	2.51E-2	5.54E-6	5.18E-2	8.07E-2
GWP-luluc	kg CO2 eq	8.36E-4	1.18E-5	2.75E-3	3.60E-3	4.84E-6	1.13E-4	1.14E-7	-4.95E-4	3.22E-3
ODP	kg CFC11 eq	7.46E-8	7.14E-9	4.09E-9	8.59E-8	3.15E-9	2.68E-8	1.65E-10	-1.98E-8	9.61E-8
AP	mol H+ eq	3.98E-3	1.87E-4	1.73E-4	4.34E-3	7.79E-5	6.42E-4	3.94E-6	-1.96E-3	3.11E-3
EP-fw	kg P eq	2.49E-5	3.26E-7	5.46E-7	2.57E-5	1.13E-7	5.62E-6	5.18E-9	-1.15E-5	2.00E-5
EP-m	kg N eq	7.60E-4	6.61E-5	4.53E-5	8.72E-4	2.79E-5	1.68E-4	2.45E-6	-3.51E-4	7.19E-4
EP-T	mol N eq	8.54E-3	7.28E-4	4.79E-4	9.75E-3	3.07E-4	1.86E-3	1.60E-5	-3.92E-3	8.01E-3
POCP	kg NMVOC eq	2.92E-3	2.08E-4	1.37E-4	3.27E-3	8.78E-5	5.71E-4	5.14E-6	-1.69E-3	2.24E-3
ADP-mm	kg Sb eq	8.06E-5	8.19E-7	7.38E-7	8.22E-5	3.54E-7	2.25E-6	4.00E-9	-5.19E-6	7.96E-5
ADP-f	MJ	1.90E+1	4.88E-1	4.52E-1	2.00E+1	2.10E-1	1.97E+0	1.20E-2	-1.90E+1	3.19E+0
WDP	m3 depriv.	8.68E-1	1.74E-3	2.68E-1	1.14E+0	6.45E-4	4.47E-2	7.13E-5	-4.16E-1	7.68E-1
PM	disease inc.	3.66E-8	2.90E-9	2.34E-9	4.19E-8	1.24E-9	1.03E-8	8.29E-11	-1.96E-8	3.38E-8
IR	kBq U-235 eq	3.56E-2	2.04E-3	6.03E-4	3.82E-2	9.18E-4	6.96E-3	5.53E-5	-1.23E-2	3.38E-2
ETP-fw	CTUe	2.10E+2	4.35E-1	6.89E-1	2.11E+2	1.71E-1	4.70E+0	1.01E-2	-6.45E+0	2.10E+2
HTP-c	CTUh	3.60E-10	1.41E-11	2.95E-11	4.04E-10	6.07E-12	2.62E-10	2.98E-13	-1.31E-10	5.41E-10
HTP-nc	CTUh	9.93E-8	4.76E-10	7.26E-10	1.00E-7	2.03E-10	3.41E-9	6.03E-12	-3.95E-9	1.00E-7
SQP	Pt	4.76E+0	4.23E-1	4.39E-2	5.23E+0	1.80E-1	1.36E+0	3.09E-2	-1.02E+1	-3.37E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.09E+0	6.10E-3	1.49E+0	2.58E+0	3.01E-3	1.75E-1	4.48E-4	-2.00E+0	7.59E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.09E+0	6.10E-3	1.49E+0	2.58E+0	3.01E-3	1.75E-1	4.48E-4	-2.00E+0	7.59E-1
PENRE	MJ	2.04E+1	5.18E-1	4.92E-1	2.14E+1	2.23E-1	2.10E+0	1.28E-2	-2.04E+1	3.32E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.04E+1	5.18E-1	4.92E-1	2.14E+1	2.23E-1	2.10E+0	1.28E-2	-2.04E+1	3.32E+0
PET	MJ	2.14E+1	5.24E-1	1.98E+0	2.39E+1	2.26E-1	2.27E+0	1.32E-2	-2.24E+1	4.07E+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	1.98E-2	5.94E-5	6.32E-3	2.62E-2	2.38E-5	1.40E-3	1.48E-5	-7.07E-3	2.06E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.72E-6	1.24E-6	5.55E-7	1.15E-5	5.37E-7	4.36E-6	1.46E-8	-3.77E-6	1.27E-5
NHWD	kg	8.04E-2	3.09E-2	2.26E-3	1.14E-1	1.30E-2	9.50E-2	5.31E-2	-1.90E-2	2.56E-1
RWD	kg	3.88E-5	3.20E-6	7.96E-7	4.28E-5	1.43E-6	8.80E-6	7.84E-8	-1.11E-5	4.20E-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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