

Environmental Profile

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

Ecochain v3.5.64



Product: 3079962 - AS+ Bend DN 150 87°
 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	2.39E+0	8.72E-2	1.19E-1	2.60E+0	3.67E-2	1.25E+0	7.61E-3	-1.40E+0	2.49E+0
GWP-f	kg CO2 eq	2.39E+0	8.71E-2	9.68E-2	2.58E+0	3.67E-2	1.18E+0	7.60E-3	-1.56E+0	2.24E+0
GWP-b	kg CO2 eq	-3.74E-3	4.02E-5	1.45E-2	1.08E-2	2.23E-5	7.59E-2	1.48E-5	1.59E-1	2.46E-1
GWP-luluc	kg CO2 eq	2.34E-3	3.19E-5	7.44E-3	9.80E-3	1.30E-5	3.03E-4	3.03E-7	-1.47E-3	8.65E-3
ODP	kg CFC11 eq	1.98E-7	1.92E-8	1.11E-8	2.28E-7	8.45E-9	7.24E-8	4.41E-10	-5.38E-8	2.56E-7
AP	mol H+ eq	1.06E-2	5.05E-4	4.66E-4	1.16E-2	2.09E-4	1.73E-3	1.05E-5	-5.35E-3	8.23E-3
EP-fw	kg P eq	6.72E-5	8.79E-7	1.47E-6	6.96E-5	3.02E-7	1.52E-5	1.38E-8	-3.25E-5	5.25E-5
EP-m	kg N eq	2.06E-3	1.78E-4	1.22E-4	2.36E-3	7.47E-5	4.55E-4	6.48E-6	-9.63E-4	1.93E-3
EP-T	mol N eq	2.30E-2	1.96E-3	1.29E-3	2.63E-2	8.24E-4	5.03E-3	4.28E-5	-1.08E-2	2.14E-2
POCP	kg NMVOC eq	7.83E-3	5.60E-4	3.70E-4	8.76E-3	2.35E-4	1.54E-3	1.37E-5	-4.59E-3	5.96E-3
ADP-mm	kg Sb eq	2.09E-4	2.21E-6	1.99E-6	2.13E-4	9.49E-7	6.08E-6	1.07E-8	-1.38E-5	2.06E-4
ADP-f	MJ	5.08E+1	1.31E+0	1.22E+0	5.33E+1	5.63E-1	5.31E+0	3.22E-2	-5.10E+1	8.25E+0
WDP	m3 depriv.	2.33E+0	4.70E-3	7.24E-1	3.06E+0	1.73E-3	1.20E-1	1.87E-4	-1.14E+0	2.03E+0
PM	disease inc.	9.82E-8	7.82E-9	6.32E-9	1.12E-7	3.31E-9	2.77E-8	2.22E-10	-5.45E-8	8.91E-8
IR	kBq U-235 eq	9.47E-2	5.51E-3	1.63E-3	1.02E-1	2.46E-3	1.88E-2	1.48E-4	-3.41E-2	8.91E-2
ETP-fw	CTUe	5.69E+2	1.17E+0	1.86E+0	5.72E+2	4.57E-1	1.27E+1	2.68E-2	-1.88E+1	5.66E+2
HTP-c	CTUh	9.62E-10	3.80E-11	7.97E-11	1.08E-9	1.63E-11	7.06E-10	7.93E-13	-3.62E-10	1.44E-9
HTP-nc	CTUh	2.68E-7	1.28E-9	1.96E-9	2.71E-7	5.45E-10	9.18E-9	1.60E-11	-1.10E-8	2.70E-7
SQP	Pt	1.35E+1	1.14E+0	1.18E-1	1.47E+1	4.82E-1	3.68E+0	8.26E-2	-3.08E+1	-1.19E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.06E+0	1.64E-2	4.01E+0	7.09E+0	8.08E-3	4.70E-1	1.20E-3	-6.00E+0	1.57E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.06E+0	1.64E-2	4.01E+0	7.09E+0	8.08E-3	4.70E-1	1.20E-3	-6.00E+0	1.57E+0
PENRE	MJ	5.44E+1	1.40E+0	1.33E+0	5.71E+1	5.98E-1	5.65E+0	3.42E-2	-5.48E+1	8.59E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.44E+1	1.40E+0	1.33E+0	5.71E+1	5.98E-1	5.65E+0	3.42E-2	-5.48E+1	8.59E+0
PET	MJ	5.75E+1	1.41E+0	5.34E+0	6.42E+1	6.06E-1	6.12E+0	3.54E-2	-6.08E+1	1.02E+1
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	5.32E-2	1.60E-4	1.71E-2	7.04E-2	6.37E-5	3.75E-3	3.95E-5	-1.97E-2	5.46E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.61E-5	3.33E-6	1.50E-6	3.09E-5	1.44E-6	1.18E-5	3.90E-8	-1.02E-5	3.39E-5
NHWD	kg	2.17E-1	8.33E-2	6.11E-3	3.06E-1	3.49E-2	2.56E-1	1.42E-1	-5.25E-2	6.86E-1
RWD	kg	1.03E-4	8.63E-6	2.15E-6	1.14E-4	3.83E-6	2.38E-5	2.10E-7	-3.10E-5	1.11E-4
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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