

Environmental Profile

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

Ecochain v3.5.64



Product: 3080004 - AS+ Branch DN 90x70 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
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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	1.08E+0	3.92E-2	5.37E-2	1.18E+0	1.68E-2	5.75E-1	3.54E-3	-6.54E-1	1.12E+0
GWP-f	kg CO2 eq	1.09E+0	3.92E-2	4.38E-2	1.17E+0	1.67E-2	5.49E-1	3.53E-3	-7.05E-1	1.03E+0
GWP-b	kg CO2 eq	-2.31E-3	1.81E-5	6.56E-3	4.27E-3	1.02E-5	2.54E-2	6.79E-6	5.14E-2	8.11E-2
GWP-luluc	kg CO2 eq	9.60E-4	1.44E-5	3.36E-3	4.34E-3	5.92E-6	1.37E-4	1.39E-7	-5.22E-4	3.96E-3
ODP	kg CFC11 eq	9.21E-8	8.65E-9	5.00E-9	1.06E-7	3.86E-9	3.26E-8	2.02E-10	-2.37E-8	1.19E-7
AP	mol H+ eq	4.84E-3	2.27E-4	2.11E-4	5.28E-3	9.53E-5	7.79E-4	4.83E-6	-2.34E-3	3.82E-3
EP-fw	kg P eq	2.99E-5	3.95E-7	6.67E-7	3.10E-5	1.38E-7	6.86E-6	6.34E-9	-1.30E-5	2.49E-5
EP-m	kg N eq	9.15E-4	8.01E-5	5.53E-5	1.05E-3	3.41E-5	2.04E-4	3.04E-6	-4.17E-4	8.75E-4
EP-T	mol N eq	1.03E-2	8.83E-4	5.85E-4	1.18E-2	3.76E-4	2.25E-3	1.96E-5	-4.65E-3	9.78E-3
POCP	kg NMVOC eq	3.57E-3	2.52E-4	1.68E-4	3.99E-3	1.07E-4	6.91E-4	6.31E-6	-2.03E-3	2.76E-3
ADP-mm	kg Sb eq	1.02E-4	9.93E-7	9.02E-7	1.04E-4	4.33E-7	2.72E-6	4.90E-9	-6.38E-6	1.01E-4
ADP-f	MJ	2.33E+1	5.91E-1	5.52E-1	2.44E+1	2.57E-1	2.40E+0	1.48E-2	-2.31E+1	4.00E+0
WDP	m3 depriv.	1.06E+0	2.11E-3	3.28E-1	1.39E+0	7.88E-4	5.47E-2	8.67E-5	-4.90E-1	9.55E-1
PM	disease inc.	4.44E-8	3.52E-9	2.86E-9	5.08E-8	1.51E-9	1.25E-8	1.02E-10	-2.29E-8	4.20E-8
IR	kBq U-235 eq	4.38E-2	2.48E-3	7.37E-4	4.70E-2	1.12E-3	8.46E-3	6.79E-5	-1.43E-2	4.24E-2
ETP-fw	CTUe	2.56E+2	5.27E-1	8.41E-1	2.57E+2	2.09E-1	5.73E+0	1.25E-2	-6.98E+0	2.56E+2
HTP-c	CTUh	4.38E-10	1.71E-11	3.60E-11	4.91E-10	7.42E-12	3.18E-10	3.65E-13	-1.53E-10	6.63E-10
HTP-nc	CTUh	1.21E-7	5.76E-10	8.87E-10	1.23E-7	2.49E-10	4.15E-9	7.43E-12	-4.60E-9	1.23E-7
SQP	Pt	5.39E+0	5.13E-1	5.36E-2	5.96E+0	2.20E-1	1.66E+0	3.79E-2	-1.03E+1	-2.42E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.24E+0	7.40E-3	1.81E+0	3.06E+0	3.69E-3	2.13E-1	5.50E-4	-2.05E+0	1.22E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.24E+0	7.40E-3	1.81E+0	3.06E+0	3.69E-3	2.13E-1	5.50E-4	-2.05E+0	1.22E+0
PENRE	MJ	2.49E+1	6.27E-1	6.01E-1	2.61E+1	2.73E-1	2.55E+0	1.57E-2	-2.48E+1	4.16E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.49E+1	6.27E-1	6.01E-1	2.61E+1	2.73E-1	2.55E+0	1.57E-2	-2.48E+1	4.16E+0
PET	MJ	2.61E+1	6.35E-1	2.42E+0	2.92E+1	2.76E-1	2.76E+0	1.62E-2	-2.69E+1	5.38E+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	2.42E-2	7.20E-5	7.72E-3	3.20E-2	2.91E-5	1.72E-3	1.81E-5	-8.19E-3	2.56E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.18E-5	1.50E-6	6.78E-7	1.40E-5	6.57E-7	5.30E-6	1.79E-8	-4.51E-6	1.54E-5
NHWD	kg	9.68E-2	3.75E-2	2.76E-3	1.37E-1	1.59E-2	1.16E-1	6.51E-2	-2.23E-2	3.11E-1
RWD	kg	4.81E-5	3.88E-6	9.72E-7	5.29E-5	1.75E-6	1.07E-5	9.61E-8	-1.30E-5	5.25E-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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