

Environmental Profile

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

Ecochain v3.5.64



Product: 3080002 - AS+ Branch DN 90x50 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	8.86E-1	3.18E-2	4.32E-2	9.61E-1	1.35E-2	4.73E-1	2.86E-3	-5.23E-1	9.28E-1
GWP-f	kg CO2 eq	8.87E-1	3.18E-2	3.52E-2	9.54E-1	1.35E-2	4.48E-1	2.85E-3	-5.74E-1	8.44E-1
GWP-b	kg CO2 eq	-1.82E-3	1.47E-5	5.28E-3	3.47E-3	8.18E-6	2.51E-2	5.48E-6	5.19E-2	8.04E-2
GWP-luluc	kg CO2 eq	8.34E-4	1.16E-5	2.71E-3	3.55E-3	4.77E-6	1.11E-4	1.12E-7	-4.93E-4	3.17E-3
ODP	kg CFC11 eq	7.64E-8	7.02E-9	4.02E-9	8.74E-8	3.10E-9	2.64E-8	1.63E-10	-2.01E-8	9.70E-8
AP	mol H+ eq	3.97E-3	1.84E-4	1.70E-4	4.32E-3	7.67E-5	6.32E-4	3.89E-6	-1.93E-3	3.10E-3
EP-fw	kg P eq	2.48E-5	3.21E-7	5.36E-7	2.57E-5	1.11E-7	5.53E-6	5.11E-9	-1.14E-5	2.00E-5
EP-m	kg N eq	7.57E-4	6.50E-5	4.45E-5	8.67E-4	2.75E-5	1.66E-4	2.47E-6	-3.47E-4	7.16E-4
EP-T	mol N eq	8.50E-3	7.16E-4	4.70E-4	9.69E-3	3.03E-4	1.84E-3	1.58E-5	-3.87E-3	7.97E-3
POCP	kg NMVOC eq	2.93E-3	2.04E-4	1.35E-4	3.27E-3	8.65E-5	5.63E-4	5.08E-6	-1.67E-3	2.25E-3
ADP-mm	kg Sb eq	8.41E-5	8.05E-7	7.25E-7	8.56E-5	3.49E-7	2.21E-6	3.95E-9	-5.26E-6	8.29E-5
ADP-f	MJ	1.90E+1	4.79E-1	4.44E-1	1.99E+1	2.07E-1	1.94E+0	1.19E-2	-1.87E+1	3.42E+0
WDP	m3 depriv.	8.59E-1	1.71E-3	2.63E-1	1.12E+0	6.35E-4	4.41E-2	6.88E-5	-4.09E-1	7.60E-1
PM	disease inc.	3.68E-8	2.85E-9	2.30E-9	4.19E-8	1.22E-9	1.01E-8	8.19E-11	-1.94E-8	3.39E-8
IR	kBq U-235 eq	3.61E-2	2.01E-3	5.93E-4	3.87E-2	9.04E-4	6.84E-3	5.47E-5	-1.22E-2	3.43E-2
ETP-fw	CTUe	2.07E+2	4.27E-1	6.76E-1	2.08E+2	1.68E-1	4.64E+0	1.01E-2	-6.41E+0	2.07E+2
HTP-c	CTUh	3.58E-10	1.39E-11	2.90E-11	4.01E-10	5.98E-12	2.57E-10	2.93E-13	-1.29E-10	5.35E-10
HTP-nc	CTUh	9.78E-8	4.68E-10	7.13E-10	9.90E-8	2.00E-10	3.35E-9	5.99E-12	-3.91E-9	9.86E-8
SQP	Pt	4.78E+0	4.16E-1	4.31E-2	5.24E+0	1.77E-1	1.34E+0	3.06E-2	-1.02E+1	-3.38E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.09E+0	6.00E-3	1.46E+0	2.55E+0	2.97E-3	1.72E-1	4.44E-4	-1.99E+0	7.35E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.09E+0	6.00E-3	1.46E+0	2.55E+0	2.97E-3	1.72E-1	4.44E-4	-1.99E+0	7.35E-1
PENRE	MJ	2.04E+1	5.09E-1	4.84E-1	2.14E+1	2.20E-1	2.06E+0	1.26E-2	-2.01E+1	3.56E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.04E+1	5.09E-1	4.84E-1	2.14E+1	2.20E-1	2.06E+0	1.26E-2	-2.01E+1	3.56E+0
PET	MJ	2.15E+1	5.15E-1	1.94E+0	2.39E+1	2.23E-1	2.23E+0	1.31E-2	-2.21E+1	4.29E+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	1.96E-2	5.84E-5	6.21E-3	2.59E-2	2.34E-5	1.39E-3	1.46E-5	-6.98E-3	2.04E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.73E-6	1.21E-6	5.46E-7	1.15E-5	5.29E-7	4.29E-6	1.44E-8	-3.81E-6	1.25E-5
NHWD	kg	7.98E-2	3.04E-2	2.22E-3	1.12E-1	1.28E-2	9.36E-2	5.25E-2	-1.88E-2	2.53E-1
RWD	kg	3.97E-5	3.15E-6	7.82E-7	4.36E-5	1.41E-6	8.65E-6	7.75E-8	-1.11E-5	4.27E-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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