

Environmental Profile

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

Ecochain v3.5.64



Product: 3079996 - AS+ Branch DN 50x50 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	4.81E-1	1.63E-2	2.11E-2	5.18E-1	6.67E-3	2.62E-1	1.45E-3	-2.46E-1	5.42E-1
GWP-f	kg CO2 eq	4.81E-1	1.63E-2	1.72E-2	5.14E-1	6.66E-3	2.35E-1	1.45E-3	-3.06E-1	4.51E-1
GWP-b	kg CO2 eq	-6.23E-4	7.54E-6	2.58E-3	1.96E-3	4.05E-6	2.77E-2	2.73E-6	6.07E-2	9.03E-2
GWP-luluc	kg CO2 eq	6.17E-4	5.99E-6	1.32E-3	1.95E-3	2.36E-6	5.52E-5	5.60E-8	-4.88E-4	1.52E-3
ODP	kg CFC11 eq	4.45E-8	3.61E-9	1.97E-9	5.01E-8	1.54E-9	1.34E-8	8.13E-11	-1.30E-8	5.21E-8
AP	mol H+ eq	2.20E-3	9.47E-5	8.29E-5	2.38E-3	3.80E-5	3.29E-4	1.94E-6	-1.12E-3	1.63E-3
EP-fw	kg P eq	1.48E-5	1.65E-7	2.62E-7	1.53E-5	5.48E-8	2.75E-6	2.55E-9	-8.65E-6	9.42E-6
EP-m	kg N eq	4.43E-4	3.34E-5	2.18E-5	4.98E-4	1.36E-5	8.85E-5	1.27E-6	-2.10E-4	3.92E-4
EP-T	mol N eq	4.88E-3	3.68E-4	2.30E-4	5.47E-3	1.50E-4	9.77E-4	7.88E-6	-2.36E-3	4.25E-3
POCP	kg NMVOC eq	1.62E-3	1.05E-4	6.59E-5	1.79E-3	4.28E-5	2.99E-4	2.54E-6	-9.32E-4	1.20E-3
ADP-mm	kg Sb eq	4.62E-5	4.14E-7	3.55E-7	4.70E-5	1.72E-7	1.16E-6	1.97E-9	-2.95E-6	4.54E-5
ADP-f	MJ	1.02E+1	2.46E-1	2.17E-1	1.06E+1	1.02E-1	9.84E-1	5.93E-3	-9.59E+0	2.13E+0
WDP	m3 depriv.	4.42E-1	8.81E-4	1.29E-1	5.72E-1	3.14E-4	2.20E-2	3.48E-5	-2.52E-1	3.42E-1
PM	disease inc.	2.16E-8	1.47E-9	1.12E-9	2.42E-8	6.02E-10	5.22E-9	4.08E-11	-1.29E-8	1.72E-8
IR	kBq U-235 eq	2.03E-2	1.03E-3	2.90E-4	2.16E-2	4.47E-4	3.50E-3	2.73E-5	-8.20E-3	1.74E-2
ETP-fw	CTUe	1.06E+2	2.20E-1	3.31E-1	1.07E+2	8.31E-2	2.35E+0	5.17E-3	-5.82E+0	1.03E+2
HTP-c	CTUh	2.00E-10	7.13E-12	1.42E-11	2.22E-10	2.96E-12	1.31E-10	1.47E-13	-8.45E-11	2.72E-10
HTP-nc	CTUh	4.85E-8	2.40E-10	3.49E-10	4.91E-8	9.90E-11	1.71E-9	3.02E-12	-2.62E-9	4.83E-8
SQP	Pt	3.84E+0	2.14E-1	2.11E-2	4.07E+0	8.75E-2	6.77E-1	1.52E-2	-1.13E+1	-6.45E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.43E-1	3.08E-3	7.13E-1	1.56E+0	1.47E-3	8.51E-2	2.22E-4	-2.12E+0	-4.77E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.43E-1	3.08E-3	7.13E-1	1.56E+0	1.47E-3	8.51E-2	2.22E-4	-2.12E+0	-4.77E-1
PENRE	MJ	1.09E+1	2.62E-1	2.36E-1	1.14E+1	1.09E-1	1.05E+0	6.29E-3	-1.03E+1	2.24E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.09E+1	2.62E-1	2.36E-1	1.14E+1	1.09E-1	1.05E+0	6.29E-3	-1.03E+1	2.24E+0
PET	MJ	1.17E+1	2.65E-1	9.50E-1	1.29E+1	1.10E-1	1.13E+0	6.52E-3	-1.24E+1	1.76E+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	1.03E-2	3.00E-5	3.04E-3	1.34E-2	1.16E-5	7.08E-4	7.28E-6	-4.75E-3	9.34E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.64E-6	6.24E-7	2.67E-7	6.54E-6	2.62E-7	2.20E-6	7.19E-9	-2.42E-6	6.59E-6
NHWD	kg	4.65E-2	1.56E-2	1.09E-3	6.32E-2	6.34E-3	4.76E-2	2.61E-2	-1.20E-2	1.31E-1
RWD	kg	2.25E-5	1.62E-6	3.82E-7	2.45E-5	6.96E-7	4.45E-6	3.86E-8	-7.57E-6	2.21E-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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