

Environmental Profile

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

Ecochain v3.5.64



Product: 3080006 - AS+ Branch DN 90x90 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

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
 A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
 B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
 C4 Disposal

Benefits and loads beyond the system boundaries

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	1.34E+0	4.83E-2	6.56E-2	1.45E+0	2.04E-2	7.08E-1	4.30E-3	-7.88E-1	1.40E+0
GWP-f	kg CO2 eq	1.34E+0	4.82E-2	5.35E-2	1.44E+0	2.04E-2	6.69E-1	4.29E-3	-8.69E-1	1.26E+0
GWP-b	kg CO2 eq	-2.47E-3	2.23E-5	8.02E-3	5.57E-3	1.24E-5	3.93E-2	8.28E-6	8.17E-2	1.27E-1
GWP-luluc	kg CO2 eq	1.27E-3	1.77E-5	4.11E-3	5.40E-3	7.22E-6	1.68E-4	1.70E-7	-7.68E-4	4.81E-3
ODP	kg CFC11 eq	1.13E-7	1.06E-8	6.11E-9	1.30E-7	4.70E-9	4.01E-8	2.47E-10	-3.02E-8	1.45E-7
AP	mol H+ eq	5.98E-3	2.80E-4	2.58E-4	6.52E-3	1.16E-4	9.60E-4	5.88E-6	-2.94E-3	4.66E-3
EP-fw	kg P eq	3.75E-5	4.87E-7	8.15E-7	3.88E-5	1.68E-7	8.40E-6	7.72E-9	-1.75E-5	2.99E-5
EP-m	kg N eq	1.15E-3	9.86E-5	6.76E-5	1.31E-3	4.16E-5	2.52E-4	3.69E-6	-5.29E-4	1.08E-3
EP-T	mol N eq	1.28E-2	1.09E-3	7.14E-4	1.46E-2	4.58E-4	2.79E-3	2.39E-5	-5.90E-3	1.20E-2
POCP	kg NMVOC eq	4.40E-3	3.10E-4	2.05E-4	4.91E-3	1.31E-4	8.54E-4	7.68E-6	-2.53E-3	3.37E-3
ADP-mm	kg Sb eq	1.23E-4	1.22E-6	1.10E-6	1.25E-4	5.28E-7	3.36E-6	5.97E-9	-7.86E-6	1.21E-4
ADP-f	MJ	2.86E+1	7.27E-1	6.75E-1	3.00E+1	3.13E-1	2.94E+0	1.80E-2	-2.83E+1	4.91E+0
WDP	m3 depriv.	1.30E+0	2.60E-3	4.00E-1	1.70E+0	9.62E-4	6.68E-2	1.05E-4	-6.26E-1	1.14E+0
PM	disease inc.	5.53E-8	4.33E-9	3.49E-9	6.31E-8	1.84E-9	1.53E-8	1.24E-10	-2.97E-8	5.07E-8
IR	kBq U-235 eq	5.39E-2	3.05E-3	9.00E-4	5.78E-2	1.37E-3	1.04E-2	8.27E-5	-1.86E-2	5.10E-2
ETP-fw	CTUe	3.15E+2	6.49E-1	1.03E+0	3.16E+2	2.54E-1	7.03E+0	1.52E-2	-9.94E+0	3.14E+2
HTP-c	CTUh	5.41E-10	2.10E-11	4.40E-11	6.06E-10	9.05E-12	3.91E-10	4.44E-13	-1.98E-10	8.08E-10
HTP-nc	CTUh	1.48E-7	7.10E-10	1.08E-9	1.50E-7	3.03E-10	5.09E-9	9.03E-12	-5.98E-9	1.50E-7
SQP	Pt	7.31E+0	6.31E-1	6.55E-2	8.01E+0	2.68E-1	2.04E+0	4.62E-2	-1.60E+1	-5.60E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.66E+0	9.11E-3	2.22E+0	3.89E+0	4.50E-3	2.61E-1	6.70E-4	-3.12E+0	1.03E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.66E+0	9.11E-3	2.22E+0	3.89E+0	4.50E-3	2.61E-1	6.70E-4	-3.12E+0	1.03E+0
PENRE	MJ	3.06E+1	7.72E-1	7.35E-1	3.21E+1	3.33E-1	3.13E+0	1.91E-2	-3.04E+1	5.11E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.06E+1	7.72E-1	7.35E-1	3.21E+1	3.33E-1	3.13E+0	1.91E-2	-3.04E+1	5.11E+0
PET	MJ	3.22E+1	7.81E-1	2.95E+0	3.60E+1	3.37E-1	3.39E+0	1.98E-2	-3.36E+1	6.15E+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	2.97E-2	8.86E-5	9.43E-3	3.92E-2	3.55E-5	2.10E-3	2.21E-5	-1.07E-2	3.07E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.47E-5	1.84E-6	8.29E-7	1.73E-5	8.01E-7	6.51E-6	2.18E-8	-5.72E-6	1.89E-5
NHWD	kg	1.21E-1	4.61E-2	3.38E-3	1.70E-1	1.94E-2	1.42E-1	7.93E-2	-2.87E-2	3.82E-1
RWD	kg	5.90E-5	4.78E-6	1.19E-6	6.49E-5	2.13E-6	1.31E-5	1.17E-7	-1.69E-5	6.34E-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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