

Environmental Profile

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

Ecochain v3.5.64



Product: 3079970 - AS+ Bend DN 70 15°
 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
 End of validity: 08-04-2027
 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	3.42E-1	1.20E-2	1.57E-2	3.70E-1	5.06E-3	1.86E-1	1.10E-3	-1.97E-1	3.65E-1
GWP-f	kg CO2 eq	3.42E-1	1.20E-2	1.28E-2	3.67E-1	5.06E-3	1.76E-1	1.10E-3	-2.19E-1	3.30E-1
GWP-b	kg CO2 eq	-7.92E-4	5.52E-6	1.92E-3	1.14E-3	3.07E-6	1.07E-2	2.07E-6	2.24E-2	3.42E-2
GWP-luluc	kg CO2 eq	3.35E-4	4.38E-6	9.85E-4	1.32E-3	1.79E-6	4.14E-5	4.25E-8	-2.05E-4	1.16E-3
ODP	kg CFC11 eq	3.06E-8	2.64E-9	1.46E-9	3.47E-8	1.17E-9	9.89E-9	6.17E-11	-8.13E-9	3.77E-8
AP	mol H+ eq	1.55E-3	6.94E-5	6.17E-5	1.68E-3	2.88E-5	2.38E-4	1.47E-6	-7.37E-4	1.21E-3
EP-fw	kg P eq	9.75E-6	1.21E-7	1.95E-7	1.01E-5	4.16E-8	2.07E-6	1.93E-9	-4.52E-6	7.65E-6
EP-m	kg N eq	2.95E-4	2.44E-5	1.62E-5	3.36E-4	1.03E-5	6.30E-5	9.58E-7	-1.34E-4	2.77E-4
EP-T	mol N eq	3.31E-3	2.69E-4	1.71E-4	3.75E-3	1.14E-4	6.95E-4	5.98E-6	-1.49E-3	3.07E-3
POCP	kg NMVOC eq	1.14E-3	7.69E-5	4.91E-5	1.27E-3	3.25E-5	2.13E-4	1.93E-6	-6.34E-4	8.80E-4
ADP-mm	kg Sb eq	3.42E-5	3.03E-7	2.64E-7	3.47E-5	1.31E-7	8.31E-7	1.49E-9	-2.07E-6	3.36E-5
ADP-f	MJ	7.37E+0	1.80E-1	1.62E-1	7.71E+0	7.76E-2	7.26E-1	4.50E-3	-7.06E+0	1.46E+0
WDP	m3 depriv.	3.27E-1	6.45E-4	9.60E-2	4.24E-1	2.38E-4	1.65E-2	2.63E-5	-1.57E-1	2.83E-1
PM	disease inc.	1.45E-8	1.07E-9	8.37E-10	1.64E-8	4.57E-10	3.79E-9	3.10E-11	-7.53E-9	1.32E-8
IR	kBq U-235 eq	1.43E-2	7.56E-4	2.16E-4	1.52E-2	3.39E-4	2.57E-3	2.07E-5	-4.77E-3	1.34E-2
ETP-fw	CTUe	7.77E+1	1.61E-1	2.46E-1	7.81E+1	6.30E-2	1.75E+0	3.90E-3	-2.63E+0	7.73E+1
HTP-c	CTUh	1.40E-10	5.22E-12	1.06E-11	1.56E-10	2.24E-12	9.65E-11	1.11E-13	-5.04E-11	2.04E-10
HTP-nc	CTUh	3.66E-8	1.76E-10	2.60E-10	3.70E-8	7.52E-11	1.26E-9	2.29E-12	-1.52E-9	3.68E-8
SQP	Pt	1.95E+0	1.56E-1	1.57E-2	2.13E+0	6.64E-2	5.02E-1	1.15E-2	-4.34E+0	-1.63E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.41E-1	2.26E-3	5.31E-1	9.74E-1	1.11E-3	6.41E-2	1.68E-4	-8.42E-1	1.98E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.41E-1	2.26E-3	5.31E-1	9.74E-1	1.11E-3	6.41E-2	1.68E-4	-8.42E-1	1.98E-1
PENRE	MJ	7.89E+0	1.92E-1	1.76E-1	8.25E+0	8.24E-2	7.73E-1	4.77E-3	-7.59E+0	1.52E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.89E+0	1.92E-1	1.76E-1	8.25E+0	8.24E-2	7.73E-1	4.77E-3	-7.59E+0	1.52E+0
PET	MJ	8.33E+0	1.94E-1	7.07E-1	9.23E+0	8.35E-2	8.37E-1	4.94E-3	-8.43E+0	1.72E+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	7.51E-3	2.20E-5	2.26E-3	9.79E-3	8.79E-6	5.29E-4	5.52E-6	-2.72E-3	7.61E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.82E-6	4.57E-7	1.99E-7	4.48E-6	1.99E-7	1.61E-6	5.46E-9	-1.53E-6	4.76E-6
NHWD	kg	3.12E-2	1.14E-2	8.10E-4	4.34E-2	4.81E-3	3.52E-2	1.98E-2	-7.28E-3	9.60E-2
RWD	kg	1.58E-5	1.18E-6	2.85E-7	1.73E-5	5.28E-7	3.25E-6	2.93E-8	-4.36E-6	1.67E-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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