

Environmental Profile

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

Ecochain v3.5.64



Product: 3079965 - AS+ Bend DN 50 15°
 Unit: 1 piece
 Manufacturer: Wavin Germany Twist
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 49767 Twist
 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	2.34E-1	7.84E-3	9.82E-3	2.51E-1	3.19E-3	1.28E-1	7.10E-4	-1.18E-1	2.65E-1
GWP-f	kg CO2 eq	2.34E-1	7.83E-3	8.01E-3	2.50E-1	3.19E-3	1.14E-1	7.10E-4	-1.48E-1	2.19E-1
GWP-b	kg CO2 eq	-3.08E-4	3.61E-6	1.20E-3	8.95E-4	1.94E-6	1.38E-2	1.31E-6	3.04E-2	4.51E-2
GWP-luluc	kg CO2 eq	3.05E-4	2.87E-6	6.15E-4	9.23E-4	1.13E-6	2.63E-5	2.72E-8	-2.43E-4	7.08E-4
ODP	kg CFC11 eq	2.19E-8	1.73E-9	9.14E-10	2.45E-8	7.35E-10	6.38E-9	3.89E-11	-6.44E-9	2.52E-8
AP	mol H+ eq	1.08E-3	4.54E-5	3.85E-5	1.16E-3	1.82E-5	1.57E-4	9.32E-7	-5.41E-4	7.99E-4
EP-fw	kg P eq	7.28E-6	7.90E-8	1.22E-7	7.48E-6	2.62E-8	1.30E-6	1.23E-9	-4.25E-6	4.55E-6
EP-m	kg N eq	2.17E-4	1.60E-5	1.01E-5	2.43E-4	6.50E-6	4.25E-5	6.12E-7	-1.02E-4	1.91E-4
EP-T	mol N eq	2.39E-3	1.76E-4	1.07E-4	2.67E-3	7.16E-5	4.69E-4	3.78E-6	-1.15E-3	2.07E-3
POCP	kg NMVOC eq	7.90E-4	5.04E-5	3.06E-5	8.71E-4	2.05E-5	1.43E-4	1.22E-6	-4.50E-4	5.85E-4
ADP-mm	kg Sb eq	2.27E-5	1.98E-7	1.65E-7	2.30E-5	8.25E-8	5.55E-7	9.47E-10	-1.43E-6	2.22E-5
ADP-f	MJ	4.94E+0	1.18E-1	1.01E-1	5.16E+0	4.89E-2	4.69E-1	2.84E-3	-4.61E+0	1.07E+0
WDP	m3 depriv.	2.13E-1	4.22E-4	5.99E-2	2.73E-1	1.50E-4	1.05E-2	1.78E-5	-1.22E-1	1.62E-1
PM	disease inc.	1.06E-8	7.03E-10	5.23E-10	1.19E-8	2.88E-10	2.49E-9	1.96E-11	-6.28E-9	8.39E-9
IR	kBq U-235 eq	9.89E-3	4.95E-4	1.35E-4	1.05E-2	2.14E-4	1.67E-3	1.31E-5	-4.01E-3	8.40E-3
ETP-fw	CTUe	5.02E+1	1.05E-1	1.54E-1	5.05E+1	3.97E-2	1.12E+0	2.49E-3	-2.89E+0	4.87E+1
HTP-c	CTUh	9.87E-11	3.42E-12	6.59E-12	1.09E-10	1.41E-12	6.35E-11	7.13E-14	-4.12E-11	1.32E-10
HTP-nc	CTUh	2.29E-8	1.15E-10	1.62E-10	2.32E-8	4.74E-11	8.19E-10	1.46E-12	-1.28E-9	2.28E-8
SQP	Pt	1.90E+0	1.02E-1	9.80E-3	2.02E+0	4.19E-2	3.23E-1	7.29E-3	-5.65E+0	-3.26E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.17E-1	1.48E-3	3.32E-1	7.50E-1	7.02E-4	4.03E-2	1.06E-4	-1.06E+0	-2.68E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.17E-1	1.48E-3	3.32E-1	7.50E-1	7.02E-4	4.03E-2	1.06E-4	-1.06E+0	-2.68E-1
PENRE	MJ	5.29E+0	1.25E-1	1.10E-1	5.52E+0	5.19E-2	4.99E-1	3.02E-3	-4.96E+0	1.12E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.29E+0	1.25E-1	1.10E-1	5.52E+0	5.19E-2	4.99E-1	3.02E-3	-4.96E+0	1.12E+0
PET	MJ	5.71E+0	1.27E-1	4.42E-1	6.27E+0	5.27E-2	5.40E-1	3.12E-3	-6.02E+0	8.54E-1
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	4.97E-3	1.44E-5	1.41E-3	6.40E-3	5.54E-6	3.38E-4	3.49E-6	-2.32E-3	4.42E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.78E-6	2.99E-7	1.24E-7	3.20E-6	1.25E-7	1.05E-6	3.46E-9	-1.19E-6	3.19E-6
NHWD	kg	2.29E-2	7.49E-3	5.06E-4	3.09E-2	3.03E-3	2.28E-2	1.25E-2	-5.87E-3	6.33E-2
RWD	kg	1.09E-5	7.75E-7	1.78E-7	1.19E-5	3.33E-7	2.12E-6	1.85E-8	-3.71E-6	1.07E-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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