

# Environmental Profile

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

Ecochain v3.5.64



Product: 3080062 - AS+ Pipe LGY DN50 L=2,7 S/PL  
 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	☑	☑	☑	☑
<b>Product stage</b>					<b>Use stage</b>							<b>End-of-Life stage</b>				
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				
<b>Construction process stage</b>					<b>Benefits and loads beyond the system boundaries</b>											
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]

## Statement of Confidentiality

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# Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.14E+0	8.89E-2	1.70E-1	3.40E+0	5.97E-2	1.59E+0	1.15E-2	-2.09E+0	2.97E+0
GWP-f	kg CO2 eq	3.14E+0	8.88E-2	1.41E-1	3.37E+0	5.97E-2	1.59E+0	1.15E-2	-2.08E+0	2.95E+0
GWP-b	kg CO2 eq	-5.77E-3	4.10E-5	2.08E-2	1.51E-2	3.62E-5	6.07E-3	2.10E-5	-8.35E-3	1.29E-2
GWP-luluc	kg CO2 eq	1.82E-3	3.26E-5	8.27E-3	1.01E-2	2.11E-5	4.60E-4	4.37E-7	-4.59E-4	1.02E-2
ODP	kg CFC11 eq	2.08E-7	1.96E-8	1.70E-8	2.44E-7	1.38E-8	1.01E-7	6.75E-10	-5.61E-8	3.04E-7
AP	mol H+ eq	1.32E-2	5.15E-4	6.43E-4	1.43E-2	3.40E-4	2.51E-3	1.58E-5	-6.53E-3	1.07E-2
EP-fw	kg P eq	7.54E-5	8.96E-7	1.97E-6	7.83E-5	4.91E-7	2.16E-5	1.98E-8	-2.63E-5	7.42E-5
EP-m	kg N eq	2.40E-3	1.82E-4	1.89E-4	2.78E-3	1.22E-4	6.53E-4	9.16E-6	-1.12E-3	2.44E-3
EP-T	mol N eq	2.74E-2	2.00E-3	1.97E-3	3.14E-2	1.34E-3	7.22E-3	6.45E-5	-1.24E-2	2.76E-2
POCP	kg NMVOC eq	9.99E-3	5.71E-4	5.65E-4	1.11E-2	3.83E-4	2.24E-3	2.07E-5	-5.82E-3	7.95E-3
ADP-mm	kg Sb eq	2.26E-4	2.25E-6	2.31E-6	2.31E-4	1.54E-6	9.01E-6	1.58E-8	-1.61E-5	2.25E-4
ADP-f	MJ	7.30E+1	1.34E+0	1.81E+0	7.61E+1	9.16E-1	7.96E+0	4.88E-2	-7.03E+1	1.47E+1
WDP	m3 depriv.	3.11E+0	4.79E-3	9.89E-1	4.11E+0	2.81E-3	1.78E-1	2.41E-4	-1.30E+0	2.98E+0
PM	disease inc.	1.13E-7	7.98E-9	9.94E-9	1.31E-7	5.39E-9	4.10E-8	3.34E-10	-5.58E-8	1.22E-7
IR	kBq U-235 eq	1.11E-1	5.61E-3	2.60E-3	1.19E-1	4.00E-3	2.74E-2	2.24E-4	-3.41E-2	1.17E-1
ETP-fw	CTUe	7.20E+2	1.19E+0	2.33E+0	7.23E+2	7.44E-1	1.73E+1	3.83E-2	-9.30E+0	7.32E+2
HTP-c	CTUh	1.13E-9	3.88E-11	1.03E-10	1.27E-9	2.65E-11	1.02E-9	1.12E-12	-3.79E-10	1.94E-9
HTP-nc	CTUh	3.48E-7	1.31E-9	2.41E-9	3.52E-7	8.87E-10	1.34E-8	2.32E-11	-1.11E-8	3.55E-7
SQP	Pt	8.69E+0	1.16E+0	1.97E-1	1.00E+1	7.84E-1	5.69E+0	1.24E-1	-1.93E+0	1.47E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.27E+0	1.68E-2	4.46E+0	6.75E+0	1.31E-2	6.70E-1	1.74E-3	-9.40E-1	6.49E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.27E+0	1.68E-2	4.46E+0	6.75E+0	1.31E-2	6.70E-1	1.74E-3	-9.40E-1	6.49E+0
PENRE	MJ	7.82E+1	1.42E+0	1.97E+0	8.16E+1	9.73E-1	8.47E+0	5.18E-2	-7.56E+1	1.54E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.82E+1	1.42E+0	1.97E+0	8.16E+1	9.73E-1	8.47E+0	5.18E-2	-7.56E+1	1.54E+1
PET	MJ	8.04E+1	1.44E+0	6.44E+0	8.83E+1	9.86E-1	9.14E+0	5.35E-2	-7.66E+1	2.19E+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	6.82E-2	1.63E-4	2.33E-2	9.17E-2	1.04E-4	5.31E-3	5.99E-5	-1.94E-2	7.77E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.86E-5	3.40E-6	2.46E-6	3.44E-5	2.34E-6	1.67E-5	5.85E-8	-1.11E-5	4.24E-5
NHWD	kg	2.42E-1	8.50E-2	1.02E-2	3.37E-1	5.68E-2	3.82E-1	2.27E-1	-5.64E-2	9.47E-1
RWD	kg	1.17E-4	8.80E-6	3.59E-6	1.30E-4	6.23E-6	3.45E-5	3.19E-7	-3.00E-5	1.41E-4
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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