

# Environmental Profile

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

Ecochain v3.5.64



Product: 3080050 - AS+ Pipe LGY DN150 L=3 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	2.20E+1	6.34E-1	1.17E+0	2.38E+1	4.24E-1	1.13E+1	7.71E-2	-1.47E+1	2.09E+1
GWP-f	kg CO2 eq	2.20E+1	6.34E-1	9.66E-1	2.36E+1	4.24E-1	1.12E+1	7.71E-2	-1.46E+1	2.07E+1
GWP-b	kg CO2 eq	-4.30E-2	2.92E-4	1.43E-1	1.00E-1	2.57E-4	4.00E-2	1.49E-4	-5.90E-2	8.17E-2
GWP-luluc	kg CO2 eq	1.31E-2	2.32E-4	5.68E-2	7.02E-2	1.50E-4	3.31E-3	3.09E-6	-3.24E-3	7.04E-2
ODP	kg CFC11 eq	1.50E-6	1.40E-7	1.17E-7	1.76E-6	9.77E-8	7.32E-7	4.79E-9	-3.88E-7	2.21E-6
AP	mol H+ eq	9.27E-2	3.67E-3	4.41E-3	1.01E-1	2.42E-3	1.80E-2	1.12E-4	-4.61E-2	7.52E-2
EP-fw	kg P eq	5.39E-4	6.39E-6	1.36E-5	5.58E-4	3.49E-6	1.57E-4	1.40E-7	-1.86E-4	5.34E-4
EP-m	kg N eq	1.70E-2	1.29E-3	1.30E-3	1.96E-2	8.64E-4	4.68E-3	6.45E-5	-7.89E-3	1.73E-2
EP-T	mol N eq	1.94E-1	1.43E-2	1.36E-2	2.22E-1	9.52E-3	5.17E-2	4.57E-4	-8.75E-2	1.96E-1
POCP	kg NMVOC eq	7.00E-2	4.08E-3	3.88E-3	7.79E-2	2.72E-3	1.60E-2	1.46E-4	-4.11E-2	5.57E-2
ADP-mm	kg Sb eq	1.64E-3	1.61E-5	1.59E-5	1.67E-3	1.10E-5	6.45E-5	1.12E-7	-1.13E-4	1.63E-3
ADP-f	MJ	4.96E+2	9.55E+0	1.24E+1	5.18E+2	6.51E+0	5.72E+1	3.46E-1	-4.96E+2	8.65E+1
WDP	m3 depriv.	2.21E+1	3.42E-2	6.79E+0	2.89E+1	2.00E-2	1.28E+0	1.70E-3	-9.21E+0	2.10E+1
PM	disease inc.	7.92E-7	5.69E-8	6.83E-8	9.17E-7	3.83E-8	2.94E-7	2.37E-9	-3.94E-7	8.58E-7
IR	kBq U-235 eq	7.95E-1	4.00E-2	1.79E-2	8.53E-1	2.84E-2	1.97E-1	1.58E-3	-2.41E-1	8.40E-1
ETP-fw	CTUe	5.30E+3	8.52E+0	1.60E+1	5.32E+3	5.28E+0	1.26E+2	2.71E-1	-6.57E+1	5.39E+3
HTP-c	CTUh	8.04E-9	2.76E-10	7.09E-10	9.03E-9	1.88E-10	7.29E-9	7.93E-12	-2.67E-9	1.38E-8
HTP-nc	CTUh	2.56E-6	9.32E-9	1.66E-8	2.59E-6	6.30E-9	9.65E-8	1.63E-10	-7.81E-8	2.61E-6
SQP	Pt	6.21E+1	8.29E+0	1.35E+0	7.17E+1	5.57E+0	4.07E+1	8.78E-1	-1.35E+1	1.05E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.60E+1	1.20E-1	3.07E+1	4.68E+1	9.34E-2	4.86E+0	1.23E-2	-6.63E+0	4.52E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.60E+1	1.20E-1	3.07E+1	4.68E+1	9.34E-2	4.86E+0	1.23E-2	-6.63E+0	4.52E+1
PENRE	MJ	5.31E+2	1.01E+1	1.35E+1	5.55E+2	6.91E+0	6.08E+1	3.67E-1	-5.33E+2	9.02E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.31E+2	1.01E+1	1.35E+1	5.55E+2	6.91E+0	6.08E+1	3.67E-1	-5.33E+2	9.02E+1
PET	MJ	5.47E+2	1.03E+1	4.42E+1	6.02E+2	7.00E+0	6.57E+1	3.79E-1	-5.39E+2	1.35E+2
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	4.90E-1	1.16E-3	1.60E-1	6.51E-1	7.36E-4	3.82E-2	4.24E-4	-1.37E-1	5.53E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.05E-4	2.42E-5	1.69E-5	2.46E-4	1.66E-5	1.21E-4	4.15E-7	-7.66E-5	3.07E-4
NHWD	kg	1.73E+0	6.06E-1	7.03E-2	2.41E+0	4.03E-1	2.74E+0	1.61E+0	-3.98E-1	6.78E+0
RWD	kg	8.42E-4	6.27E-5	2.47E-5	9.30E-4	4.43E-5	2.49E-4	2.26E-6	-2.11E-4	1.01E-3
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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