

# Environmental Profile

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

Ecochain v3.5.64



Product: 3080065 - AS+ Pipe LGY DN70 L=0,25 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	☑	☑	☑	☑

## 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]

## 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	8.74E-1	3.12E-2	4.07E-2	9.46E-1	1.26E-2	4.55E-1	2.57E-3	-4.49E-1	9.66E-1
GWP-f	kg CO2 eq	8.73E-1	3.11E-2	3.32E-2	9.37E-1	1.26E-2	3.99E-1	2.57E-3	-5.70E-1	7.82E-1
GWP-b	kg CO2 eq	-1.37E-4	1.44E-5	4.97E-3	4.85E-3	7.63E-6	5.53E-2	5.04E-6	1.21E-1	1.82E-1
GWP-luluc	kg CO2 eq	1.17E-3	1.14E-5	2.55E-3	3.73E-3	4.45E-6	1.06E-4	1.03E-7	-9.69E-4	2.87E-3
ODP	kg CFC11 eq	7.33E-8	6.87E-9	3.79E-9	8.39E-8	2.89E-9	2.58E-8	1.50E-10	-2.29E-8	8.99E-8
AP	mol H+ eq	3.94E-3	1.81E-4	1.60E-4	4.28E-3	7.15E-5	6.26E-4	3.58E-6	-2.15E-3	2.83E-3
EP-fw	kg P eq	2.69E-5	3.14E-7	5.05E-7	2.78E-5	1.03E-7	5.28E-6	4.71E-9	-1.70E-5	1.62E-5
EP-m	kg N eq	8.11E-4	6.36E-5	4.19E-5	9.17E-4	2.56E-5	1.68E-4	2.16E-6	-4.03E-4	7.10E-4
EP-T	mol N eq	8.89E-3	7.02E-4	4.43E-4	1.00E-2	2.82E-4	1.85E-3	1.46E-5	-4.53E-3	7.65E-3
POCP	kg NMVOC eq	2.88E-3	2.00E-4	1.27E-4	3.20E-3	8.06E-5	5.68E-4	4.67E-6	-1.78E-3	2.08E-3
ADP-mm	kg Sb eq	6.83E-5	7.89E-7	6.83E-7	6.98E-5	3.25E-7	2.23E-6	3.64E-9	-5.03E-6	6.73E-5
ADP-f	MJ	1.81E+1	4.70E-1	4.18E-1	1.89E+1	1.93E-1	1.89E+0	1.10E-2	-1.81E+1	2.94E+0
WDP	m3 depriv.	8.17E-1	1.68E-3	2.48E-1	1.07E+0	5.92E-4	4.17E-2	6.45E-5	-4.89E-1	6.20E-1
PM	disease inc.	3.81E-8	2.80E-9	2.16E-9	4.31E-8	1.13E-9	1.00E-8	7.55E-11	-2.50E-8	2.93E-8
IR	kBq U-235 eq	3.45E-2	1.97E-3	5.58E-4	3.70E-2	8.43E-4	6.73E-3	5.04E-5	-1.58E-2	2.88E-2
ETP-fw	CTUe	2.04E+2	4.19E-1	6.37E-1	2.05E+2	1.57E-1	4.45E+0	9.01E-3	-1.15E+1	1.98E+2
HTP-c	CTUh	3.59E-10	1.36E-11	2.73E-11	4.00E-10	5.57E-12	2.52E-10	2.70E-13	-1.63E-10	4.95E-10
HTP-nc	CTUh	9.28E-8	4.58E-10	6.71E-10	9.39E-8	1.87E-10	3.26E-9	5.44E-12	-5.09E-9	9.23E-8
SQP	Pt	7.24E+0	4.07E-1	4.06E-2	7.69E+0	1.65E-1	1.30E+0	2.82E-2	-2.26E+1	-1.34E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.60E+0	5.88E-3	1.37E+0	2.98E+0	2.77E-3	1.63E-1	4.07E-4	-4.23E+0	-1.09E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.60E+0	5.88E-3	1.37E+0	2.98E+0	2.77E-3	1.63E-1	4.07E-4	-4.23E+0	-1.09E+0
PENRE	MJ	1.93E+1	4.99E-1	4.55E-1	2.03E+1	2.05E-1	2.01E+0	1.16E-2	-1.94E+1	3.09E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.93E+1	4.99E-1	4.55E-1	2.03E+1	2.05E-1	2.01E+0	1.16E-2	-1.94E+1	3.09E+0
PET	MJ	2.09E+1	5.04E-1	1.83E+0	2.33E+1	2.07E-1	2.17E+0	1.20E-2	-2.37E+1	2.00E+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	1.90E-2	5.72E-5	5.85E-3	2.49E-2	2.18E-5	1.30E-3	1.35E-5	-9.27E-3	1.69E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.00E-5	1.19E-6	5.14E-7	1.17E-5	4.93E-7	4.20E-6	1.33E-8	-4.27E-6	1.22E-5
NHWD	kg	8.50E-2	2.98E-2	2.09E-3	1.17E-1	1.19E-2	9.03E-2	4.84E-2	-2.33E-2	2.44E-1
RWD	kg	3.71E-5	3.08E-6	7.36E-7	4.09E-5	1.31E-6	8.56E-6	7.14E-8	-1.45E-5	3.64E-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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