

Environmental Profile

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

Ecochain v3.5.64



Product: 3080013 - AS+ Double Socket coupler DN 125
 Unit: 1 piece
 Manufacturer: Wavin Germany Twist
 Address: Industriestraße 20
 49767 Twist
 Germany
 Contact: <https://www.wavin.com/en-en>

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 | 1.03E+0 | 3.38E-2 | 4.45E-2 | 1.11E+0 | 1.45E-2 | 6.03E-1 | 3.45E-3 | -5.89E-1 | 1.14E+0 |
| GWP-f | kg CO2 eq | 1.04E+0 | 3.37E-2 | 3.63E-2 | 1.11E+0 | 1.45E-2 | 5.77E-1 | 3.45E-3 | -6.40E-1 | 1.06E+0 |
| GWP-b | kg CO2 eq | -3.97E-3 | 1.56E-5 | 5.44E-3 | 1.48E-3 | 8.82E-6 | 2.51E-2 | 6.16E-6 | 5.19E-2 | 7.85E-2 |
| GWP-luluc | kg CO2 eq | 9.48E-4 | 1.24E-5 | 2.79E-3 | 3.75E-3 | 5.14E-6 | 1.15E-4 | 1.26E-7 | -5.01E-4 | 3.37E-3 |
| ODP | kg CFC11 eq | 1.07E-7 | 7.45E-9 | 4.14E-9 | 1.19E-7 | 3.35E-9 | 2.76E-8 | 1.82E-10 | -2.61E-8 | 1.24E-7 |
| AP | mol H+ eq | 4.79E-3 | 1.96E-4 | 1.75E-4 | 5.16E-3 | 8.27E-5 | 6.72E-4 | 4.36E-6 | -2.04E-3 | 3.88E-3 |
| EP-fw | kg P eq | 2.96E-5 | 3.40E-7 | 5.53E-7 | 3.05E-5 | 1.20E-7 | 5.75E-6 | 5.73E-9 | -1.18E-5 | 2.46E-5 |
| EP-m | kg N eq | 8.88E-4 | 6.90E-5 | 4.58E-5 | 1.00E-3 | 2.96E-5 | 1.78E-4 | 3.17E-6 | -3.70E-4 | 8.43E-4 |
| EP-T | mol N eq | 1.00E-2 | 7.60E-4 | 4.84E-4 | 1.12E-2 | 3.26E-4 | 1.97E-3 | 1.77E-5 | -4.13E-3 | 9.43E-3 |
| POCP | kg NMVOC eq | 3.57E-3 | 2.17E-4 | 1.39E-4 | 3.92E-3 | 9.33E-5 | 6.01E-4 | 5.74E-6 | -1.77E-3 | 2.85E-3 |
| ADP-mm | kg Sb eq | 1.32E-4 | 8.55E-7 | 7.47E-7 | 1.33E-4 | 3.76E-7 | 2.31E-6 | 4.41E-9 | -6.92E-6 | 1.29E-4 |
| ADP-f | MJ | 2.30E+1 | 5.09E-1 | 4.58E-1 | 2.40E+1 | 2.23E-1 | 2.03E+0 | 1.33E-2 | -2.02E+1 | 6.05E+0 |
| WDP | m3 depriv. | 9.63E-1 | 1.82E-3 | 2.71E-1 | 1.24E+0 | 6.84E-4 | 4.71E-2 | 7.71E-5 | -4.25E-1 | 8.59E-1 |
| PM | disease inc. | 4.62E-8 | 3.03E-9 | 2.37E-9 | 5.16E-8 | 1.31E-9 | 1.06E-8 | 9.15E-11 | -2.02E-8 | 4.33E-8 |
| IR | kBq U-235 eq | 4.75E-2 | 2.13E-3 | 6.11E-4 | 5.03E-2 | 9.75E-4 | 7.14E-3 | 6.14E-5 | -1.31E-2 | 4.54E-2 |
| ETP-fw | CTUe | 2.16E+2 | 4.54E-1 | 6.97E-1 | 2.18E+2 | 1.81E-1 | 4.99E+0 | 1.25E-2 | -6.62E+0 | 2.16E+2 |
| HTP-c | CTUh | 4.33E-10 | 1.47E-11 | 2.99E-11 | 4.78E-10 | 6.44E-12 | 2.68E-10 | 3.31E-13 | -1.38E-10 | 6.15E-10 |
| HTP-nc | CTUh | 1.03E-7 | 4.96E-10 | 7.34E-10 | 1.04E-7 | 2.16E-10 | 3.56E-9 | 7.04E-12 | -4.09E-9 | 1.03E-7 |
| SQP | Pt | 5.57E+0 | 4.41E-1 | 4.44E-2 | 6.06E+0 | 1.91E-1 | 1.40E+0 | 3.41E-2 | -1.02E+1 | -2.55E+0 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 1.24E+0 | 6.37E-3 | 1.50E+0 | 2.75E+0 | 3.20E-3 | 1.79E-1 | 5.04E-4 | -2.01E+0 | 9.27E-1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 1.24E+0 | 6.37E-3 | 1.50E+0 | 2.75E+0 | 3.20E-3 | 1.79E-1 | 5.04E-4 | -2.01E+0 | 9.27E-1 |
| PENRE | MJ | 2.46E+1 | 5.40E-1 | 4.98E-1 | 2.56E+1 | 2.37E-1 | 2.16E+0 | 1.41E-2 | -2.17E+1 | 6.33E+0 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 2.46E+1 | 5.40E-1 | 4.98E-1 | 2.56E+1 | 2.37E-1 | 2.16E+0 | 1.41E-2 | -2.17E+1 | 6.33E+0 |
| PET | MJ | 2.58E+1 | 5.47E-1 | 2.00E+0 | 2.84E+1 | 2.40E-1 | 2.33E+0 | 1.46E-2 | -2.37E+1 | 7.26E+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 | 2.22E-2 | 6.20E-5 | 6.40E-3 | 2.87E-2 | 2.52E-5 | 1.59E-3 | 1.63E-5 | -7.27E-3 | 2.31E-2 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD | kg | 1.20E-5 | 1.29E-6 | 5.62E-7 | 1.39E-5 | 5.70E-7 | 4.54E-6 | 1.61E-8 | -4.85E-6 | 1.42E-5 |
| NHWD | kg | 9.40E-2 | 3.23E-2 | 2.29E-3 | 1.29E-1 | 1.38E-2 | 9.98E-2 | 5.86E-2 | -1.98E-2 | 2.81E-1 |
| RWD | kg | 5.47E-5 | 3.34E-6 | 8.05E-7 | 5.88E-5 | 1.52E-6 | 9.02E-6 | 8.67E-8 | -1.21E-5 | 5.73E-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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