# Environmental Profile

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

Ecochain v3.5.71

| | |
|---|---|
| Product: | 3038720 - Irish Acorn Pb Straight Connector W 1/2i |
| Unit: | 1 piece |
| Manufacturer: | Wavin - UK - Doncaster - Verified |

| | |
|---|---|
| LCA standard: | EN15804+A2 (2019) |
| Standard database: | Worldwide - Ecoinvent v 3.6 Cut-Off |
| Externally verified: | Yes |
| Issue date: | 09-02-2023 |
| End of validity: | 09-02-2028 |
| Verifier: | Martijn van Hövell - SGS Search |

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - UK - Doncaster - Verified (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 EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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

# Results

| Environmental impact | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| GWP-total | kg CO2 eq | 2.52E-1 | 3.21E-3 | 2.50E-2 | 2.81E-1 | 8.44E-4 | 3.26E-2 | 3.89E-4 | -1.27E-1 | 1.87E-1 |
| GWP-f | kg CO2 eq | 2.52E-1 | 3.20E-3 | 2.38E-2 | 2.79E-1 | 8.44E-4 | 3.26E-2 | 3.89E-4 | -1.27E-1 | 1.86E-1 |
| GWP-b | kg CO2 eq | 3.96E-4 | 1.85E-6 | 1.17E-3 | 1.57E-3 | 5.12E-7 | -3.06E-5 | 3.91E-7 | -2.54E-4 | 1.29E-3 |
| GWP-luluc | kg CO2 eq | 1.58E-5 | 1.16E-6 | 1.64E-5 | 3.34E-5 | 2.99E-7 | 4.73E-6 | 7.57E-9 | -8.03E-7 | 3.76E-5 |
| ODP | kg CFC11 eq | 3.80E-9 | 7.35E-10 | 2.15E-9 | 6.68E-9 | 1.94E-10 | 6.88E-10 | 1.06E-11 | -1.43E-9 | 6.15E-9 |
| AP | mol H+ eq | 1.14E-3 | 2.13E-5 | 9.05E-5 | 1.26E-3 | 4.81E-6 | 2.77E-5 | 2.63E-7 | -4.66E-4 | 8.23E-4 |
| EP-fw | kg P eq | 3.01E-6 | 2.59E-8 | 2.36E-7 | 3.27E-6 | 6.94E-9 | 1.39E-7 | 3.48E-10 | -1.11E-6 | 2.31E-6 |
| EP-m | kg N eq | 2.13E-4 | 7.22E-6 | 1.56E-5 | 2.36E-4 | 1.72E-6 | 8.31E-6 | 4.98E-7 | -9.77E-5 | 1.49E-4 |
| EP-T | mol N eq | 2.17E-3 | 7.96E-5 | 1.66E-4 | 2.42E-3 | 1.89E-5 | 9.08E-5 | 1.05E-6 | -9.81E-4 | 1.55E-3 |
| POCP | kg NMVOC eq | 8.17E-4 | 2.25E-5 | 5.22E-5 | 8.91E-4 | 5.42E-6 | 2.78E-5 | 3.81E-7 | -3.69E-4 | 5.56E-4 |
| ADP-mm | kg Sb eq | 6.57E-6 | 8.07E-8 | 4.67E-7 | 7.11E-6 | 2.18E-8 | 1.02E-7 | 2.57E-10 | -7.88E-7 | 6.45E-6 |
| ADP-f | MJ | 3.46E+0 | 4.89E-2 | 3.10E-1 | 3.82E+0 | 1.30E-2 | 8.11E-2 | 7.81E-4 | -1.71E+0 | 2.20E+0 |
| WDP | m3 depriv. | 7.86E-2 | 1.47E-4 | 4.24E-3 | 8.30E-2 | 3.97E-5 | 1.79E-3 | 3.61E-6 | -3.14E-2 | 5.34E-2 |
| PM | disease inc. | 1.00E-8 | 2.82E-10 | 6.63E-10 | 1.10E-8 | 7.62E-11 | 4.19E-10 | 5.33E-12 | -4.25E-9 | 7.23E-9 |
| IR | kBq U-235 eq | 1.41E-3 | 2.14E-4 | 3.26E-4 | 1.95E-3 | 5.66E-5 | 2.46E-4 | 3.77E-6 | -1.03E-4 | 2.15E-3 |
| ETP-fw | CTUe | 6.55E-1 | 3.94E-2 | 5.17E-1 | 1.21E+0 | 1.05E-2 | 1.40E-1 | 1.65E-3 | -9.35E-2 | 1.27E+0 |
| HTP-c | CTUh | 5.10E-11 | 1.43E-12 | 2.07E-11 | 7.32E-11 | 3.74E-13 | 1.12E-11 | 2.07E-14 | -1.02E-11 | 7.45E-11 |
| HTP-nc | CTUh | 8.46E-10 | 4.66E-11 | 4.59E-10 | 1.35E-9 | 1.25E-11 | 1.49E-10 | 6.64E-13 | -2.16E-10 | 1.30E-9 |
| SQP | Pt | 1.75E-1 | 4.08E-2 | 6.70E-2 | 2.83E-1 | 1.11E-2 | 6.32E-2 | 1.98E-3 | -9.52E-3 | 3.50E-1 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 3.94E-2 | 6.90E-4 | 1.16E+0 | 1.20E+0 | 1.86E-4 | 4.11E-3 | 3.61E-5 | -8.29E-3 | 1.19E+0 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 3.94E-2 | 6.90E-4 | 1.16E+0 | 1.20E+0 | 1.86E-4 | 4.11E-3 | 3.61E-5 | -8.29E-3 | 1.19E+0 |
| PENRE | MJ | 3.73E+0 | 5.19E-2 | 3.37E-1 | 4.12E+0 | 1.37E-2 | 8.64E-2 | 8.28E-4 | -1.85E+0 | 2.37E+0 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 3.73E+0 | 5.19E-2 | 3.37E-1 | 4.12E+0 | 1.37E-2 | 8.64E-2 | 8.28E-4 | -1.85E+0 | 2.37E+0 |
| PET | MJ | 3.77E+0 | 5.26E-2 | 1.50E+0 | 5.32E+0 | 1.39E-2 | 9.05E-2 | 8.64E-4 | -1.86E+0 | 3.56E+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 | 1.87E-3 | 5.44E-6 | 1.37E-4 | 2.01E-3 | 1.47E-6 | 6.23E-5 | 9.73E-7 | -7.35E-4 | 1.34E-3 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 4.84E-7 | 1.23E-7 | 2.31E-7 | 8.38E-7 | 3.31E-8 | 1.41E-7 | 9.31E-10 | -2.61E-7 | 7.51E-7 |
| NHWD | kg | 1.03E-2 | 2.94E-3 | 1.09E-3 | 1.44E-2 | 8.03E-4 | 4.10E-3 | 3.40E-3 | -1.11E-3 | 2.16E-2 |
| RWD | kg | 1.77E-6 | 3.33E-7 | 1.74E-7 | 2.28E-6 | 8.81E-8 | 3.08E-7 | 5.15E-9 | -1.37E-7 | 2.55E-6 |
| 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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