

# Environmental Profile

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

Ecochain v3.5.71



Product: 3029603 - Hep20 Pb Socket Reducer WT 22x15 PF/SP  
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



Suitable for various professional plumbing jobs. Hep20 is packed with unique features that make push-fit plumbing fitting easier quicker and more secure for installers. No additional equipment or tools required when installing or demounting fittings compared to others where a solder or glue is required. Just push the pipework into the fitting to create a watertight seal. A wide range of plastic fittings, plumbing pipes and tubes are available. It is the only system with joint recognition and se

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                                                                |    |    |     |     | Use stage                                                                                                             |     |     |     |     |     |     | End-of-Life stage                                                             |    |    |    |   |
| A1 Raw material supply A2 Transport A3 Manufacturing                         |    |    |     |     | B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment<br>B6 Operational energy use B7 Operational water use |     |     |     |     |     |     | C1 De-construction demolition C2 Transport C3 Waste processing<br>C4 Disposal |    |    |    |   |
| Construction process stage                                                   |    |    |     |     |                                                                                                                       |     |     |     |     |     |     | Benefits and loads beyond the system boundaries                               |    |    |    |   |
| A4 Transport gate to site<br>A5 Assembly / Construction installation process |    |    |     |     |                                                                                                                       |     |     |     |     |     |     | 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

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# Results

| Environmental impact | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
|----------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| GWP-total            | kg CO2 eq    | 1.61E-1  | 2.66E-3  | 1.26E-2  | 1.76E-1  | 6.07E-4  | 2.73E-2  | 2.74E-4  | -8.02E-2  | 1.24E-1  |
| GWP-f                | kg CO2 eq    | 1.63E-1  | 2.66E-3  | 1.18E-2  | 1.77E-1  | 6.06E-4  | 2.15E-2  | 2.74E-4  | -8.24E-2  | 1.17E-1  |
| GWP-b                | kg CO2 eq    | -1.82E-3 | 1.53E-6  | 7.91E-4  | -1.02E-3 | 3.68E-7  | 5.81E-3  | 2.76E-7  | 2.24E-3   | 7.02E-3  |
| GWP-luluc            | kg CO2 eq    | 3.42E-5  | 9.67E-7  | 5.81E-6  | 4.10E-5  | 2.15E-7  | 2.62E-6  | 5.35E-9  | -2.98E-5  | 1.40E-5  |
| ODP                  | kg CFC11 eq  | 2.72E-9  | 6.10E-10 | 1.25E-9  | 4.58E-9  | 1.40E-10 | 5.25E-10 | 7.49E-12 | -1.23E-9  | 4.02E-9  |
| AP                   | mol H+ eq    | 8.09E-4  | 1.78E-5  | 3.46E-5  | 8.62E-4  | 3.45E-6  | 2.02E-5  | 1.86E-7  | -3.34E-4  | 5.52E-4  |
| EP-fw                | kg P eq      | 1.98E-6  | 2.14E-8  | 9.56E-8  | 2.10E-6  | 4.99E-9  | 9.28E-8  | 2.46E-10 | -9.54E-7  | 1.24E-6  |
| EP-m                 | kg N eq      | 1.40E-4  | 6.02E-6  | 6.68E-6  | 1.53E-4  | 1.24E-6  | 6.24E-6  | 3.52E-7  | -6.50E-5  | 9.56E-5  |
| EP-T                 | mol N eq     | 1.44E-3  | 6.65E-5  | 6.75E-5  | 1.57E-3  | 1.36E-5  | 6.80E-5  | 7.39E-7  | -6.68E-4  | 9.84E-4  |
| POCP                 | kg NMVOC eq  | 5.64E-4  | 1.88E-5  | 2.16E-5  | 6.05E-4  | 3.89E-6  | 2.04E-5  | 2.69E-7  | -2.62E-4  | 3.68E-4  |
| ADP-mm               | kg Sb eq     | 3.51E-6  | 6.69E-8  | 1.62E-7  | 3.74E-6  | 1.57E-8  | 7.80E-8  | 1.82E-10 | -4.38E-7  | 3.40E-6  |
| ADP-f                | MJ           | 2.44E+0  | 4.05E-2  | 1.62E-1  | 2.65E+0  | 9.30E-3  | 5.80E-2  | 5.51E-4  | -1.23E+0  | 1.48E+0  |
| WDP                  | m3 depriv.   | 4.77E-2  | 1.22E-4  | 1.81E-3  | 4.96E-2  | 2.86E-5  | 1.23E-3  | 2.55E-6  | -2.37E-2  | 2.72E-2  |
| PM                   | disease inc. | 6.99E-9  | 2.34E-10 | 2.53E-10 | 7.48E-9  | 5.47E-11 | 2.99E-10 | 3.76E-12 | -3.22E-9  | 4.62E-9  |
| IR                   | kBq U-235 eq | 1.03E-3  | 1.77E-4  | 1.49E-4  | 1.35E-3  | 4.07E-5  | 1.83E-4  | 2.66E-6  | -3.20E-4  | 1.26E-3  |
| ETP-fw               | CTUe         | 9.49E-1  | 3.27E-2  | 1.87E-1  | 1.17E+0  | 7.55E-3  | 9.89E-2  | 1.16E-3  | -3.76E-1  | 9.00E-1  |
| HTP-c                | CTUh         | 3.92E-11 | 1.19E-12 | 7.64E-12 | 4.80E-11 | 2.69E-13 | 7.98E-12 | 1.46E-14 | -8.68E-12 | 4.76E-11 |
| HTP-nc               | CTUh         | 6.26E-10 | 3.86E-11 | 1.65E-10 | 8.30E-10 | 9.01E-12 | 1.08E-10 | 4.69E-13 | -2.18E-10 | 7.29E-10 |
| SQP                  | Pt           | 4.68E-1  | 3.38E-2  | 2.53E-2  | 5.27E-1  | 7.96E-3  | -1.00E-1 | 1.40E-3  | -7.66E-1  | -3.30E-1 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 8.82E-2  | 5.71E-4  | 3.92E-1  | 4.81E-1  | 1.33E-4  | -1.84E-2 | 2.55E-5  | -1.44E-1  | 3.19E-1  |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 8.82E-2  | 5.71E-4  | 3.92E-1  | 4.81E-1  | 1.33E-4  | -1.84E-2 | 2.55E-5  | -1.44E-1  | 3.19E-1  |
| PENRE                | MJ           | 2.63E+0  | 4.30E-2  | 1.77E-1  | 2.85E+0  | 9.88E-3  | 6.18E-2  | 5.85E-4  | -1.33E+0  | 1.59E+0  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 2.63E+0  | 4.30E-2  | 1.77E-1  | 2.85E+0  | 9.88E-3  | 6.18E-2  | 5.85E-4  | -1.33E+0  | 1.59E+0  |
| PET                  | MJ           | 2.72E+0  | 4.36E-2  | 5.69E-1  | 3.33E+0  | 1.00E-2  | 4.34E-2  | 6.10E-4  | -1.48E+0  | 1.91E+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           | 1.16E-3  | 4.51E-6  | 5.59E-5  | 1.22E-3  | 1.05E-6  | 4.15E-5  | 6.87E-7  | -5.70E-4  | 6.90E-4  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4       | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|----------|----------|---------|
| HWD                               | kg   | 3.92E-7 | 1.02E-7 | 1.54E-7 | 6.48E-7 | 2.38E-8 | 9.98E-8 | 6.57E-10 | -2.23E-7 | 5.49E-7 |
| NHWD                              | kg   | 8.50E-3 | 2.44E-3 | 7.20E-4 | 1.17E-2 | 5.77E-4 | 3.03E-3 | 2.40E-3  | -1.05E-3 | 1.66E-2 |
| RWD                               | kg   | 1.23E-6 | 2.76E-7 | 1.16E-7 | 1.62E-6 | 6.33E-8 | 2.33E-7 | 3.64E-9  | -3.29E-7 | 1.59E-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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