

# Environmental Profile

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

Ecochain v3.5.71



Product: 3031475 - Hep20 Brass Adapter 15x1/2 PF/TF NDZR  
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 B6 Operational energy use B7 Operational water use |     |     |     |     |     |     | C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal |    |    |    |   |
| Construction process stage                           |    |    |     |     |                                                                                                                    |     |     |     |     |     |     | Benefits and loads beyond the system boundaries                            |    |    |    |   |
| A4 Transport gate to site                            |    |    |     |     |                                                                                                                    |     |     |     |     |     |     |                                                                            |    |    |    |   |
| 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    | 4.13E-1 | 2.90E-3  | 3.65E-2  | 4.53E-1 | 2.08E-3  | 1.46E-2  | 1.84E-4  | -1.27E-1  | 3.43E-1 |
| GWP-f                | kg CO2 eq    | 4.13E-1 | 2.90E-3  | 3.35E-2  | 4.49E-1 | 2.08E-3  | 1.47E-2  | 1.84E-4  | -1.25E-1  | 3.41E-1 |
| GWP-b                | kg CO2 eq    | 2.41E-4 | 1.72E-6  | 2.90E-3  | 3.15E-3 | 1.26E-6  | -7.61E-5 | 2.19E-7  | -1.48E-3  | 1.60E-3 |
| GWP-luluc            | kg CO2 eq    | 4.76E-4 | 1.04E-6  | 9.06E-6  | 4.86E-4 | 7.36E-7  | 3.10E-6  | 1.27E-8  | -1.40E-4  | 3.50E-4 |
| ODP                  | kg CFC11 eq  | 2.14E-8 | 6.67E-10 | 4.10E-9  | 2.62E-8 | 4.79E-10 | 4.54E-10 | 1.86E-11 | -6.03E-9  | 2.11E-8 |
| AP                   | mol H+ eq    | 2.74E-2 | 1.79E-5  | 6.50E-5  | 2.75E-2 | 1.18E-5  | 2.53E-5  | 4.36E-7  | -2.21E-3  | 2.53E-2 |
| EP-fw                | kg P eq      | 2.17E-4 | 2.37E-8  | 2.03E-7  | 2.18E-4 | 1.71E-8  | 1.33E-7  | 5.29E-10 | -1.78E-5  | 2.00E-4 |
| EP-m                 | kg N eq      | 1.46E-3 | 6.22E-6  | 1.56E-5  | 1.48E-3 | 4.24E-6  | 6.50E-6  | 3.06E-7  | -2.69E-4  | 1.22E-3 |
| EP-T                 | mol N eq     | 2.11E-2 | 6.86E-5  | 1.44E-4  | 2.13E-2 | 4.67E-5  | 7.32E-5  | 1.67E-6  | -3.64E-3  | 1.78E-2 |
| POCP                 | kg NMVOC eq  | 5.67E-3 | 1.95E-5  | 4.73E-5  | 5.73E-3 | 1.34E-5  | 2.12E-5  | 5.15E-7  | -8.79E-4  | 4.89E-3 |
| ADP-mm               | kg Sb eq     | 1.73E-3 | 7.41E-8  | 2.36E-7  | 1.73E-3 | 5.38E-8  | 1.05E-7  | 4.21E-10 | -8.06E-4  | 9.23E-4 |
| ADP-f                | MJ           | 4.84E+0 | 4.44E-2  | 4.84E-1  | 5.36E+0 | 3.19E-2  | 4.86E-2  | 1.29E-3  | -1.62E+0  | 3.83E+0 |
| WDP                  | m3 depriv.   | 2.92E-1 | 1.35E-4  | 4.19E-3  | 2.97E-1 | 9.80E-5  | 6.66E-4  | 4.56E-5  | -8.18E-2  | 2.16E-1 |
| PM                   | disease inc. | 6.39E-8 | 2.59E-10 | 4.77E-10 | 6.47E-8 | 1.88E-10 | 3.66E-10 | 8.53E-12 | -9.07E-9  | 5.62E-8 |
| IR                   | kBq U-235 eq | 1.48E-2 | 1.94E-4  | 3.82E-4  | 1.54E-2 | 1.40E-4  | 1.80E-4  | 5.49E-6  | -5.77E-3  | 9.94E-3 |
| ETP-fw               | CTUe         | 2.67E+2 | 3.60E-2  | 3.12E-1  | 2.68E+2 | 2.59E-2  | 1.29E-1  | 1.27E-3  | -3.77E+1  | 2.30E+2 |
| HTP-c                | CTUh         | 3.90E-9 | 1.29E-12 | 1.33E-11 | 3.91E-9 | 9.23E-13 | 6.23E-12 | 2.27E-14 | -8.48E-10 | 3.07E-9 |
| HTP-nc               | CTUh         | 3.13E-7 | 4.27E-11 | 2.69E-10 | 3.13E-7 | 3.09E-11 | 1.40E-10 | 7.09E-13 | -5.40E-8  | 2.59E-7 |
| SQP                  | Pt           | 4.20E+0 | 3.76E-2  | 4.66E-2  | 4.28E+0 | 2.73E-2  | 5.90E-2  | 2.83E-3  | -7.56E-1  | 3.62E+0 |
| Resource use         | Unit         | A1      | A2       | A3       | A1-A3   | C2       | C3       | C4       | D         | Total   |
| PERE                 | MJ           | 8.80E-1 | 6.32E-4  | 5.33E-1  | 1.41E+0 | 4.58E-4  | 4.09E-3  | 2.18E-5  | -2.27E-1  | 1.19E+0 |
| PERM                 | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PERT                 | MJ           | 8.80E-1 | 6.32E-4  | 5.33E-1  | 1.41E+0 | 4.58E-4  | 4.09E-3  | 2.18E-5  | -2.27E-1  | 1.19E+0 |
| PENRE                | MJ           | 5.17E+0 | 4.72E-2  | 5.32E-1  | 5.75E+0 | 3.39E-2  | 5.17E-2  | 1.36E-3  | -1.74E+0  | 4.10E+0 |
| PENRM                | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PENRT                | MJ           | 5.17E+0 | 4.72E-2  | 5.32E-1  | 5.75E+0 | 3.39E-2  | 5.17E-2  | 1.36E-3  | -1.74E+0  | 4.10E+0 |
| PET                  | MJ           | 6.05E+0 | 4.78E-2  | 1.07E+0  | 7.16E+0 | 3.44E-2  | 5.58E-2  | 1.39E-3  | -1.96E+0  | 5.29E+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           | 7.66E-3 | 4.99E-6  | 1.20E-4  | 7.78E-3 | 3.61E-6  | 2.85E-5  | 1.43E-6  | -2.18E-3  | 5.64E-3 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 2.15E-4 | 1.13E-7 | 5.59E-7 | 2.16E-4 | 8.17E-8 | 1.07E-7 | 1.83E-9 | -1.01E-4 | 1.15E-4 |
| NHWD                              | kg   | 1.09E-1 | 2.72E-3 | 2.60E-3 | 1.14E-1 | 1.98E-3 | 2.14E-3 | 8.00E-3 | -3.54E-2 | 9.08E-2 |
| RWD                               | kg   | 1.27E-5 | 3.02E-7 | 4.23E-7 | 1.35E-5 | 2.17E-7 | 2.23E-7 | 8.45E-9 | -4.61E-6 | 9.31E-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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