# Environmental Profile

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

Ecochain v3.5.80

| | |
|---|---|
| Product: | 3044808 - EK PPR Pipe GY 90x8,2 PN10 L=4 |
| Unit: | 1 piece |
| Manufacturer: | Wavin - CZ - Horni Pocernice |
| Location: | Czechia |
| Address: | Do Čertous 2659<br>193 00 Horní Počernice<br>Czech Republic |

Use the Ekoplastik System when you prefer an all-plastic welded system or when you need pipes with larger diameters. The Ekoplastik system offers a maximum pipe diameter of 250 mm. Join pipes and fittings using a homogenous weld for secure and permanent connections.

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|---|---|
| LCA standard: | EN15804+A2 (2019) |
| Standard database: | Worldwide - Ecoinvent v 3.6 Cut-Off |
| Externally verified: | Yes |
| Issue date: | 04-10-2022 |
| End of validity: | 04-10-2027 |
| 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 - CZ - Horni Pocernice (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 | 1.73E+1 | 1.88E+0 | 2.62E-1 | 1.94E+1 | 2.18E-1 | 6.80E+0 | 1.03E-1 | -1.04E+1 | 1.61E+1 |
| GWP-f | kg CO2 eq | 1.72E+1 | 1.88E+0 | 2.13E-1 | 1.93E+1 | 2.18E-1 | 6.81E+0 | 1.03E-1 | -1.04E+1 | 1.60E+1 |
| GWP-b | kg CO2 eq | 6.19E-2 | 1.14E-3 | 4.47E-2 | 1.08E-1 | 1.32E-4 | -8.74E-3 | 8.93E-5 | -3.56E-2 | 6.37E-2 |
| GWP-luluc | kg CO2 eq | 4.86E-3 | 6.65E-4 | 4.28E-3 | 9.80E-3 | 7.72E-5 | 1.23E-3 | 1.77E-6 | -1.97E-3 | 9.14E-3 |
| ODP | kg CFC11 eq | 3.28E-7 | 4.33E-7 | 2.67E-7 | 1.03E-6 | 5.02E-8 | 1.60E-7 | 2.58E-9 | -4.02E-7 | 8.39E-7 |
| AP | mol H+ eq | 6.25E-2 | 1.07E-2 | 2.35E-3 | 7.56E-2 | 1.24E-3 | 6.76E-3 | 6.16E-5 | -2.87E-2 | 5.50E-2 |
| EP-fw | kg P eq | 2.64E-4 | 1.55E-5 | 1.07E-5 | 2.91E-4 | 1.79E-6 | 3.54E-5 | 8.08E-8 | -1.12E-4 | 2.16E-4 |
| EP-m | kg N eq | 1.03E-2 | 3.83E-3 | 4.54E-4 | 1.46E-2 | 4.44E-4 | 1.97E-3 | 3.99E-5 | -5.09E-3 | 1.20E-2 |
| EP-T | mol N eq | 1.18E-1 | 4.22E-2 | 5.32E-3 | 1.66E-1 | 4.90E-3 | 2.17E-2 | 2.50E-4 | -5.63E-2 | 1.36E-1 |
| POCP | kg NMVOC eq | 5.35E-2 | 1.21E-2 | 1.17E-3 | 6.68E-2 | 1.40E-3 | 6.86E-3 | 9.38E-5 | -2.59E-2 | 4.92E-2 |
| ADP-mm | kg Sb eq | 2.90E-4 | 4.86E-5 | 2.06E-5 | 3.60E-4 | 5.64E-6 | 2.66E-5 | 6.22E-8 | -6.72E-5 | 3.25E-4 |
| ADP-f | MJ | 6.04E+2 | 2.89E+1 | 6.85E+1 | 7.01E+2 | 3.35E+0 | 2.13E+1 | 1.88E-1 | -3.24E+2 | 4.02E+2 |
| WDP | m3 depriv. | 1.21E+1 | 8.86E-2 | 1.09E+0 | 1.33E+1 | 1.03E-2 | 4.18E-1 | 1.02E-3 | -5.55E+0 | 8.18E+0 |
| PM | disease inc. | 5.45E-7 | 1.70E-7 | 1.73E-8 | 7.32E-7 | 1.97E-8 | 1.11E-7 | 1.29E-9 | -2.39E-7 | 6.26E-7 |
| IR | kBq U-235 eq | 3.18E-1 | 1.26E-1 | 8.10E-1 | 1.25E+0 | 1.46E-2 | 6.43E-2 | 8.72E-4 | -1.50E-1 | 1.18E+0 |
| ETP-fw | CTUe | 9.92E+1 | 2.34E+1 | 2.34E+1 | 1.46E+2 | 2.72E+0 | 2.41E+1 | 1.58E-1 | -3.98E+1 | 1.33E+2 |
| HTP-c | CTUh | 4.23E-9 | 8.34E-10 | 4.45E-10 | 5.51E-9 | 9.67E-11 | 2.99E-9 | 4.65E-12 | -1.70E-9 | 6.90E-9 |
| HTP-nc | CTUh | 1.15E-7 | 2.79E-8 | 1.52E-8 | 1.58E-7 | 3.24E-9 | 3.63E-8 | 1.02E-10 | -4.80E-8 | 1.50E-7 |
| SQP | Pt | 2.52E+1 | 2.47E+1 | 1.87E+1 | 6.85E+1 | 2.86E+0 | 1.70E+1 | 4.83E-1 | -8.69E+0 | 8.02E+1 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 9.13E+0 | 4.14E-1 | 9.77E+0 | 1.93E+1 | 4.80E-2 | 1.05E+0 | 7.25E-3 | -3.98E+0 | 1.64E+1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 9.13E+0 | 4.14E-1 | 9.77E+0 | 1.93E+1 | 4.80E-2 | 1.05E+0 | 7.25E-3 | -3.98E+0 | 1.64E+1 |
| PENRE | MJ | 6.48E+2 | 3.06E+1 | 6.86E+1 | 7.47E+2 | 3.55E+0 | 2.27E+1 | 2.00E-1 | -3.49E+2 | 4.25E+2 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 6.48E+2 | 3.06E+1 | 6.86E+1 | 7.47E+2 | 3.55E+0 | 2.27E+1 | 2.00E-1 | -3.49E+2 | 4.25E+2 |
| PET | MJ | 6.57E+2 | 3.11E+1 | 7.84E+1 | 7.67E+2 | 3.60E+0 | 2.38E+1 | 2.07E-1 | -3.53E+2 | 4.41E+2 |
| 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 | 1.86E-1 | 3.27E-3 | 3.60E-2 | 2.26E-1 | 3.79E-4 | 1.24E-2 | 2.32E-4 | -8.31E-2 | 1.56E-1 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 8.22E-5 | 7.38E-5 | 5.62E-7 | 1.57E-4 | 8.56E-6 | 3.48E-5 | 2.28E-7 | -7.88E-5 | 1.21E-4 |
| NHWD | kg | 7.58E-1 | 1.79E+0 | 3.18E-3 | 2.55E+0 | 2.07E-1 | 1.07E+0 | 8.29E-1 | -2.48E-1 | 4.40E+0 |
| RWD | kg | 2.75E-4 | 1.96E-4 | 7.61E-7 | 4.72E-4 | 2.28E-5 | 8.15E-5 | 1.23E-6 | -1.35E-4 | 4.42E-4 |
| 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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