# Environmental Profile

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

Ecochain v3.5.80

| | |
|---|---|
| Product: | 3044807 - EK PPR Pipe GY 75x6,8 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 | 1.15E+1 | 1.26E+0 | 1.82E-1 | 1.29E+1 | 1.46E-1 | 4.46E+0 | 6.87E-2 | -6.91E+0 | 1.07E+1 |
| GWP-f | kg CO2 eq | 1.14E+1 | 1.26E+0 | 1.48E-1 | 1.28E+1 | 1.46E-1 | 4.47E+0 | 6.87E-2 | -6.89E+0 | 1.06E+1 |
| GWP-b | kg CO2 eq | 4.39E-2 | 7.63E-4 | 3.11E-2 | 7.57E-2 | 8.85E-5 | -5.84E-3 | 5.97E-5 | -2.37E-2 | 4.63E-2 |
| GWP-luluc | kg CO2 eq | 3.18E-3 | 4.45E-4 | 2.97E-3 | 6.59E-3 | 5.16E-5 | 8.20E-4 | 1.18E-6 | -1.31E-3 | 6.15E-3 |
| ODP | kg CFC11 eq | 2.17E-7 | 2.90E-7 | 1.85E-7 | 6.92E-7 | 3.36E-8 | 1.07E-7 | 1.72E-9 | -2.63E-7 | 5.71E-7 |
| AP | mol H+ eq | 4.14E-2 | 7.16E-3 | 1.63E-3 | 5.02E-2 | 8.30E-4 | 4.50E-3 | 4.12E-5 | -1.91E-2 | 3.65E-2 |
| EP-fw | kg P eq | 1.74E-4 | 1.03E-5 | 7.40E-6 | 1.92E-4 | 1.20E-6 | 2.36E-5 | 5.40E-8 | -7.47E-5 | 1.42E-4 |
| EP-m | kg N eq | 6.84E-3 | 2.56E-3 | 3.15E-4 | 9.71E-3 | 2.97E-4 | 1.31E-3 | 2.67E-5 | -3.39E-3 | 7.96E-3 |
| EP-T | mol N eq | 7.81E-2 | 2.82E-2 | 3.69E-3 | 1.10E-1 | 3.27E-3 | 1.45E-2 | 1.67E-4 | -3.75E-2 | 9.05E-2 |
| POCP | kg NMVOC eq | 3.54E-2 | 8.07E-3 | 8.15E-4 | 4.43E-2 | 9.36E-4 | 4.57E-3 | 6.27E-5 | -1.73E-2 | 3.26E-2 |
| ADP-mm | kg Sb eq | 1.96E-4 | 3.25E-5 | 1.43E-5 | 2.43E-4 | 3.77E-6 | 1.78E-5 | 4.16E-8 | -4.49E-5 | 2.19E-4 |
| ADP-f | MJ | 4.01E+2 | 1.93E+1 | 4.76E+1 | 4.68E+2 | 2.24E+0 | 1.42E+1 | 1.26E-1 | -2.16E+2 | 2.69E+2 |
| WDP | m3 depriv. | 8.03E+0 | 5.92E-2 | 7.57E-1 | 8.85E+0 | 6.86E-3 | 2.79E-1 | 6.82E-4 | -3.70E+0 | 5.43E+0 |
| PM | disease inc. | 3.61E-7 | 1.13E-7 | 1.20E-8 | 4.87E-7 | 1.32E-8 | 7.40E-8 | 8.65E-10 | -1.59E-7 | 4.16E-7 |
| IR | kBq U-235 eq | 2.10E-1 | 8.43E-2 | 5.63E-1 | 8.57E-1 | 9.78E-3 | 4.29E-2 | 5.83E-4 | -9.97E-2 | 8.11E-1 |
| ETP-fw | CTUe | 6.52E+1 | 1.57E+1 | 1.63E+1 | 9.71E+1 | 1.82E+0 | 1.61E+1 | 1.05E-1 | -2.65E+1 | 8.86E+1 |
| HTP-c | CTUh | 2.82E-9 | 5.57E-10 | 3.09E-10 | 3.68E-9 | 6.46E-11 | 1.99E-9 | 3.11E-12 | -1.14E-9 | 4.60E-9 |
| HTP-nc | CTUh | 7.63E-8 | 1.87E-8 | 1.06E-8 | 1.06E-7 | 2.16E-9 | 2.42E-8 | 6.80E-11 | -3.21E-8 | 9.99E-8 |
| SQP | Pt | 1.66E+1 | 1.65E+1 | 1.30E+1 | 4.60E+1 | 1.91E+0 | 1.14E+1 | 3.23E-1 | -5.78E+0 | 5.39E+1 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 6.00E+0 | 2.77E-1 | 6.79E+0 | 1.31E+1 | 3.21E-2 | 7.02E-1 | 4.85E-3 | -2.66E+0 | 1.11E+1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 6.00E+0 | 2.77E-1 | 6.79E+0 | 1.31E+1 | 3.21E-2 | 7.02E-1 | 4.85E-3 | -2.66E+0 | 1.11E+1 |
| PENRE | MJ | 4.31E+2 | 2.05E+1 | 4.77E+1 | 4.99E+2 | 2.37E+0 | 1.52E+1 | 1.34E-1 | -2.32E+2 | 2.84E+2 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 4.31E+2 | 2.05E+1 | 4.77E+1 | 4.99E+2 | 2.37E+0 | 1.52E+1 | 1.34E-1 | -2.32E+2 | 2.84E+2 |
| PET | MJ | 4.37E+2 | 2.07E+1 | 5.44E+1 | 5.12E+2 | 2.41E+0 | 1.59E+1 | 1.38E-1 | -2.35E+2 | 2.95E+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 | 1.23E-1 | 2.18E-3 | 2.50E-2 | 1.50E-1 | 2.53E-4 | 8.24E-3 | 1.55E-4 | -5.55E-2 | 1.03E-1 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 5.49E-5 | 4.93E-5 | 3.91E-7 | 1.05E-4 | 5.72E-6 | 2.32E-5 | 1.52E-7 | -5.17E-5 | 8.20E-5 |
| NHWD | kg | 5.03E-1 | 1.20E+0 | 2.21E-3 | 1.70E+0 | 1.39E-1 | 7.08E-1 | 5.54E-1 | -1.65E-1 | 2.94E+0 |
| RWD | kg | 1.82E-4 | 1.31E-4 | 5.29E-7 | 3.14E-4 | 1.52E-5 | 5.44E-5 | 8.21E-7 | -9.00E-5 | 2.94E-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 |

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777