

# Environmental Profile

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

Ecochain v3.5.80



Product: 3079608 - EK PP-RCT ELBOW 90° GY 90  
Unit: 1 piece  
Manufacturer: Wavin - CZ - Kostelec - Verified

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.

LCA standard: NMD Bepalingsmethode 1.1 (2022)  
Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
Externally verified: Yes  
Issue date: 27-01-2023  
End of validity: 27-01-2028  
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 - CZ - Kostelec - 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

**ECI** = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3--eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **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 SBK set 1 | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
|--------------------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| ECI                            | euro         | 0.11     | 0.01     | 0.02     | 0.14     | 0        | 0.04     | 0        | -0.06     | 0.13     |
| ADPE                           | kg Sb-eq     | 1.94E-5  | 1.85E-6  | 7.97E-6  | 2.93E-5  | 4.09E-7  | 2.01E-6  | 4.51E-9  | -5.11E-6  | 2.66E-5  |
| ADPF                           | kg Sb-eq     | 2.15E-2  | 5.22E-4  | 6.02E-4  | 2.26E-2  | 1.15E-4  | 7.69E-4  | 6.30E-6  | -1.17E-2  | 1.18E-2  |
| GWP                            | kg CO2-eq    | 1.25E+0  | 7.11E-2  | 1.09E-1  | 1.43E+0  | 1.57E-2  | 5.19E-1  | 6.35E-3  | -7.61E-1  | 1.21E+0  |
| ODP                            | kg CFC-11-eq | 2.95E-8  | 1.32E-8  | 1.86E-7  | 2.28E-7  | 2.91E-9  | 1.03E-8  | 1.51E-10 | -3.15E-8  | 2.10E-7  |
| POCP                           | kg ethene-eq | 1.05E-3  | 4.27E-5  | 7.83E-5  | 1.17E-3  | 9.40E-6  | 7.74E-5  | 1.45E-6  | -4.93E-4  | 7.63E-4  |
| AP                             | kg SO2-eq    | 3.98E-3  | 3.06E-4  | 7.46E-4  | 5.03E-3  | 6.74E-5  | 3.95E-4  | 3.32E-6  | -1.86E-3  | 3.63E-3  |
| EP                             | kg PO4 3--eq | 3.86E-4  | 6.11E-5  | 9.59E-5  | 5.43E-4  | 1.35E-5  | 7.03E-5  | 1.45E-6  | -1.96E-4  | 4.33E-4  |
| HTP                            | kg 1,4-DB-eq | 2.04E-1  | 3.04E-2  | 1.32E-1  | 3.66E-1  | 6.70E-3  | 1.57E-1  | 4.98E-4  | -9.55E-2  | 4.35E-1  |
| FAETP                          | kg 1,4-DB-eq | 5.81E-3  | 8.91E-4  | 4.76E-3  | 1.15E-2  | 1.96E-4  | 3.67E-3  | 5.39E-4  | -2.66E-3  | 1.32E-2  |
| MAETP                          | kg 1,4-DB-eq | 1.37E+1  | 3.18E+0  | 1.32E+1  | 3.01E+1  | 7.01E-1  | 8.31E+0  | 5.38E-1  | -5.83E+0  | 3.39E+1  |
| TETP                           | kg 1,4-DB-eq | 9.35E-4  | 1.08E-4  | 6.87E-3  | 7.92E-3  | 2.37E-5  | 4.77E-4  | 8.11E-7  | -6.68E-4  | 7.75E-3  |
| Environmental impact           | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| GWP-total                      | kg CO2 eq    | 1.31E+0  | 7.18E-2  | 1.29E-1  | 1.51E+0  | 1.58E-2  | 5.36E-1  | 7.44E-3  | -7.55E-1  | 1.31E+0  |
| GWP-f                          | kg CO2 eq    | 1.30E+0  | 7.17E-2  | 1.04E-1  | 1.48E+0  | 1.58E-2  | 5.22E-1  | 7.44E-3  | -7.88E-1  | 1.24E+0  |
| GWP-b                          | kg CO2 eq    | 4.18E-3  | 4.35E-5  | 2.32E-2  | 2.74E-2  | 9.59E-6  | 1.47E-2  | 6.47E-6  | 3.25E-2   | 7.46E-2  |
| GWP-luluc                      | kg CO2 eq    | 5.68E-4  | 2.54E-5  | 1.63E-3  | 2.22E-3  | 5.59E-6  | 9.00E-5  | 1.28E-7  | -3.88E-4  | 1.93E-3  |
| ODP                            | kg CFC11 eq  | 2.85E-8  | 1.65E-8  | 1.04E-7  | 1.49E-7  | 3.64E-9  | 1.22E-8  | 1.87E-10 | -3.33E-8  | 1.31E-7  |
| AP                             | mol H+ eq    | 4.80E-3  | 4.08E-4  | 9.43E-4  | 6.16E-3  | 9.00E-5  | 5.11E-4  | 4.46E-6  | -2.25E-3  | 4.51E-3  |
| EP-fw                          | kg P eq      | 2.21E-5  | 5.90E-7  | 3.43E-6  | 2.61E-5  | 1.30E-7  | 2.61E-6  | 5.85E-9  | -1.12E-5  | 1.77E-5  |
| EP-m                           | kg N eq      | 8.28E-4  | 1.46E-4  | 1.75E-4  | 1.15E-3  | 3.22E-5  | 1.51E-4  | 2.89E-6  | -4.11E-4  | 9.24E-4  |
| EP-T                           | mol N eq     | 9.27E-3  | 1.61E-3  | 2.16E-3  | 1.30E-2  | 3.55E-4  | 1.66E-3  | 1.81E-5  | -4.56E-3  | 1.05E-2  |
| POCP                           | kg NMVOC eq  | 4.10E-3  | 4.60E-4  | 5.02E-4  | 5.06E-3  | 1.01E-4  | 5.23E-4  | 6.79E-6  | -2.00E-3  | 3.69E-3  |
| ADP-mm                         | kg Sb eq     | 1.94E-5  | 1.85E-6  | 7.97E-6  | 2.92E-5  | 4.09E-7  | 2.01E-6  | 4.51E-9  | -5.11E-6  | 2.66E-5  |
| ADP-f                          | MJ           | 4.50E+1  | 1.10E+0  | 2.62E+1  | 7.23E+1  | 2.42E-1  | 1.58E+0  | 1.36E-2  | -2.41E+1  | 5.01E+1  |
| WDP                            | m3 depriv.   | 9.12E-1  | 3.38E-3  | 4.58E-1  | 1.37E+0  | 7.44E-4  | 3.06E-2  | 7.39E-5  | -4.54E-1  | 9.51E-1  |
| PM                             | disease inc. | 4.29E-8  | 6.47E-9  | 7.79E-9  | 5.71E-8  | 1.43E-9  | 8.34E-9  | 9.38E-11 | -2.06E-8  | 4.63E-8  |
| IR                             | kBq U-235 eq | 2.53E-2  | 4.81E-3  | 3.07E-1  | 3.37E-1  | 1.06E-3  | 4.82E-3  | 6.32E-5  | -1.31E-2  | 3.30E-1  |
| ETP-fw                         | CTUe         | 1.18E+1  | 8.94E-1  | 8.79E+0  | 2.15E+1  | 1.97E-1  | 1.82E+0  | 1.14E-2  | -5.56E+0  | 1.80E+1  |
| HTP-c                          | CTUh         | 3.20E-10 | 3.18E-11 | 1.90E-10 | 5.42E-10 | 7.01E-12 | 2.25E-10 | 3.37E-13 | -1.45E-10 | 6.29E-10 |
| HTP-nc                         | CTUh         | 8.90E-9  | 1.07E-9  | 6.00E-9  | 1.60E-8  | 2.35E-10 | 2.71E-9  | 7.37E-12 | -4.19E-9  | 1.47E-8  |
| SQP                            | Pt           | 3.23E+0  | 9.42E-1  | 7.18E+0  | 1.14E+1  | 2.07E-1  | 1.26E+0  | 3.50E-2  | -6.92E+0  | 5.93E+0  |

| Resource use                      | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| PERE                              | MJ   | 9.84E-1 | 1.58E-2 | 3.71E+0 | 4.71E+0 | 3.48E-3 | 7.73E-2 | 5.25E-4 | -1.43E+0 | 3.36E+0 |
| PERM                              | MJ   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| PERT                              | MJ   | 9.84E-1 | 1.58E-2 | 3.71E+0 | 4.71E+0 | 3.48E-3 | 7.73E-2 | 5.25E-4 | -1.43E+0 | 3.36E+0 |
| PENRE                             | MJ   | 4.83E+1 | 1.17E+0 | 2.63E+1 | 7.58E+1 | 2.57E-1 | 1.69E+0 | 1.45E-2 | -2.60E+1 | 5.18E+1 |
| PENRM                             | MJ   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| PENRT                             | MJ   | 4.83E+1 | 1.17E+0 | 2.63E+1 | 7.58E+1 | 2.57E-1 | 1.69E+0 | 1.45E-2 | -2.60E+1 | 5.18E+1 |
| PET                               | MJ   | 4.93E+1 | 1.18E+0 | 3.00E+1 | 8.05E+1 | 2.61E-1 | 1.76E+0 | 1.50E-2 | -2.74E+1 | 5.51E+1 |
| 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   | 1.44E-2 | 1.25E-4 | 1.47E-2 | 2.93E-2 | 2.74E-5 | 9.14E-4 | 1.68E-5 | -7.36E-3 | 2.29E-2 |
| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
| HWD                               | kg   | 6.32E-6 | 2.81E-6 | 5.15E-7 | 9.65E-6 | 6.20E-7 | 2.62E-6 | 1.65E-8 | -6.47E-6 | 6.44E-6 |
| NHWD                              | kg   | 5.93E-2 | 6.82E-2 | 1.47E-2 | 1.42E-1 | 1.50E-2 | 7.99E-2 | 6.01E-2 | -2.08E-2 | 2.76E-1 |
| RWD                               | kg   | 2.21E-5 | 7.48E-6 | 7.70E-7 | 3.03E-5 | 1.65E-6 | 6.13E-6 | 8.90E-8 | -1.20E-5 | 2.62E-5 |
| 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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