# Environmental Profile

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

Ecochain v3.5.80

| | |
|---|---|
| Product: | 3066079 - EVAC Pipe GY 50x3 NFE+NFME L=2 PL |
| Unit: | 1 Piece |
| Manufacturer: | Wavin - FR - Varennes |

The Wavin range of PVC pipes and fittings to be glued covers all the usual diameters and allows you to create networks that are 100% compatible, homogeneous and meet the requirements of the French market.

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|---|---|
| LCA standard: | EN15804+A2 (2019) |
| Standard database: | Worldwide - Ecoinvent v 3.6 Cut-Off |
| Externally verified: | Yes |
| Issue date: | 24-11-2022 |
| End of validity: | 24-11-2027 |
| 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 - FR - Varennes (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 | 1.30E+0 | 5.81E-2 | 8.02E-2 | 1.44E+0 | 2.43E-2 | 1.06E+0 | 6.91E-3 | -9.23E-1 | 1.61E+0 |
| GWP-f | kg CO2 eq | 1.72E+0 | 5.81E-2 | 6.32E-2 | 1.84E+0 | 2.43E-2 | 6.21E-1 | 6.91E-3 | -9.16E-1 | 1.58E+0 |
| GWP-b | kg CO2 eq | -4.38E-1 | 3.53E-5 | 1.70E-2 | -4.21E-1 | 1.48E-5 | 4.40E-1 | 8.74E-6 | -6.40E-3 | 1.24E-2 |
| GWP-luluc | kg CO2 eq | 1.97E-2 | 2.06E-5 | 6.07E-5 | 1.98E-2 | 8.60E-6 | 2.83E-4 | 1.88E-7 | -6.53E-4 | 1.94E-2 |
| ODP | kg CFC11 eq | 9.05E-7 | 1.34E-8 | 8.24E-9 | 9.26E-7 | 5.60E-9 | 7.54E-8 | 2.76E-10 | -4.57E-7 | 5.51E-7 |
| AP | mol H+ eq | 8.45E-3 | 3.31E-4 | 3.60E-4 | 9.14E-3 | 1.38E-4 | 1.35E-3 | 6.62E-6 | -3.66E-3 | 6.98E-3 |
| EP-fw | kg P eq | 8.06E-5 | 4.78E-7 | 1.51E-6 | 8.26E-5 | 2.00E-7 | 9.38E-6 | 8.42E-9 | -3.43E-5 | 5.78E-5 |
| EP-m | kg N eq | 1.55E-3 | 1.18E-4 | 1.05E-4 | 1.78E-3 | 4.95E-5 | 3.35E-4 | 4.06E-6 | -6.56E-4 | 1.51E-3 |
| EP-T | mol N eq | 1.62E-2 | 1.30E-3 | 1.27E-3 | 1.88E-2 | 5.46E-4 | 3.70E-3 | 2.65E-5 | -7.28E-3 | 1.58E-2 |
| POCP | kg NMVOC eq | 5.32E-3 | 3.73E-4 | 3.11E-4 | 6.01E-3 | 1.56E-4 | 1.11E-3 | 9.02E-6 | -2.39E-3 | 4.89E-3 |
| ADP-mm | kg Sb eq | 1.09E-3 | 1.50E-6 | 1.25E-6 | 1.09E-3 | 6.29E-7 | 5.22E-6 | 6.60E-9 | -1.87E-5 | 1.08E-3 |
| ADP-f | MJ | 4.26E+1 | 8.91E-1 | 8.81E-1 | 4.44E+1 | 3.73E-1 | 3.66E+0 | 2.00E-2 | -2.23E+1 | 2.61E+1 |
| WDP | m3 depriv. | 2.76E+0 | 2.74E-3 | 1.77E+0 | 4.54E+0 | 1.14E-3 | 1.39E-1 | 1.25E-4 | -1.32E+0 | 3.36E+0 |
| PM | disease inc. | 7.47E-8 | 5.24E-9 | 5.23E-9 | 8.51E-8 | 2.19E-9 | 1.69E-8 | 1.37E-10 | -2.54E-8 | 7.90E-8 |
| IR | kBq U-235 eq | 9.53E-2 | 3.90E-3 | 2.52E-3 | 1.02E-1 | 1.63E-3 | 1.27E-2 | 9.17E-5 | -4.30E-2 | 7.32E-2 |
| ETP-fw | CTUe | 3.90E+1 | 7.24E-1 | 8.43E-1 | 4.06E+1 | 3.03E-1 | 2.65E+1 | 2.91E-1 | -1.45E+1 | 5.32E+1 |
| HTP-c | CTUh | 1.47E-9 | 2.58E-11 | 6.46E-11 | 1.56E-9 | 1.08E-11 | 4.29E-10 | 5.28E-13 | -5.07E-10 | 1.50E-9 |
| HTP-nc | CTUh | 4.61E-8 | 8.63E-10 | 1.68E-9 | 4.86E-8 | 3.61E-10 | 9.55E-9 | 5.62E-11 | -1.74E-8 | 4.12E-8 |
| SQP | Pt | 4.61E+1 | 7.63E-1 | 4.28E+0 | 5.11E+1 | 3.19E-1 | 2.31E+0 | 5.07E-2 | -1.08E+1 | 4.30E+1 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 8.15E+0 | 1.28E-2 | 1.09E+0 | 9.25E+0 | 5.35E-3 | 2.58E-1 | 7.15E-4 | -2.65E+0 | 6.86E+0 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 8.15E+0 | 1.28E-2 | 1.09E+0 | 9.25E+0 | 5.35E-3 | 2.58E-1 | 7.15E-4 | -2.65E+0 | 6.86E+0 |
| PENRE | MJ | 4.57E+1 | 9.46E-1 | 9.52E-1 | 4.76E+1 | 3.96E-1 | 3.89E+0 | 2.13E-2 | -2.40E+1 | 2.79E+1 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 4.57E+1 | 9.46E-1 | 9.52E-1 | 4.76E+1 | 3.96E-1 | 3.89E+0 | 2.13E-2 | -2.40E+1 | 2.79E+1 |
| PET | MJ | 5.39E+1 | 9.59E-1 | 2.04E+0 | 5.69E+1 | 4.01E-1 | 4.15E+0 | 2.20E-2 | -2.67E+1 | 3.48E+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 | 3.11E-2 | 1.01E-4 | 4.15E-2 | 7.27E-2 | 4.22E-5 | 3.85E-3 | 2.45E-5 | -1.39E-2 | 6.27E-2 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 1.57E-4 | 2.28E-6 | 1.29E-6 | 1.61E-4 | 9.54E-7 | 5.92E-6 | 2.42E-8 | -1.85E-5 | 1.49E-4 |
| NHWD | kg | 1.90E-1 | 5.52E-2 | 9.49E-3 | 2.55E-1 | 2.31E-2 | 1.42E-1 | 9.24E-2 | -7.34E-2 | 4.39E-1 |
| RWD | kg | 8.43E-5 | 6.06E-6 | 2.62E-6 | 9.30E-5 | 2.54E-6 | 1.38E-5 | 1.31E-7 | -3.80E-5 | 7.14E-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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