# Environmental Profile

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

Ecochain v3.5.80

| | |
|---|---|
| Product: | 3026007 - PVC Branch 87°3 GY 125 S/S/SP BC |
| 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 | 1.07E+0 | 4.37E-2 | 5.14E-2 | 1.16E+0 | 1.64E-2 | 7.98E-1 | 5.08E-3 | -6.63E-1 | 1.32E+0 |
| GWP-f | kg CO2 eq | 1.35E+0 | 4.36E-2 | 4.10E-2 | 1.44E+0 | 1.64E-2 | 4.52E-1 | 5.07E-3 | -7.68E-1 | 1.14E+0 |
| GWP-b | kg CO2 eq | -2.84E-1 | 2.65E-5 | 1.03E-2 | -2.73E-1 | 9.94E-6 | 3.46E-1 | 6.38E-6 | 1.07E-1 | 1.79E-1 |
| GWP-luluc | kg CO2 eq | 1.90E-3 | 1.54E-5 | 3.27E-5 | 1.94E-3 | 5.79E-6 | 2.04E-4 | 1.36E-7 | -1.36E-3 | 7.98E-4 |
| ODP | kg CFC11 eq | 6.88E-7 | 1.01E-8 | 5.29E-9 | 7.03E-7 | 3.77E-9 | 5.65E-8 | 1.92E-10 | -3.54E-7 | 4.10E-7 |
| AP | mol H+ eq | 6.66E-3 | 2.49E-4 | 2.06E-4 | 7.12E-3 | 9.33E-5 | 9.87E-4 | 4.67E-6 | -3.35E-3 | 4.86E-3 |
| EP-fw | kg P eq | 6.73E-5 | 3.59E-7 | 9.67E-7 | 6.86E-5 | 1.35E-7 | 6.82E-6 | 6.11E-9 | -3.65E-5 | 3.91E-5 |
| EP-m | kg N eq | 1.27E-3 | 8.90E-5 | 6.21E-5 | 1.42E-3 | 3.34E-5 | 2.47E-4 | 2.85E-6 | -6.34E-4 | 1.06E-3 |
| EP-T | mol N eq | 1.37E-2 | 9.80E-4 | 7.17E-4 | 1.54E-2 | 3.68E-4 | 2.72E-3 | 1.86E-5 | -6.94E-3 | 1.15E-2 |
| POCP | kg NMVOC eq | 4.29E-3 | 2.80E-4 | 1.84E-4 | 4.76E-3 | 1.05E-4 | 8.13E-4 | 6.39E-6 | -2.28E-3 | 3.40E-3 |
| ADP-mm | kg Sb eq | 1.62E-3 | 1.13E-6 | 6.51E-7 | 1.62E-3 | 4.24E-7 | 3.91E-6 | 4.69E-9 | -1.53E-5 | 1.61E-3 |
| ADP-f | MJ | 3.26E+1 | 6.70E-1 | 5.76E-1 | 3.38E+1 | 2.51E-1 | 2.65E+0 | 1.40E-2 | -1.80E+1 | 1.87E+1 |
| WDP | m3 depriv. | 2.09E+0 | 2.06E-3 | 1.20E+0 | 3.30E+0 | 7.71E-4 | 1.01E-1 | 9.72E-5 | -1.15E+0 | 2.25E+0 |
| PM | disease inc. | 5.13E-8 | 3.94E-9 | 3.08E-9 | 5.84E-8 | 1.48E-9 | 1.24E-8 | 9.64E-11 | -3.20E-8 | 4.03E-8 |
| IR | kBq U-235 eq | 7.71E-2 | 2.93E-3 | 1.70E-3 | 8.17E-2 | 1.10E-3 | 9.42E-3 | 6.42E-5 | -4.03E-2 | 5.20E-2 |
| ETP-fw | CTUe | 4.92E+1 | 5.44E-1 | 4.79E-1 | 5.02E+1 | 2.04E-1 | 1.98E+1 | 2.17E-1 | -1.90E+1 | 5.14E+1 |
| HTP-c | CTUh | 1.28E-9 | 1.94E-11 | 3.98E-11 | 1.34E-9 | 7.26E-12 | 3.03E-10 | 3.88E-13 | -5.30E-10 | 1.12E-9 |
| HTP-nc | CTUh | 3.84E-8 | 6.49E-10 | 9.87E-10 | 4.00E-8 | 2.43E-10 | 7.00E-9 | 4.17E-11 | -1.55E-8 | 3.18E-8 |
| SQP | Pt | 3.36E+1 | 5.73E-1 | 1.88E+0 | 3.61E+1 | 2.15E-1 | 1.63E+0 | 3.58E-2 | -4.26E+1 | -4.62E+0 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 6.10E+0 | 9.61E-3 | 4.82E-1 | 6.59E+0 | 3.61E-3 | 1.87E-1 | 5.13E-4 | -7.46E+0 | -6.73E-1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 6.10E+0 | 9.61E-3 | 4.82E-1 | 6.59E+0 | 3.61E-3 | 1.87E-1 | 5.13E-4 | -7.46E+0 | -6.73E-1 |
| PENRE | MJ | 3.49E+1 | 7.11E-1 | 6.23E-1 | 3.63E+1 | 2.67E-1 | 2.82E+0 | 1.49E-2 | -1.94E+1 | 2.00E+1 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 3.49E+1 | 7.11E-1 | 6.23E-1 | 3.63E+1 | 2.67E-1 | 2.82E+0 | 1.49E-2 | -1.94E+1 | 2.00E+1 |
| PET | MJ | 4.10E+1 | 7.21E-1 | 1.11E+0 | 4.29E+1 | 2.70E-1 | 3.01E+0 | 1.54E-2 | -2.68E+1 | 1.93E+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 | 2.45E-2 | 7.58E-5 | 2.82E-2 | 5.27E-2 | 2.84E-5 | 2.79E-3 | 1.71E-5 | -1.47E-2 | 4.09E-2 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 2.30E-4 | 1.71E-6 | 8.82E-7 | 2.32E-4 | 6.43E-7 | 4.40E-6 | 1.71E-8 | -1.65E-5 | 2.21E-4 |
| NHWD | kg | 1.59E-1 | 4.15E-2 | 6.46E-3 | 2.07E-1 | 1.56E-2 | 9.72E-2 | 6.23E-2 | -7.24E-2 | 3.09E-1 |
| RWD | kg | 6.81E-5 | 4.56E-6 | 1.79E-6 | 7.44E-5 | 1.71E-6 | 1.02E-5 | 9.11E-8 | -3.66E-5 | 4.99E-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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