# Environmental Profile

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

Ecochain v3.5.80

| | |
|---|---|
| Product: | 3025807 - PVC Branch 45° GY 75 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 | 5.13E-1 | 1.74E-2 | 2.45E-2 | 5.55E-1 | 7.30E-3 | 3.16E-1 | 2.25E-3 | -2.88E-1 | 5.92E-1 |
| GWP-f | kg CO2 eq | 5.97E-1 | 1.74E-2 | 1.93E-2 | 6.34E-1 | 7.29E-3 | 2.01E-1 | 2.25E-3 | -3.39E-1 | 5.06E-1 |
| GWP-b | kg CO2 eq | -8.55E-2 | 1.06E-5 | 5.26E-3 | -8.02E-2 | 4.43E-6 | 1.15E-1 | 2.84E-6 | 5.17E-2 | 8.63E-2 |
| GWP-luluc | kg CO2 eq | 8.29E-4 | 6.16E-6 | 1.92E-5 | 8.55E-4 | 2.58E-6 | 9.12E-5 | 5.98E-8 | -6.13E-4 | 3.36E-4 |
| ODP | kg CFC11 eq | 3.09E-7 | 4.01E-9 | 2.52E-9 | 3.15E-7 | 1.68E-9 | 2.53E-8 | 8.54E-11 | -1.57E-7 | 1.85E-7 |
| AP | mol H+ eq | 2.91E-3 | 9.91E-5 | 1.12E-4 | 3.12E-3 | 4.15E-5 | 4.41E-4 | 2.07E-6 | -1.47E-3 | 2.13E-3 |
| EP-fw | kg P eq | 2.95E-5 | 1.43E-7 | 4.61E-7 | 3.01E-5 | 6.00E-8 | 3.05E-6 | 2.70E-9 | -1.63E-5 | 1.68E-5 |
| EP-m | kg N eq | 5.51E-4 | 3.54E-5 | 3.27E-5 | 6.19E-4 | 1.49E-5 | 1.10E-4 | 1.27E-6 | -2.77E-4 | 4.68E-4 |
| EP-T | mol N eq | 5.92E-3 | 3.91E-4 | 3.97E-4 | 6.70E-3 | 1.64E-4 | 1.21E-3 | 8.26E-6 | -3.02E-3 | 5.07E-3 |
| POCP | kg NMVOC eq | 1.86E-3 | 1.12E-4 | 9.67E-5 | 2.06E-3 | 4.68E-5 | 3.64E-4 | 2.84E-6 | -9.85E-4 | 1.49E-3 |
| ADP-mm | kg Sb eq | 5.93E-4 | 4.50E-7 | 3.95E-7 | 5.94E-4 | 1.89E-7 | 1.75E-6 | 2.08E-9 | -6.73E-6 | 5.89E-4 |
| ADP-f | MJ | 1.45E+1 | 2.67E-1 | 2.68E-1 | 1.50E+1 | 1.12E-1 | 1.18E+0 | 6.23E-3 | -7.96E+0 | 8.38E+0 |
| WDP | m3 depriv. | 9.30E-1 | 8.19E-4 | 5.35E-1 | 1.47E+0 | 3.43E-4 | 4.54E-2 | 4.07E-5 | -5.15E-1 | 9.97E-1 |
| PM | disease inc. | 2.23E-8 | 1.57E-9 | 1.62E-9 | 2.55E-8 | 6.58E-10 | 5.53E-9 | 4.28E-11 | -1.39E-8 | 1.78E-8 |
| IR | kBq U-235 eq | 3.40E-2 | 1.17E-3 | 7.64E-4 | 3.59E-2 | 4.89E-4 | 4.21E-3 | 2.86E-5 | -1.79E-2 | 2.27E-2 |
| ETP-fw | CTUe | 2.11E+1 | 2.17E-1 | 2.64E-1 | 2.16E+1 | 9.09E-2 | 8.88E+0 | 9.72E-2 | -8.61E+0 | 2.20E+1 |
| HTP-c | CTUh | 5.28E-10 | 7.71E-12 | 1.99E-11 | 5.55E-10 | 3.23E-12 | 1.34E-10 | 1.71E-13 | -2.23E-10 | 4.69E-10 |
| HTP-nc | CTUh | 1.62E-8 | 2.58E-10 | 5.22E-10 | 1.70E-8 | 1.08E-10 | 3.13E-9 | 1.87E-11 | -6.86E-9 | 1.34E-8 |
| SQP | Pt | 1.17E+1 | 2.28E-1 | 1.39E+0 | 1.33E+1 | 9.58E-2 | 7.27E-1 | 1.59E-2 | -1.68E+1 | -2.69E+0 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 2.25E+0 | 3.83E-3 | 3.54E-1 | 2.61E+0 | 1.61E-3 | 8.38E-2 | 2.29E-4 | -3.02E+0 | -3.33E-1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 2.25E+0 | 3.83E-3 | 3.54E-1 | 2.61E+0 | 1.61E-3 | 8.38E-2 | 2.29E-4 | -3.02E+0 | -3.33E-1 |
| PENRE | MJ | 1.56E+1 | 2.83E-1 | 2.90E-1 | 1.61E+1 | 1.19E-1 | 1.26E+0 | 6.61E-3 | -8.56E+0 | 8.96E+0 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 1.56E+1 | 2.83E-1 | 2.90E-1 | 1.61E+1 | 1.19E-1 | 1.26E+0 | 6.61E-3 | -8.56E+0 | 8.96E+0 |
| PET | MJ | 1.78E+1 | 2.87E-1 | 6.44E-1 | 1.87E+1 | 1.20E-1 | 1.34E+0 | 6.84E-3 | -1.16E+1 | 8.63E+0 |
| 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 | 1.08E-2 | 3.02E-5 | 1.25E-2 | 2.33E-2 | 1.27E-5 | 1.25E-3 | 7.62E-6 | -6.65E-3 | 1.79E-2 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 8.57E-5 | 6.83E-7 | 3.91E-7 | 8.67E-5 | 2.86E-7 | 1.97E-6 | 7.58E-9 | -7.19E-6 | 8.18E-5 |
| NHWD | kg | 6.87E-2 | 1.65E-2 | 2.87E-3 | 8.81E-2 | 6.94E-3 | 4.33E-2 | 2.77E-2 | -3.09E-2 | 1.35E-1 |
| RWD | kg | 3.02E-5 | 1.82E-6 | 7.92E-7 | 3.28E-5 | 7.61E-7 | 4.58E-6 | 4.05E-8 | -1.62E-5 | 2.20E-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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