

Environmental Profile

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

Ecochain v3.5.80



Product: 3026030 - PVC Branch 45° GY 80 S/S/S BC
 Unit: 1 Piece
 Manufacturer: Wavin - FR - Varennes

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



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.

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 | ☑ | ☑ | ☑ | ☑ |

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]

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Results

| Environmental impact | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|----------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| GWP-total | kg CO2 eq | 5.56E-1 | 1.87E-2 | 2.62E-2 | 6.01E-1 | 7.96E-3 | 3.31E-1 | 2.45E-3 | -3.17E-1 | 6.25E-1 |
| GWP-f | kg CO2 eq | 6.41E-1 | 1.87E-2 | 2.06E-2 | 6.80E-1 | 7.95E-3 | 2.18E-1 | 2.45E-3 | -3.63E-1 | 5.46E-1 |
| GWP-b | kg CO2 eq | -8.51E-2 | 1.13E-5 | 5.52E-3 | -7.96E-2 | 4.83E-6 | 1.12E-1 | 3.10E-6 | 4.61E-2 | 7.90E-2 |
| GWP-luluc | kg CO2 eq | 8.42E-4 | 6.61E-6 | 1.95E-5 | 8.68E-4 | 2.81E-6 | 9.92E-5 | 6.51E-8 | -5.93E-4 | 3.77E-4 |
| ODP | kg CFC11 eq | 3.35E-7 | 4.31E-9 | 2.69E-9 | 3.42E-7 | 1.83E-9 | 2.74E-8 | 9.31E-11 | -1.70E-7 | 2.01E-7 |
| AP | mol H+ eq | 3.11E-3 | 1.06E-4 | 1.16E-4 | 3.33E-3 | 4.53E-5 | 4.76E-4 | 2.26E-6 | -1.55E-3 | 2.30E-3 |
| EP-fw | kg P eq | 3.14E-5 | 1.54E-7 | 4.92E-7 | 3.20E-5 | 6.54E-8 | 3.32E-6 | 2.94E-9 | -1.69E-5 | 1.86E-5 |
| EP-m | kg N eq | 5.80E-4 | 3.81E-5 | 3.40E-5 | 6.52E-4 | 1.62E-5 | 1.18E-4 | 1.39E-6 | -2.89E-4 | 5.00E-4 |
| EP-T | mol N eq | 6.25E-3 | 4.20E-4 | 4.09E-4 | 7.08E-3 | 1.79E-4 | 1.30E-3 | 9.01E-6 | -3.14E-3 | 5.43E-3 |
| POCP | kg NMVOC eq | 1.98E-3 | 1.20E-4 | 1.01E-4 | 2.20E-3 | 5.10E-5 | 3.90E-4 | 3.09E-6 | -1.03E-3 | 1.61E-3 |
| ADP-mm | kg Sb eq | 6.42E-4 | 4.84E-7 | 3.99E-7 | 6.43E-4 | 2.06E-7 | 1.89E-6 | 2.26E-9 | -7.25E-6 | 6.38E-4 |
| ADP-f | MJ | 1.57E+1 | 2.87E-1 | 2.88E-1 | 1.62E+1 | 1.22E-1 | 1.28E+0 | 6.79E-3 | -8.57E+0 | 9.07E+0 |
| WDP | m3 depriv. | 1.01E+0 | 8.80E-4 | 5.81E-1 | 1.59E+0 | 3.74E-4 | 4.95E-2 | 4.42E-5 | -5.47E-1 | 1.10E+0 |
| PM | disease inc. | 2.33E-8 | 1.69E-9 | 1.69E-9 | 2.67E-8 | 7.18E-10 | 5.95E-9 | 4.67E-11 | -1.40E-8 | 1.94E-8 |
| IR | kBq U-235 eq | 3.65E-2 | 1.25E-3 | 8.27E-4 | 3.86E-2 | 5.33E-4 | 4.55E-3 | 3.12E-5 | -1.88E-2 | 2.49E-2 |
| ETP-fw | CTUe | 2.16E+1 | 2.33E-1 | 2.72E-1 | 2.21E+1 | 9.91E-2 | 9.66E+0 | 1.06E-1 | -8.58E+0 | 2.34E+1 |
| HTP-c | CTUh | 5.66E-10 | 8.29E-12 | 2.10E-11 | 5.95E-10 | 3.53E-12 | 1.44E-10 | 1.86E-13 | -2.34E-10 | 5.08E-10 |
| HTP-nc | CTUh | 1.75E-8 | 2.78E-10 | 5.43E-10 | 1.83E-8 | 1.18E-10 | 3.40E-9 | 2.03E-11 | -7.25E-9 | 1.46E-8 |
| SQP | Pt | 1.16E+1 | 2.45E-1 | 1.35E+0 | 1.32E+1 | 1.04E-1 | 7.87E-1 | 1.73E-2 | -1.59E+1 | -1.80E+0 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 2.27E+0 | 4.12E-3 | 3.44E-1 | 2.61E+0 | 1.75E-3 | 9.11E-2 | 2.50E-4 | -2.88E+0 | -1.71E-1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 2.27E+0 | 4.12E-3 | 3.44E-1 | 2.61E+0 | 1.75E-3 | 9.11E-2 | 2.50E-4 | -2.88E+0 | -1.71E-1 |
| PENRE | MJ | 1.68E+1 | 3.05E-1 | 3.11E-1 | 1.74E+1 | 1.30E-1 | 1.36E+0 | 7.20E-3 | -9.21E+0 | 9.69E+0 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 1.68E+1 | 3.05E-1 | 3.11E-1 | 1.74E+1 | 1.30E-1 | 1.36E+0 | 7.20E-3 | -9.21E+0 | 9.69E+0 |
| PET | MJ | 1.91E+1 | 3.09E-1 | 6.56E-1 | 2.00E+1 | 1.31E-1 | 1.45E+0 | 7.45E-3 | -1.21E+1 | 9.52E+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 | 1.16E-2 | 3.25E-5 | 1.36E-2 | 2.52E-2 | 1.38E-5 | 1.36E-3 | 8.31E-6 | -6.86E-3 | 1.98E-2 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD | kg | 9.26E-5 | 7.34E-7 | 4.25E-7 | 9.38E-5 | 3.12E-7 | 2.12E-6 | 8.26E-9 | -7.66E-6 | 8.86E-5 |
| NHWD | kg | 7.28E-2 | 1.78E-2 | 3.12E-3 | 9.37E-2 | 7.56E-3 | 4.68E-2 | 3.02E-2 | -3.26E-2 | 1.46E-1 |
| RWD | kg | 3.23E-5 | 1.95E-6 | 8.61E-7 | 3.51E-5 | 8.30E-7 | 4.93E-6 | 4.42E-8 | -1.70E-5 | 2.40E-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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