

# Environmental Profile

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

Ecochain v3.5.80



Product: 3025704 - PVC Expans Branch 87°3 GY 100 SC/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.

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                                                                |    |    |     |     | 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

**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 | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
|----------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| GWP-total            | kg CO2 eq    | 1.00E+0  | 3.75E-2  | 4.87E-2  | 1.09E+0  | 1.38E-2  | 6.17E-1  | 4.46E-3  | -5.57E-1  | 1.17E+0  |
| GWP-f                | kg CO2 eq    | 1.15E+0  | 3.75E-2  | 3.79E-2  | 1.23E+0  | 1.38E-2  | 4.16E-1  | 4.46E-3  | -6.46E-1  | 1.02E+0  |
| GWP-b                | kg CO2 eq    | -1.50E-1 | 2.28E-5  | 1.07E-2  | -1.39E-1 | 8.39E-6  | 2.01E-1  | 5.47E-6  | 9.02E-2   | 1.52E-1  |
| GWP-luluc            | kg CO2 eq    | 1.55E-3  | 1.33E-5  | 4.10E-5  | 1.61E-3  | 4.89E-6  | 1.66E-4  | 1.17E-7  | -1.09E-3  | 6.87E-4  |
| ODP                  | kg CFC11 eq  | 5.60E-7  | 8.64E-9  | 4.99E-9  | 5.74E-7  | 3.18E-9  | 4.56E-8  | 1.64E-10 | -2.86E-7  | 3.37E-7  |
| AP                   | mol H+ eq    | 5.67E-3  | 2.14E-4  | 2.34E-4  | 6.12E-3  | 7.87E-5  | 8.11E-4  | 3.99E-6  | -2.72E-3  | 4.30E-3  |
| EP-fw                | kg P eq      | 5.57E-5  | 3.09E-7  | 9.12E-7  | 5.69E-5  | 1.14E-7  | 5.55E-6  | 5.25E-9  | -2.96E-5  | 3.30E-5  |
| EP-m                 | kg N eq      | 1.06E-3  | 7.65E-5  | 6.73E-5  | 1.21E-3  | 2.81E-5  | 2.04E-4  | 2.59E-6  | -5.10E-4  | 9.30E-4  |
| EP-T                 | mol N eq     | 1.15E-2  | 8.43E-4  | 8.34E-4  | 1.32E-2  | 3.10E-4  | 2.25E-3  | 1.59E-5  | -5.57E-3  | 1.02E-2  |
| POCP                 | kg NMVOC eq  | 3.68E-3  | 2.41E-4  | 1.99E-4  | 4.12E-3  | 8.87E-5  | 6.72E-4  | 5.49E-6  | -1.83E-3  | 3.05E-3  |
| ADP-mm               | kg Sb eq     | 1.34E-3  | 9.70E-7  | 8.55E-7  | 1.35E-3  | 3.57E-7  | 3.20E-6  | 4.02E-9  | -1.28E-5  | 1.34E-3  |
| ADP-f                | MJ           | 2.83E+1  | 5.76E-1  | 5.26E-1  | 2.94E+1  | 2.12E-1  | 2.18E+0  | 1.20E-2  | -1.53E+1  | 1.66E+1  |
| WDP                  | m3 depriv.   | 1.72E+0  | 1.77E-3  | 1.03E+0  | 2.75E+0  | 6.51E-4  | 8.26E-2  | 8.42E-5  | -9.40E-1  | 1.89E+0  |
| PM                   | disease inc. | 4.41E-8  | 3.39E-9  | 3.35E-9  | 5.08E-8  | 1.25E-9  | 1.02E-8  | 8.25E-11 | -2.53E-8  | 3.70E-8  |
| IR                   | kBq U-235 eq | 6.58E-2  | 2.52E-3  | 1.47E-3  | 6.97E-2  | 9.27E-4  | 7.70E-3  | 5.50E-5  | -3.27E-2  | 4.57E-2  |
| ETP-fw               | CTUe         | 4.11E+1  | 4.68E-1  | 5.53E-1  | 4.21E+1  | 1.72E-1  | 1.59E+1  | 1.74E-1  | -1.54E+1  | 4.30E+1  |
| HTP-c                | CTUh         | 1.04E-9  | 1.66E-11 | 4.02E-11 | 1.09E-9  | 6.13E-12 | 2.51E-10 | 3.32E-13 | -4.05E-10 | 9.45E-10 |
| HTP-nc               | CTUh         | 3.15E-8  | 5.57E-10 | 1.08E-9  | 3.31E-8  | 2.05E-10 | 5.72E-9  | 3.39E-11 | -1.25E-8  | 2.67E-8  |
| SQP                  | Pt           | 2.09E+1  | 4.93E-1  | 3.17E+0  | 2.46E+1  | 1.81E-1  | 1.35E+0  | 3.06E-2  | -2.95E+1  | -3.40E+0 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 4.05E+0  | 8.26E-3  | 8.07E-1  | 4.86E+0  | 3.04E-3  | 1.53E-1  | 4.42E-4  | -5.32E+0  | -3.03E-1 |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 4.05E+0  | 8.26E-3  | 8.07E-1  | 4.86E+0  | 3.04E-3  | 1.53E-1  | 4.42E-4  | -5.32E+0  | -3.03E-1 |
| PENRE                | MJ           | 3.04E+1  | 6.11E-1  | 5.68E-1  | 3.16E+1  | 2.25E-1  | 2.32E+0  | 1.27E-2  | -1.64E+1  | 1.77E+1  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 3.04E+1  | 6.11E-1  | 5.68E-1  | 3.16E+1  | 2.25E-1  | 2.32E+0  | 1.27E-2  | -1.64E+1  | 1.77E+1  |
| PET                  | MJ           | 3.44E+1  | 6.20E-1  | 1.38E+0  | 3.64E+1  | 2.28E-1  | 2.47E+0  | 1.32E-2  | -2.18E+1  | 1.74E+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           | 2.07E-2  | 6.52E-5  | 2.40E-2  | 4.48E-2  | 2.40E-5  | 2.31E-3  | 1.47E-5  | -1.21E-2  | 3.50E-2  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 1.88E-4 | 1.47E-6 | 7.50E-7 | 1.90E-4 | 5.42E-7 | 3.64E-6 | 1.46E-8 | -1.34E-5 | 1.81E-4 |
| NHWD                              | kg   | 1.30E-1 | 3.57E-2 | 5.50E-3 | 1.72E-1 | 1.31E-2 | 8.11E-2 | 5.33E-2 | -5.62E-2 | 2.63E-1 |
| RWD                               | kg   | 5.97E-5 | 3.92E-6 | 1.52E-6 | 6.51E-5 | 1.44E-6 | 8.40E-6 | 7.80E-8 | -2.96E-5 | 4.54E-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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