

# Environmental Profile

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

Ecochain v3.5.64



Product: 3010987 - Ed Tech Branch Reduc. HTEA 87,5° 110x50  
Unit: 1 piece  
Manufacturer: Wavin - IT - SM Maddalena

PP SWR (ED Tech) products made of PP for waste water discharge are the ideal solution for anyone who wants a quick and easy connection system. A push-fit system, made watertight using elastomeric seals. Triple-layer pipes, with a white inner layer for easier inspection. Low linear expansion.

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 - IT - SM Maddalena (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 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF 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    | 4.16E-1  | 3.00E-2  | 2.76E-2  | 4.73E-1  | 5.22E-3  | 3.04E-1  | 2.59E-3  | -2.47E-1  | 5.38E-1  |
| GWP-f                | kg CO2 eq    | 4.88E-1  | 3.00E-2  | 2.36E-2  | 5.42E-1  | 5.22E-3  | 2.15E-1  | 2.59E-3  | -2.83E-1  | 4.81E-1  |
| GWP-b                | kg CO2 eq    | -7.27E-2 | 1.82E-5  | 2.00E-3  | -7.07E-2 | 3.17E-6  | 8.95E-2  | 2.29E-6  | 3.60E-2   | 5.49E-2  |
| GWP-luluc            | kg CO2 eq    | 4.00E-4  | 1.06E-5  | 1.99E-3  | 2.41E-3  | 1.85E-6  | 2.91E-5  | 4.54E-8  | -3.37E-4  | 2.10E-3  |
| ODP                  | kg CFC11 eq  | 3.00E-8  | 6.91E-9  | 2.37E-9  | 3.92E-8  | 1.20E-9  | 4.32E-9  | 6.57E-11 | -1.54E-8  | 2.94E-8  |
| AP                   | mol H+ eq    | 2.00E-3  | 1.71E-4  | 9.53E-5  | 2.27E-3  | 2.97E-5  | 1.81E-4  | 1.58E-6  | -9.02E-4  | 1.58E-3  |
| EP-fw                | kg P eq      | 1.07E-5  | 2.47E-7  | 3.67E-7  | 1.13E-5  | 4.30E-8  | 8.56E-7  | 2.07E-9  | -6.24E-6  | 6.00E-6  |
| EP-m                 | kg N eq      | 3.66E-4  | 6.11E-5  | 1.61E-5  | 4.44E-4  | 1.06E-5  | 5.53E-5  | 1.27E-6  | -1.77E-4  | 3.34E-4  |
| EP-T                 | mol N eq     | 4.05E-3  | 6.74E-4  | 1.81E-4  | 4.91E-3  | 1.17E-4  | 6.09E-4  | 6.38E-6  | -2.00E-3  | 3.64E-3  |
| POCP                 | kg NMVOC eq  | 1.69E-3  | 1.93E-4  | 5.62E-5  | 1.94E-3  | 3.35E-5  | 1.88E-4  | 2.39E-6  | -7.93E-4  | 1.37E-3  |
| ADP-mm               | kg Sb eq     | 3.42E-5  | 7.76E-7  | 5.75E-7  | 3.55E-5  | 1.35E-7  | 6.93E-7  | 1.59E-9  | -2.83E-6  | 3.35E-5  |
| ADP-f                | MJ           | 1.58E+1  | 4.60E-1  | 3.11E-1  | 1.66E+1  | 8.01E-2  | 5.28E-1  | 4.80E-3  | -8.12E+0  | 9.11E+0  |
| WDP                  | m3 depriv.   | 3.22E-1  | 1.41E-3  | 1.10E-1  | 4.34E-1  | 2.46E-4  | 1.05E-2  | 2.58E-5  | -1.81E-1  | 2.63E-1  |
| PM                   | disease inc. | 2.10E-8  | 2.71E-9  | 9.54E-10 | 2.47E-8  | 4.71E-10 | 2.84E-9  | 3.30E-11 | -1.03E-8  | 1.77E-8  |
| IR                   | kBq U-235 eq | 1.52E-2  | 2.01E-3  | 2.90E-4  | 1.75E-2  | 3.50E-4  | 1.64E-3  | 2.24E-5  | -6.40E-3  | 1.31E-2  |
| ETP-fw               | CTUe         | 8.45E+0  | 3.74E-1  | 4.91E-1  | 9.31E+0  | 6.51E-2  | 7.25E-1  | 4.78E-3  | -4.02E+0  | 6.08E+0  |
| HTP-c                | CTUh         | 1.76E-10 | 1.33E-11 | 2.62E-11 | 2.16E-10 | 2.32E-12 | 7.30E-11 | 1.20E-13 | -8.83E-11 | 2.03E-10 |
| HTP-nc               | CTUh         | 4.11E-9  | 4.46E-10 | 5.43E-10 | 5.10E-9  | 7.76E-11 | 9.20E-10 | 2.78E-12 | -2.06E-9  | 4.04E-9  |
| SQP                  | Pt           | 8.53E+0  | 3.94E-1  | 5.66E-2  | 8.98E+0  | 6.86E-2  | 4.10E-1  | 1.23E-2  | -1.20E+1  | -2.51E+0 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 1.47E+0  | 6.61E-3  | 1.08E+0  | 2.55E+0  | 1.15E-3  | 2.53E-2  | 1.89E-4  | -2.06E+0  | 5.15E-1  |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 1.47E+0  | 6.61E-3  | 1.08E+0  | 2.55E+0  | 1.15E-3  | 2.53E-2  | 1.89E-4  | -2.06E+0  | 5.15E-1  |
| PENRE                | MJ           | 1.70E+1  | 4.89E-1  | 3.39E-1  | 1.78E+1  | 8.51E-2  | 5.62E-1  | 5.10E-3  | -8.76E+0  | 9.72E+0  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 1.70E+1  | 4.89E-1  | 3.39E-1  | 1.78E+1  | 8.51E-2  | 5.62E-1  | 5.10E-3  | -8.76E+0  | 9.72E+0  |
| PET                  | MJ           | 1.85E+1  | 4.95E-1  | 1.42E+0  | 2.04E+1  | 8.62E-2  | 5.88E-1  | 5.29E-3  | -1.08E+1  | 1.02E+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           | 5.68E-3  | 5.21E-5  | 2.61E-3  | 8.34E-3  | 9.07E-6  | 3.82E-4  | 5.92E-6  | -3.37E-3  | 5.37E-3  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 4.05E-6 | 1.18E-6 | 3.02E-7 | 5.53E-6 | 2.05E-7 | 9.40E-7 | 5.80E-9 | -3.06E-6 | 3.63E-6 |
| NHWD                              | kg   | 3.18E-2 | 2.85E-2 | 2.95E-3 | 6.33E-2 | 4.97E-3 | 2.69E-2 | 2.11E-2 | -1.16E-2 | 1.05E-1 |
| RWD                               | kg   | 1.66E-5 | 3.13E-6 | 3.23E-7 | 2.01E-5 | 5.45E-7 | 2.11E-6 | 3.14E-8 | -6.16E-6 | 1.66E-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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