

# Environmental Profile

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

Ecochain v3.5.64



Product: 3010989 - Ed Tech Branch HTEA 87,5° 110x110  
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

This document and supporting material contain confidential and proprietary business information of Wavin - IT - SM Maddalena. These materials may be printed or (photo) copied or otherwise used only with the written consent of Wavin - IT - SM Maddalena.

# Results

| Environmental impact | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
|----------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| GWP-total            | kg CO2 eq    | 6.25E-1  | 4.50E-2  | 4.20E-2  | 7.12E-1  | 7.92E-3  | 4.44E-1  | 3.92E-3  | -3.78E-1  | 7.90E-1  |
| GWP-f                | kg CO2 eq    | 7.26E-1  | 4.49E-2  | 3.60E-2  | 8.07E-1  | 7.91E-3  | 3.21E-1  | 3.92E-3  | -4.21E-1  | 7.19E-1  |
| GWP-b                | kg CO2 eq    | -1.02E-1 | 2.73E-5  | 3.04E-3  | -9.86E-2 | 4.80E-6  | 1.23E-1  | 3.47E-6  | 4.43E-2   | 6.83E-2  |
| GWP-luluc            | kg CO2 eq    | 5.42E-4  | 1.59E-5  | 3.04E-3  | 3.59E-3  | 2.80E-6  | 4.38E-5  | 6.86E-8  | -4.35E-4  | 3.20E-3  |
| ODP                  | kg CFC11 eq  | 4.31E-8  | 1.04E-8  | 3.61E-9  | 5.71E-8  | 1.82E-9  | 6.40E-9  | 9.94E-11 | -2.24E-8  | 4.30E-8  |
| AP                   | mol H+ eq    | 2.96E-3  | 2.56E-4  | 1.45E-4  | 3.36E-3  | 4.51E-5  | 2.70E-4  | 2.38E-6  | -1.31E-3  | 2.37E-3  |
| EP-fw                | kg P eq      | 1.54E-5  | 3.70E-7  | 5.59E-7  | 1.64E-5  | 6.51E-8  | 1.29E-6  | 3.13E-9  | -8.52E-6  | 9.21E-6  |
| EP-m                 | kg N eq      | 5.33E-4  | 9.16E-5  | 2.45E-5  | 6.49E-4  | 1.61E-5  | 8.18E-5  | 1.91E-6  | -2.55E-4  | 4.93E-4  |
| EP-T                 | mol N eq     | 5.92E-3  | 1.01E-3  | 2.75E-4  | 7.20E-3  | 1.78E-4  | 9.00E-4  | 9.65E-6  | -2.87E-3  | 5.42E-3  |
| POCP                 | kg NMVOC eq  | 2.50E-3  | 2.88E-4  | 8.55E-5  | 2.87E-3  | 5.08E-5  | 2.78E-4  | 3.61E-6  | -1.16E-3  | 2.04E-3  |
| ADP-mm               | kg Sb eq     | 5.01E-5  | 1.16E-6  | 8.76E-7  | 5.22E-5  | 2.05E-7  | 1.03E-6  | 2.40E-9  | -4.15E-6  | 4.92E-5  |
| ADP-f                | MJ           | 2.38E+1  | 6.90E-1  | 4.73E-1  | 2.50E+1  | 1.21E-1  | 7.91E-1  | 7.26E-3  | -1.22E+1  | 1.37E+1  |
| WDP                  | m3 depriv.   | 4.83E-1  | 2.12E-3  | 1.67E-1  | 6.52E-1  | 3.73E-4  | 1.58E-2  | 3.90E-5  | -2.60E-1  | 4.09E-1  |
| PM                   | disease inc. | 3.06E-8  | 4.06E-9  | 1.45E-9  | 3.62E-8  | 7.14E-10 | 4.23E-9  | 4.99E-11 | -1.45E-8  | 2.67E-8  |
| IR                   | kBq U-235 eq | 2.22E-2  | 3.01E-3  | 4.41E-4  | 2.57E-2  | 5.31E-4  | 2.45E-3  | 3.38E-5  | -9.00E-3  | 1.97E-2  |
| ETP-fw               | CTUe         | 1.14E+1  | 5.60E-1  | 7.47E-1  | 1.27E+1  | 9.86E-2  | 1.08E+0  | 7.19E-3  | -5.28E+0  | 8.62E+0  |
| HTP-c                | CTUh         | 2.56E-10 | 1.99E-11 | 3.98E-11 | 3.16E-10 | 3.51E-12 | 1.09E-10 | 1.81E-13 | -1.25E-10 | 3.04E-10 |
| HTP-nc               | CTUh         | 6.02E-9  | 6.68E-10 | 8.26E-10 | 7.51E-9  | 1.18E-10 | 1.38E-9  | 4.20E-12 | -2.90E-9  | 6.11E-9  |
| SQP                  | Pt           | 1.18E+1  | 5.90E-1  | 8.62E-2  | 1.25E+1  | 1.04E-1  | 6.16E-1  | 1.86E-2  | -1.57E+1  | -2.51E+0 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 2.03E+0  | 9.89E-3  | 1.64E+0  | 3.68E+0  | 1.74E-3  | 3.81E-2  | 2.86E-4  | -2.70E+0  | 1.02E+0  |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 2.03E+0  | 9.89E-3  | 1.64E+0  | 3.68E+0  | 1.74E-3  | 3.81E-2  | 2.86E-4  | -2.70E+0  | 1.02E+0  |
| PENRE                | MJ           | 2.55E+1  | 7.32E-1  | 5.16E-1  | 2.68E+1  | 1.29E-1  | 8.43E-1  | 7.71E-3  | -1.31E+1  | 1.46E+1  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 2.55E+1  | 7.32E-1  | 5.16E-1  | 2.68E+1  | 1.29E-1  | 8.43E-1  | 7.71E-3  | -1.31E+1  | 1.46E+1  |
| PET                  | MJ           | 2.76E+1  | 7.42E-1  | 2.15E+0  | 3.04E+1  | 1.31E-1  | 8.81E-1  | 7.99E-3  | -1.59E+1  | 1.56E+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           | 8.42E-3  | 7.80E-5  | 3.98E-3  | 1.25E-2  | 1.37E-5  | 5.70E-4  | 8.95E-6  | -4.72E-3  | 8.35E-3  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 5.84E-6 | 1.76E-6 | 4.60E-7 | 8.06E-6 | 3.10E-7 | 1.40E-6 | 8.77E-9 | -4.43E-6 | 5.34E-6 |
| NHWD                              | kg   | 4.57E-2 | 4.27E-2 | 4.48E-3 | 9.29E-2 | 7.52E-3 | 4.03E-2 | 3.19E-2 | -1.64E-2 | 1.56E-1 |
| RWD                               | kg   | 2.42E-5 | 4.69E-6 | 4.91E-7 | 2.94E-5 | 8.26E-7 | 3.14E-6 | 4.74E-8 | -8.65E-6 | 2.48E-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       |



Ecochain Technologies BV  
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands  
<https://www.ecochain.com>  
+31 20 3035 777