

# Environmental Profile

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

Ecochain v3.5.64



Product: 3010975 - Ed Tech Branch HTEA 87,5° 50x50  
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    | 1.55E-1  | 1.10E-2  | 9.15E-3  | 1.75E-1  | 1.82E-3  | 1.24E-1  | 9.29E-4  | -8.67E-2  | 2.15E-1  |
| GWP-f                | kg CO2 eq    | 1.84E-1  | 1.10E-2  | 7.83E-3  | 2.03E-1  | 1.82E-3  | 8.67E-2  | 9.29E-4  | -1.04E-1  | 1.88E-1  |
| GWP-b                | kg CO2 eq    | -2.93E-2 | 6.68E-6  | 6.62E-4  | -2.86E-2 | 1.11E-6  | 3.72E-2  | 8.28E-7  | 1.75E-2   | 2.61E-2  |
| GWP-luluc            | kg CO2 eq    | 1.80E-4  | 3.89E-6  | 6.61E-4  | 8.45E-4  | 6.44E-7  | 1.00E-5  | 1.66E-8  | -1.54E-4  | 7.02E-4  |
| ODP                  | kg CFC11 eq  | 1.44E-8  | 2.53E-9  | 7.86E-10 | 1.77E-8  | 4.20E-10 | 1.57E-9  | 2.37E-11 | -6.31E-9  | 1.35E-8  |
| AP                   | mol H+ eq    | 7.94E-4  | 6.27E-5  | 3.16E-5  | 8.88E-4  | 1.04E-5  | 6.60E-5  | 5.71E-7  | -3.38E-4  | 6.27E-4  |
| EP-fw                | kg P eq      | 4.49E-6  | 9.05E-8  | 1.22E-7  | 4.70E-6  | 1.50E-8  | 2.97E-7  | 7.55E-10 | -2.62E-6  | 2.40E-6  |
| EP-m                 | kg N eq      | 1.47E-4  | 2.24E-5  | 5.34E-6  | 1.75E-4  | 3.71E-6  | 2.04E-5  | 5.02E-7  | -6.81E-5  | 1.31E-4  |
| EP-T                 | mol N eq     | 1.62E-3  | 2.47E-4  | 6.00E-5  | 1.93E-3  | 4.09E-5  | 2.25E-4  | 2.30E-6  | -7.69E-4  | 1.43E-3  |
| POCP                 | kg NMVOC eq  | 6.58E-4  | 7.06E-5  | 1.86E-5  | 7.47E-4  | 1.17E-5  | 6.88E-5  | 8.60E-7  | -2.94E-4  | 5.35E-4  |
| ADP-mm               | kg Sb eq     | 1.73E-5  | 2.85E-7  | 1.91E-7  | 1.78E-5  | 4.71E-8  | 2.47E-7  | 5.75E-10 | -1.18E-6  | 1.69E-5  |
| ADP-f                | MJ           | 5.78E+0  | 1.69E-1  | 1.03E-1  | 6.05E+0  | 2.80E-2  | 1.85E-1  | 1.73E-3  | -2.88E+0  | 3.38E+0  |
| WDP                  | m3 depriv.   | 1.19E-1  | 5.18E-4  | 3.65E-2  | 1.56E-1  | 8.58E-5  | 3.75E-3  | 9.86E-6  | -6.92E-2  | 9.11E-2  |
| PM                   | disease inc. | 8.62E-9  | 9.93E-10 | 3.16E-10 | 9.93E-9  | 1.64E-10 | 1.01E-9  | 1.19E-11 | -4.09E-9  | 7.03E-9  |
| IR                   | kBq U-235 eq | 6.66E-3  | 7.38E-4  | 9.62E-5  | 7.50E-3  | 1.22E-4  | 5.83E-4  | 8.07E-6  | -2.58E-3  | 5.63E-3  |
| ETP-fw               | CTUe         | 3.88E+0  | 1.37E-1  | 1.63E-1  | 4.18E+0  | 2.27E-2  | 2.77E-1  | 1.86E-3  | -1.80E+0  | 2.69E+0  |
| HTP-c                | CTUh         | 7.24E-11 | 4.88E-12 | 8.67E-12 | 8.60E-11 | 8.08E-13 | 2.59E-11 | 4.39E-14 | -3.50E-11 | 7.77E-11 |
| HTP-nc               | CTUh         | 1.68E-9  | 1.63E-10 | 1.80E-10 | 2.02E-9  | 2.71E-11 | 3.30E-10 | 1.04E-12 | -8.24E-10 | 1.56E-9  |
| SQP                  | Pt           | 3.57E+0  | 1.44E-1  | 1.88E-2  | 3.73E+0  | 2.39E-2  | 1.42E-1  | 4.43E-3  | -5.33E+0  | -1.43E+0 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 6.12E-1  | 2.42E-3  | 3.57E-1  | 9.71E-1  | 4.01E-4  | 8.78E-3  | 6.88E-5  | -9.20E-1  | 6.07E-2  |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 6.12E-1  | 2.42E-3  | 3.57E-1  | 9.71E-1  | 4.01E-4  | 8.78E-3  | 6.88E-5  | -9.20E-1  | 6.07E-2  |
| PENRE                | MJ           | 6.19E+0  | 1.79E-1  | 1.12E-1  | 6.48E+0  | 2.97E-2  | 1.97E-1  | 1.84E-3  | -3.11E+0  | 3.60E+0  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 6.19E+0  | 1.79E-1  | 1.12E-1  | 6.48E+0  | 2.97E-2  | 1.97E-1  | 1.84E-3  | -3.11E+0  | 3.60E+0  |
| PET                  | MJ           | 6.80E+0  | 1.82E-1  | 4.69E-1  | 7.46E+0  | 3.01E-2  | 2.06E-1  | 1.91E-3  | -4.03E+0  | 3.66E+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           | 2.23E-3  | 1.91E-5  | 8.66E-4  | 3.12E-3  | 3.16E-6  | 1.49E-4  | 2.13E-6  | -1.35E-3  | 1.92E-3  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 1.76E-6 | 4.32E-7 | 1.00E-7 | 2.29E-6 | 7.15E-8 | 3.43E-7 | 2.10E-9 | -1.23E-6 | 1.48E-6 |
| NHWD                              | kg   | 1.34E-2 | 1.05E-2 | 9.76E-4 | 2.49E-2 | 1.73E-3 | 9.62E-3 | 7.61E-3 | -4.56E-3 | 3.93E-2 |
| RWD                               | kg   | 7.60E-6 | 1.15E-6 | 1.07E-7 | 8.86E-6 | 1.90E-7 | 7.52E-7 | 1.13E-8 | -2.52E-6 | 7.29E-6 |
| 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