

# Environmental Profile

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

Ecochain v3.5.80



Product: 3071226 - Tigris PEXc/Al/PE P.Ins13BL 25x2.5 L=25  
Unit: 1 piece  
Manufacturer: Wavin - PL - MPC

LCA standard: EN15804+A2 (2019)  
Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
Externally verified: Yes  
Issue date: 30-06-2023  
End of validity: 30-06-2028  
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 - PL - MPC (2021). (☑ = 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

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

# Results

| Environmental impact | Unit         | A1       | A2       | A3      | A1-A3    | C2       | C3      | C4       | D        | Total    |
|----------------------|--------------|----------|----------|---------|----------|----------|---------|----------|----------|----------|
| GWP-total            | kg CO2 eq    | 3.13E+1  | 8.61E-1  | 1.06E+0 | 3.32E+1  | 8.08E-2  | 2.02E+1 | 2.88E-1  | 7.88E-1  | 5.46E+1  |
| GWP-f                | kg CO2 eq    | 3.86E+1  | 8.60E-1  | 7.94E-1 | 4.02E+1  | 8.07E-2  | 1.20E+1 | 2.87E-1  | -9.69E-1 | 5.17E+1  |
| GWP-b                | kg CO2 eq    | -7.40E+0 | 3.92E-4  | 2.69E-1 | -7.13E+0 | 4.90E-5  | 8.18E+0 | 1.42E-3  | 1.74E+0  | 2.80E+0  |
| GWP-luluc            | kg CO2 eq    | 9.92E-2  | 3.17E-4  | 5.43E-4 | 1.00E-1  | 2.86E-5  | 9.51E-5 | 7.02E-6  | 1.63E-2  | 1.16E-1  |
| ODP                  | kg CFC11 eq  | 1.79E-6  | 1.90E-7  | 4.58E-8 | 2.02E-6  | 1.86E-8  | 4.58E-8 | 8.11E-9  | -7.11E-7 | 1.39E-6  |
| AP                   | mol H+ eq    | 2.15E-1  | 5.17E-3  | 5.22E-3 | 2.26E-1  | 4.60E-4  | 2.60E-3 | 2.02E-4  | 3.46E-2  | 2.64E-1  |
| EP-fw                | kg P eq      | 1.28E-3  | 8.64E-6  | 3.12E-5 | 1.32E-3  | 6.64E-7  | 4.04E-6 | 3.24E-7  | 6.33E-5  | 1.39E-3  |
| EP-m                 | kg N eq      | 3.65E-2  | 1.80E-3  | 7.22E-4 | 3.90E-2  | 1.64E-4  | 1.08E-3 | 1.25E-4  | 2.72E-3  | 4.31E-2  |
| EP-T                 | mol N eq     | 4.05E-1  | 1.98E-2  | 7.65E-3 | 4.32E-1  | 1.81E-3  | 1.21E-2 | 8.18E-4  | 2.82E-2  | 4.75E-1  |
| POCP                 | kg NMVOC eq  | 1.36E-1  | 5.64E-3  | 2.53E-3 | 1.44E-1  | 5.18E-4  | 3.37E-3 | 2.94E-4  | 7.39E-3  | 1.56E-1  |
| ADP-mm               | kg Sb eq     | 3.18E-4  | 2.17E-5  | 6.40E-5 | 4.04E-4  | 2.09E-6  | 5.30E-6 | 2.02E-7  | -1.92E-3 | -1.51E-3 |
| ADP-f                | MJ           | 7.01E+2  | 1.30E+1  | 6.49E+0 | 7.21E+2  | 1.24E+0  | 3.01E+0 | 6.12E-1  | -7.78E+1 | 6.48E+2  |
| WDP                  | m3 depriv.   | 1.53E+1  | 4.62E-2  | 2.11E-1 | 1.55E+1  | 3.80E-3  | 2.51E-2 | 3.12E-3  | -2.40E+0 | 1.32E+1  |
| PM                   | disease inc. | 2.41E-6  | 7.69E-8  | 3.91E-8 | 2.52E-6  | 7.28E-9  | 3.04E-8 | 4.02E-9  | 3.39E-7  | 2.90E-6  |
| IR                   | kBq U-235 eq | 8.98E-1  | 5.43E-2  | 7.30E-3 | 9.59E-1  | 5.41E-3  | 1.24E-2 | 3.21E-3  | -8.49E-2 | 8.95E-1  |
| ETP-fw               | CTUe         | 9.40E+2  | 1.15E+1  | 4.23E+1 | 9.93E+2  | 1.01E+0  | 7.60E+0 | 3.24E+2  | 2.57E+1  | 1.35E+3  |
| HTP-c                | CTUh         | 3.86E-8  | 3.76E-10 | 2.18E-9 | 4.12E-8  | 3.58E-11 | 1.95E-9 | 2.52E-11 | 7.47E-9  | 5.07E-8  |
| HTP-nc               | CTUh         | 7.14E-7  | 1.26E-8  | 5.41E-8 | 7.81E-7  | 1.20E-9  | 1.56E-8 | 5.36E-10 | 1.32E-7  | 9.30E-7  |
| SQP                  | Pt           | 7.69E+2  | 1.12E+1  | 8.01E+0 | 7.88E+2  | 1.06E+0  | 1.89E+0 | 1.46E+0  | -8.30E+2 | -3.74E+1 |
| Resource use         | Unit         | A1       | A2       | A3      | A1-A3    | C2       | C3      | C4       | D        | Total    |
| PERE                 | MJ           | 1.42E+2  | 5.73E-4  | 7.64E+1 | 2.18E+2  | 1.78E-2  | 1.04E-1 | 4.16E-2  | -1.26E+2 | 9.24E+1  |
| PERM                 | MJ           | 0        | 1.61E-1  | 0       | 1.61E-1  | 0        | 0       | 0        | 0        | 1.61E-1  |
| PERT                 | MJ           | 1.42E+2  | 1.62E-1  | 7.64E+1 | 2.18E+2  | 1.78E-2  | 1.04E-1 | 4.16E-2  | -1.26E+2 | 9.26E+1  |
| PENRE                | MJ           | 7.50E+2  | 9.03E-2  | 6.95E+0 | 7.57E+2  | 1.32E+0  | 3.20E+0 | 6.49E-1  | -8.84E+1 | 6.74E+2  |
| PENRM                | MJ           | 0        | 1.37E+1  | 0       | 1.37E+1  | 0        | 0       | 0        | 0        | 1.37E+1  |
| PENRT                | MJ           | 7.50E+2  | 1.38E+1  | 6.95E+0 | 7.71E+2  | 1.32E+0  | 3.20E+0 | 6.49E-1  | -8.84E+1 | 6.88E+2  |
| PET                  | MJ           | 8.92E+2  | 1.39E+1  | 8.33E+1 | 9.89E+2  | 1.33E+0  | 3.30E+0 | 6.90E-1  | -2.14E+2 | 7.80E+2  |
| 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           | 3.66E-1  | 1.57E-3  | 5.87E-3 | 3.73E-1  | 1.40E-4  | 2.81E-3 | 7.69E-4  | -3.50E-2 | 3.42E-1  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 9.71E-3 | 3.27E-5 | 3.89E-6 | 9.75E-3 | 3.17E-6 | 9.62E-6 | 7.30E-7 | -4.02E-3 | 5.74E-3 |
| NHWD                              | kg   | 6.13E+0 | 8.17E-1 | 6.62E-2 | 7.02E+0 | 7.68E-2 | 1.91E-1 | 2.46E+0 | 1.11E+0  | 1.09E+1 |
| RWD                               | kg   | 9.33E-4 | 8.51E-5 | 5.69E-6 | 1.02E-3 | 8.42E-6 | 1.74E-5 | 4.08E-6 | -8.51E-5 | 9.69E-4 |
| 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