

# Environmental Profile

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

Ecochain v3.5.64



Product: 3069964 - Tegra 600 PP Bend 120° DN250 SW DK  
 Unit: 1 Piece  
 Manufacturer: Wavin Poland Buk  
 Address: Dobieżyńska 43  
 64-320 Buk  
 Poland  
 Contact: <https://www.wavin.com/en-en>

LCA standard: EN15804+A2 (2019)  
 Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
 Externally verified: Yes  
 Issue date: 19-09-2022  
 End of validity: 19-09-2027  
 Verifier: Martijn van Hövell - SGS Search



This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

Plastic inspection chamber made of polypropylene according to DIN EN 13598-2.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin Poland Buk (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

A1 Raw material supply A2 Transport A3 Manufacturing

## Construction process stage

A4 Transport gate to site  
 A5 Assembly / Construction installation process

## Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment  
 B6 Operational energy use B7 Operational water use

## End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing  
 C4 Disposal

## Benefits and loads beyond the system boundaries

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 non-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]

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# Results

| Environmental impact | Unit         | A1       | A2       | A3      | A1-A3    | C2       | C3      | C4       | D        | Total   |
|----------------------|--------------|----------|----------|---------|----------|----------|---------|----------|----------|---------|
| GWP-total            | kg CO2 eq    | 3.86E+1  | 1.49E+0  | 1.86E+0 | 4.19E+1  | 7.34E-1  | 5.45E+1 | 3.58E-1  | -3.75E+1 | 6.00E+1 |
| GWP-f                | kg CO2 eq    | 6.55E+1  | 1.48E+0  | 1.76E+0 | 6.87E+1  | 7.34E-1  | 2.74E+1 | 3.58E-1  | -3.74E+1 | 5.99E+1 |
| GWP-b                | kg CO2 eq    | -2.70E+1 | 6.85E-4  | 9.71E-2 | -2.69E+1 | 4.46E-4  | 2.71E+1 | 3.15E-4  | -1.13E-1 | 8.15E-2 |
| GWP-luluc            | kg CO2 eq    | 3.54E-2  | 5.44E-4  | 6.33E-4 | 3.66E-2  | 2.60E-4  | 4.05E-3 | 6.20E-6  | -1.51E-2 | 2.58E-2 |
| ODP                  | kg CFC11 eq  | 3.23E-6  | 3.28E-7  | 2.22E-7 | 3.78E-6  | 1.69E-7  | 5.54E-7 | 9.04E-9  | -2.03E-6 | 2.48E-6 |
| AP                   | mol H+ eq    | 2.65E-1  | 8.61E-3  | 7.06E-3 | 2.80E-1  | 4.18E-3  | 2.43E-2 | 2.17E-4  | -1.13E-1 | 1.96E-1 |
| EP-fw                | kg P eq      | 1.26E-3  | 1.50E-5  | 3.45E-5 | 1.30E-3  | 6.04E-6  | 1.18E-4 | 2.84E-7  | -4.87E-4 | 9.42E-4 |
| EP-m                 | kg N eq      | 4.65E-2  | 3.03E-3  | 1.06E-3 | 5.06E-2  | 1.50E-3  | 7.39E-3 | 1.64E-4  | -2.20E-2 | 3.76E-2 |
| EP-T                 | mol N eq     | 5.32E-1  | 3.34E-2  | 1.16E-2 | 5.77E-1  | 1.65E-2  | 8.16E-2 | 8.78E-4  | -2.55E-1 | 4.21E-1 |
| POCP                 | kg NMVOC eq  | 2.30E-1  | 9.55E-3  | 3.90E-3 | 2.43E-1  | 4.71E-3  | 2.51E-2 | 3.28E-4  | -1.04E-1 | 1.69E-1 |
| ADP-mm               | kg Sb eq     | 3.43E-3  | 3.76E-5  | 6.87E-5 | 3.53E-3  | 1.90E-5  | 8.93E-5 | 2.18E-7  | -3.42E-4 | 3.30E-3 |
| ADP-f                | MJ           | 2.18E+3  | 2.24E+1  | 2.21E+1 | 2.22E+3  | 1.13E+1  | 7.16E+1 | 6.61E-1  | -1.11E+3 | 1.20E+3 |
| WDP                  | m3 depriv.   | 4.40E+1  | 8.01E-2  | 2.20E-1 | 4.43E+1  | 3.46E-2  | 1.44E+0 | 3.44E-3  | -1.90E+1 | 2.68E+1 |
| PM                   | disease inc. | 3.16E-6  | 1.33E-7  | 5.19E-8 | 3.35E-6  | 6.62E-8  | 3.79E-7 | 4.54E-9  | -1.13E-6 | 2.67E-6 |
| IR                   | kBq U-235 eq | 1.83E+0  | 9.38E-2  | 3.46E-2 | 1.96E+0  | 4.92E-2  | 2.18E-1 | 3.07E-3  | -6.27E-1 | 1.60E+0 |
| ETP-fw               | CTUe         | 5.81E+2  | 2.00E+1  | 4.82E+1 | 6.49E+2  | 9.15E+0  | 9.03E+1 | 6.23E-1  | -2.47E+2 | 5.02E+2 |
| HTP-c                | CTUh         | 2.84E-8  | 6.47E-10 | 2.40E-9 | 3.14E-8  | 3.25E-10 | 1.07E-8 | 1.64E-11 | -1.15E-8 | 3.09E-8 |
| HTP-nc               | CTUh         | 5.66E-7  | 2.18E-8  | 5.79E-8 | 6.46E-7  | 1.09E-8  | 1.25E-7 | 3.74E-10 | -2.30E-7 | 5.52E-7 |
| SQP                  | Pt           | 2.48E+3  | 1.94E+1  | 9.36E+0 | 2.51E+3  | 9.64E+0  | 5.67E+1 | 1.69E+0  | -1.23E+3 | 1.34E+3 |
| Resource use         | Unit         | A1       | A2       | A3      | A1-A3    | C2       | C3      | C4       | D        | Total   |
| PERE                 | MJ           | 4.31E+2  | 2.80E-1  | 8.16E+1 | 5.13E+2  | 1.62E-1  | 3.50E+0 | 2.59E-2  | -2.07E+2 | 3.09E+2 |
| PERM                 | MJ           | 0        | 0        | 0       | 0        | 0        | 0       | 0        | 0        | 0       |
| PERT                 | MJ           | 4.31E+2  | 2.80E-1  | 8.16E+1 | 5.13E+2  | 1.62E-1  | 3.50E+0 | 2.59E-2  | -2.07E+2 | 3.09E+2 |
| PENRE                | MJ           | 2.34E+3  | 2.38E+1  | 2.40E+1 | 2.38E+3  | 1.20E+1  | 7.63E+1 | 7.01E-1  | -1.19E+3 | 1.28E+3 |
| PENRM                | MJ           | 0        | 0        | 0       | 0        | 0        | 0       | 0        | 0        | 0       |
| PENRT                | MJ           | 2.34E+3  | 2.38E+1  | 2.40E+1 | 2.38E+3  | 1.20E+1  | 7.63E+1 | 7.01E-1  | -1.19E+3 | 1.28E+3 |
| PET                  | MJ           | 2.77E+3  | 2.40E+1  | 1.06E+2 | 2.90E+3  | 1.21E+1  | 7.98E+1 | 7.27E-1  | -1.40E+3 | 1.59E+3 |
| 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           | 7.38E-1  | 2.73E-3  | 6.28E-3 | 7.47E-1  | 1.27E-3  | 5.02E-2 | 8.15E-4  | -2.93E-1 | 5.06E-1 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 5.34E-4 | 5.67E-5 | 2.66E-5 | 6.18E-4 | 2.88E-5 | 1.22E-4 | 7.97E-7 | -3.83E-4 | 3.86E-4 |
| NHWD                              | kg   | 4.02E+0 | 1.42E+0 | 6.93E-2 | 5.51E+0 | 6.98E-1 | 3.84E+0 | 2.91E+0 | -1.48E+0 | 1.15E+1 |
| RWD                               | kg   | 1.93E-3 | 1.47E-4 | 4.89E-5 | 2.13E-3 | 7.66E-5 | 2.77E-4 | 4.32E-6 | -6.07E-4 | 1.88E-3 |
| 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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