

Environmental Profile

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

Ecochain v3.5.64



Product: 3011379 - Tegra 400 PP Bend 150° DN200 SW
 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 | | | | | Use stage | | | | | | | End-of-Life stage | | | | |
| A1 Raw material supply A2 Transport A3 Manufacturing | | | | | B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use | | | | | | | C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal | | | | |
| Construction process stage | | | | | Benefits and loads beyond the system boundaries | | | | | | | | | | | |
| A4 Transport gate to site 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]

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Results

| Environmental impact | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|----------------------|--------------|----------|----------|---------|----------|----------|---------|----------|----------|---------|
| GWP-total | kg CO2 eq | 8.93E+0 | 5.77E-1 | 9.62E-1 | 1.05E+1 | 2.77E-1 | 2.62E+1 | 1.33E-1 | -1.54E+1 | 2.17E+1 |
| GWP-f | kg CO2 eq | 2.54E+1 | 5.77E-1 | 9.23E-1 | 2.69E+1 | 2.76E-1 | 9.71E+0 | 1.33E-1 | -1.53E+1 | 2.17E+1 |
| GWP-b | kg CO2 eq | -1.65E+1 | 2.66E-4 | 3.89E-2 | -1.64E+1 | 1.68E-4 | 1.65E+1 | 1.17E-4 | -4.35E-2 | 5.64E-2 |
| GWP-luluc | kg CO2 eq | 1.60E-2 | 2.11E-4 | 4.54E-4 | 1.66E-2 | 9.78E-5 | 1.55E-3 | 2.30E-6 | -1.04E-2 | 7.88E-3 |
| ODP | kg CFC11 eq | 1.16E-6 | 1.27E-7 | 1.04E-7 | 1.39E-6 | 6.37E-8 | 2.10E-7 | 3.36E-9 | -9.05E-7 | 7.66E-7 |
| AP | mol H+ eq | 1.03E-1 | 3.34E-3 | 4.82E-3 | 1.11E-1 | 1.57E-3 | 8.99E-3 | 8.04E-5 | -5.05E-2 | 7.10E-2 |
| EP-fw | kg P eq | 4.99E-4 | 5.82E-6 | 2.48E-5 | 5.30E-4 | 2.27E-6 | 4.51E-5 | 1.05E-7 | -2.49E-4 | 3.29E-4 |
| EP-m | kg N eq | 1.85E-2 | 1.18E-3 | 6.39E-4 | 2.04E-2 | 5.63E-4 | 2.69E-3 | 5.80E-5 | -1.04E-2 | 1.33E-2 |
| EP-T | mol N eq | 2.10E-1 | 1.30E-2 | 7.22E-3 | 2.30E-1 | 6.21E-3 | 2.96E-2 | 3.26E-4 | -1.18E-1 | 1.49E-1 |
| POCP | kg NMVOC eq | 9.24E-2 | 3.71E-3 | 2.43E-3 | 9.86E-2 | 1.77E-3 | 9.20E-3 | 1.22E-4 | -4.93E-2 | 6.04E-2 |
| ADP-mm | kg Sb eq | 1.02E-3 | 1.46E-5 | 5.36E-5 | 1.09E-3 | 7.15E-6 | 3.40E-5 | 8.11E-8 | -1.44E-4 | 9.84E-4 |
| ADP-f | MJ | 8.31E+2 | 8.70E+0 | 1.10E+1 | 8.50E+2 | 4.24E+0 | 2.72E+1 | 2.46E-1 | -4.42E+2 | 4.40E+2 |
| WDP | m3 depriv. | 1.65E+1 | 3.11E-2 | 1.58E-1 | 1.67E+1 | 1.30E-2 | 5.40E-1 | 1.30E-3 | -7.63E+0 | 9.61E+0 |
| PM | disease inc. | 1.13E-6 | 5.18E-8 | 3.32E-8 | 1.21E-6 | 2.49E-8 | 1.43E-7 | 1.69E-9 | -5.93E-7 | 7.89E-7 |
| IR | kBq U-235 eq | 6.61E-1 | 3.64E-2 | 1.58E-2 | 7.14E-1 | 1.85E-2 | 8.34E-2 | 1.14E-3 | -3.03E-1 | 5.13E-1 |
| ETP-fw | CTUe | 2.30E+2 | 7.76E+0 | 3.54E+1 | 2.74E+2 | 3.44E+0 | 3.30E+1 | 2.23E-1 | -1.16E+2 | 1.94E+2 |
| HTP-c | CTUh | 1.42E-8 | 2.52E-10 | 1.78E-9 | 1.62E-8 | 1.23E-10 | 3.89E-9 | 6.08E-12 | -8.15E-9 | 1.21E-8 |
| HTP-nc | CTUh | 2.32E-7 | 8.48E-9 | 4.40E-8 | 2.85E-7 | 4.11E-9 | 4.68E-8 | 1.37E-10 | -1.11E-7 | 2.25E-7 |
| SQP | Pt | 1.42E+3 | 7.55E+0 | 6.75E+0 | 1.44E+3 | 3.63E+0 | 2.16E+1 | 6.30E-1 | -1.17E+3 | 2.90E+2 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 2.42E+2 | 1.09E-1 | 6.45E+1 | 3.07E+2 | 6.09E-2 | 1.34E+0 | 9.58E-3 | -1.79E+2 | 1.30E+2 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 2.42E+2 | 1.09E-1 | 6.45E+1 | 3.07E+2 | 6.09E-2 | 1.34E+0 | 9.58E-3 | -1.79E+2 | 1.30E+2 |
| PENRE | MJ | 8.91E+2 | 9.23E+0 | 1.19E+1 | 9.12E+2 | 4.50E+0 | 2.90E+1 | 2.61E-1 | -4.76E+2 | 4.70E+2 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 8.91E+2 | 9.23E+0 | 1.19E+1 | 9.12E+2 | 4.50E+0 | 2.90E+1 | 2.61E-1 | -4.76E+2 | 4.70E+2 |
| PET | MJ | 1.13E+3 | 9.34E+0 | 7.64E+1 | 1.22E+3 | 4.56E+0 | 3.03E+1 | 2.70E-1 | -6.55E+2 | 5.99E+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 | 2.75E-1 | 1.06E-3 | 4.47E-3 | 2.80E-1 | 4.80E-4 | 1.78E-2 | 3.03E-4 | -1.23E-1 | 1.76E-1 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD | kg | 2.32E-4 | 2.20E-5 | 1.12E-5 | 2.65E-4 | 1.08E-5 | 4.57E-5 | 2.96E-7 | -1.99E-4 | 1.23E-4 |
| NHWD | kg | 1.80E+0 | 5.52E-1 | 3.04E-2 | 2.38E+0 | 2.63E-1 | 1.37E+0 | 1.08E+0 | -9.64E-1 | 4.14E+0 |
| RWD | kg | 6.86E-4 | 5.71E-5 | 2.06E-5 | 7.64E-4 | 2.88E-5 | 1.06E-4 | 1.60E-6 | -3.07E-4 | 5.94E-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 |



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