# Environmental Profile

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

Ecochain v3.5.80

| | |
|---|---|
| Product: | 3085265 - PP Vent. Endcap Duct 235x80 |
| Unit: | 1 piece |
| Manufacturer: | Wavin - NL - Hardenberg - Verified |
| Address: | J.C. Kellerlaan 3<br>7772 SG Hardenberg<br>Netherlands |

With the new Ventiza air distribution system, Wavin offers a solution from the ventilation to the valve. A good indoor climate is arranged in no time!

| | |
|---|---|
| LCA standard: | NMD Bepalingsmethode 1.1 (2022) |
| Standard database: | Worldwide - Ecoinvent v 3.6 Cut-Off |
| Externally verified: | Yes |
| Issue date: | 08-06-2023 |
| End of validity: | 08-06-2028 |
| 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 - NL - Hardenberg - Verified (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

**ECI** = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3−-eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **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

# Results

| Environmental impact SBK set 1 | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| ECI | euro | 0.01 | 0 | 0 | 0.01 | 0 | 0 | 0 | -0 | 0.01 |
| ADPE | kg Sb-eq | 8.29E-7 | 3.14E-8 | 1.22E-7 | 9.83E-7 | 2.32E-8 | 1.18E-7 | 2.57E-10 | -3.19E-7 | 8.05E-7 |
| ADPF | kg Sb-eq | 1.19E-3 | 9.05E-6 | 2.10E-5 | 1.22E-3 | 6.52E-6 | 4.43E-5 | 3.57E-7 | -6.44E-4 | 6.31E-4 |
| GWP | kg CO2-eq | 6.88E-2 | 1.23E-3 | 3.98E-3 | 7.40E-2 | 8.88E-4 | 2.62E-2 | 3.60E-4 | -4.22E-2 | 5.93E-2 |
| ODP | kg CFC-11-eq | 2.60E-9 | 2.18E-10 | 3.15E-10 | 3.14E-9 | 1.65E-10 | 6.02E-10 | 8.54E-12 | -2.30E-9 | 1.62E-9 |
| POCP | kg ethene-eq | 5.58E-5 | 7.42E-7 | 1.73E-6 | 5.83E-5 | 5.33E-7 | 4.50E-6 | 8.20E-8 | -2.83E-5 | 3.51E-5 |
| AP | kg SO2-eq | 2.17E-4 | 5.41E-6 | 1.71E-5 | 2.40E-4 | 3.82E-6 | 2.28E-5 | 1.89E-7 | -1.14E-4 | 1.53E-4 |
| EP | kg PO4 3−-eq | 2.26E-5 | 1.06E-6 | 2.20E-6 | 2.58E-5 | 7.63E-7 | 4.07E-6 | 8.18E-8 | -1.36E-5 | 1.72E-5 |
| HTP | kg 1,4-DB-eq | 1.14E-2 | 5.18E-4 | 1.85E-3 | 1.37E-2 | 3.80E-4 | 8.91E-3 | 2.81E-5 | -6.17E-3 | 1.69E-2 |
| FAETP | kg 1,4-DB-eq | 3.72E-4 | 1.51E-5 | 6.32E-5 | 4.50E-4 | 1.11E-5 | 1.92E-4 | 3.03E-5 | -2.23E-4 | 4.60E-4 |
| MAETP | kg 1,4-DB-eq | 7.58E-1 | 5.44E-2 | 2.49E-1 | 1.06E+0 | 3.97E-2 | 4.57E-1 | 3.03E-2 | -3.83E-1 | 1.20E+0 |
| TETP | kg 1,4-DB-eq | 5.52E-5 | 1.83E-6 | 1.38E-4 | 1.95E-4 | 1.35E-6 | 2.72E-5 | 4.62E-8 | -6.27E-5 | 1.60E-4 |
| Environmental impact | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| GWP-total | kg CO2 eq | 7.20E-2 | 1.24E-3 | 4.56E-3 | 7.78E-2 | 8.96E-4 | 2.82E-2 | 4.22E-4 | -3.94E-2 | 6.79E-2 |
| GWP-f | kg CO2 eq | 7.16E-2 | 1.24E-3 | 3.50E-3 | 7.64E-2 | 8.95E-4 | 2.63E-2 | 4.22E-4 | -4.37E-2 | 6.03E-2 |
| GWP-b | kg CO2 eq | 3.65E-4 | 5.73E-7 | 7.23E-4 | 1.09E-3 | 5.43E-7 | 1.89E-3 | 3.66E-7 | 4.26E-3 | 7.24E-3 |
| GWP-luluc | kg CO2 eq | 4.12E-5 | 4.55E-7 | 3.32E-4 | 3.74E-4 | 3.17E-7 | 5.14E-6 | 7.35E-9 | -3.92E-5 | 3.40E-4 |
| ODP | kg CFC11 eq | 2.82E-9 | 2.74E-10 | 3.70E-10 | 3.46E-9 | 2.06E-10 | 7.13E-10 | 1.06E-11 | -2.36E-9 | 2.03E-9 |
| AP | mol H+ eq | 2.64E-4 | 7.20E-6 | 2.13E-5 | 2.92E-4 | 5.10E-6 | 2.95E-5 | 2.53E-7 | -1.38E-4 | 1.89E-4 |
| EP-fw | kg P eq | 1.22E-6 | 1.25E-8 | 6.13E-8 | 1.29E-6 | 7.36E-9 | 1.49E-7 | 3.35E-10 | -8.66E-7 | 5.84E-7 |
| EP-m | kg N eq | 4.72E-5 | 2.54E-6 | 5.04E-6 | 5.48E-5 | 1.82E-6 | 8.75E-6 | 1.63E-7 | -2.55E-5 | 4.01E-5 |
| EP-T | mol N eq | 5.16E-4 | 2.80E-5 | 5.56E-5 | 5.99E-4 | 2.01E-5 | 9.62E-5 | 1.03E-6 | -2.84E-4 | 4.33E-4 |
| POCP | kg NMVOC eq | 2.23E-4 | 7.98E-6 | 1.58E-5 | 2.47E-4 | 5.75E-6 | 3.03E-5 | 3.85E-7 | -1.18E-4 | 1.65E-4 |
| ADP-mm | kg Sb eq | 8.29E-7 | 3.14E-8 | 1.22E-7 | 9.82E-7 | 2.32E-8 | 1.18E-7 | 2.57E-10 | -3.19E-7 | 8.04E-7 |
| ADP-f | MJ | 2.51E+0 | 1.87E-2 | 3.91E-2 | 2.57E+0 | 1.37E-2 | 9.12E-2 | 7.74E-4 | -1.34E+0 | 1.33E+0 |
| WDP | m3 depriv. | 4.79E-2 | 6.69E-5 | 3.03E-2 | 7.82E-2 | 4.22E-5 | 1.74E-3 | 4.50E-6 | -2.99E-2 | 5.01E-2 |
| PM | disease inc. | 2.63E-9 | 1.11E-10 | 2.64E-10 | 3.00E-9 | 8.08E-11 | 4.84E-10 | 5.32E-12 | -1.39E-9 | 2.18E-9 |
| IR | kBq U-235 eq | 1.69E-3 | 7.84E-5 | 6.22E-5 | 1.83E-3 | 6.00E-5 | 2.80E-4 | 3.58E-6 | -9.13E-4 | 1.26E-3 |
| ETP-fw | CTUe | 9.09E-1 | 1.67E-2 | 9.09E-2 | 1.02E+0 | 1.12E-2 | 1.06E-1 | 6.48E-4 | -5.06E-1 | 6.28E-1 |
| HTP-c | CTUh | 1.66E-11 | 5.41E-13 | 3.15E-12 | 2.03E-11 | 3.97E-13 | 1.28E-11 | 1.94E-14 | -9.85E-12 | 2.37E-11 |
| HTP-nc | CTUh | 4.77E-10 | 1.83E-11 | 9.83E-11 | 5.93E-10 | 1.33E-11 | 1.54E-10 | 4.20E-13 | -2.98E-10 | 4.64E-10 |
| SQP | Pt | 2.61E-1 | 1.62E-2 | 2.93E-3 | 2.80E-1 | 1.18E-2 | 7.19E-2 | 1.98E-3 | -8.27E-1 | -4.62E-1 |

| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| PERE | MJ | 7.02E-2 | 2.34E-4 | 1.90E-1 | 2.61E-1 | 1.97E-4 | 4.42E-3 | 2.96E-5 | -1.60E-1 | 1.05E-1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 7.02E-2 | 2.34E-4 | 1.90E-1 | 2.61E-1 | 1.97E-4 | 4.42E-3 | 2.96E-5 | -1.60E-1 | 1.05E-1 |
| PENRE | MJ | 2.69E+0 | 1.99E-2 | 4.23E-2 | 2.75E+0 | 1.46E-2 | 9.71E-2 | 8.21E-4 | -1.44E+0 | 1.43E+0 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 2.69E+0 | 1.99E-2 | 4.23E-2 | 2.75E+0 | 1.46E-2 | 9.71E-2 | 8.21E-4 | -1.44E+0 | 1.43E+0 |
| PET | MJ | 2.76E+0 | 2.01E-2 | 2.33E-1 | 3.01E+0 | 1.48E-2 | 1.02E-1 | 8.51E-4 | -1.60E+0 | 1.53E+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 | 7.42E-4 | 2.28E-6 | 7.16E-4 | 1.46E-3 | 1.55E-6 | 5.18E-5 | 9.51E-7 | -5.11E-4 | 1.00E-3 |
| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| HWD | kg | 3.57E-7 | 4.74E-8 | 4.16E-8 | 4.46E-7 | 3.51E-8 | 1.53E-7 | 9.38E-10 | -3.68E-7 | 2.66E-7 |
| NHWD | kg | 3.11E-3 | 1.19E-3 | 6.42E-5 | 4.36E-3 | 8.51E-4 | 4.45E-3 | 3.40E-3 | -1.41E-3 | 1.16E-2 |
| RWD | kg | 1.75E-6 | 1.23E-7 | 7.70E-8 | 1.95E-6 | 9.34E-8 | 3.58E-7 | 5.04E-9 | -8.35E-7 | 1.57E-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