

# Environmental Profile

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

Ecochain v3.5.71



Product: 3032471 - OsmaS PVCU Access Bend 90° GY 110 S/S  
Unit: 1 piece  
Manufacturer: Wavin - UK - Chippenham - Verified

The Wavin Osma soil range offers an exceptional choice of pipe & fittings including brackets, bends, junctions, access fittings, and terminations. To connect to your soil system, we offer push-fit & solvent weld waste ranges, together with trap, overflow & condensate ranges to cover all installation needs.

LCA standard: EN15804+A2 (2019)  
Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
Externally verified: Yes  
Issue date: 09-02-2023  
End of validity: 09-02-2028  
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 - UK - Chippenham - 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                                                                |    |    |     |     | 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

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# Results

| Environmental impact | Unit         | A1      | A2       | A3       | A1-A3   | C2       | C3       | C4       | D         | Total   |
|----------------------|--------------|---------|----------|----------|---------|----------|----------|----------|-----------|---------|
| GWP-total            | kg CO2 eq    | 1.47E+0 | 6.26E-2  | 1.34E-1  | 1.67E+0 | 1.94E-2  | 5.41E-1  | 6.21E-3  | -8.17E-1  | 1.42E+0 |
| GWP-f                | kg CO2 eq    | 1.46E+0 | 6.26E-2  | 1.30E-1  | 1.65E+0 | 1.94E-2  | 5.41E-1  | 6.21E-3  | -8.11E-1  | 1.41E+0 |
| GWP-b                | kg CO2 eq    | 1.16E-2 | -1.11E-5 | 3.70E-3  | 1.52E-2 | 1.18E-5  | -5.42E-4 | 7.65E-6  | -5.64E-3  | 9.09E-3 |
| GWP-luluc            | kg CO2 eq    | 1.20E-3 | 4.03E-5  | 1.05E-4  | 1.35E-3 | 6.87E-6  | 2.33E-4  | 1.64E-7  | -5.21E-4  | 1.07E-3 |
| ODP                  | kg CFC11 eq  | 7.77E-7 | 1.28E-8  | 1.23E-8  | 8.02E-7 | 4.47E-9  | 6.30E-8  | 2.29E-10 | -4.03E-7  | 4.67E-7 |
| AP                   | mol H+ eq    | 6.84E-3 | 1.80E-3  | 6.89E-4  | 9.33E-3 | 1.11E-4  | 1.08E-3  | 5.57E-6  | -3.07E-3  | 7.46E-3 |
| EP-fw                | kg P eq      | 6.54E-5 | 2.92E-7  | 1.79E-6  | 6.75E-5 | 1.60E-7  | 7.76E-6  | 7.36E-9  | -2.97E-5  | 4.57E-5 |
| EP-m                 | kg N eq      | 1.14E-3 | 4.49E-4  | 1.41E-4  | 1.73E-3 | 3.96E-5  | 2.61E-4  | 3.54E-6  | -5.30E-4  | 1.50E-3 |
| EP-T                 | mol N eq     | 1.25E-2 | 4.99E-3  | 1.52E-3  | 1.90E-2 | 4.36E-4  | 2.88E-3  | 2.22E-5  | -5.64E-3  | 1.67E-2 |
| POCP                 | kg NMVOC eq  | 4.29E-3 | 1.30E-3  | 6.89E-4  | 6.28E-3 | 1.25E-4  | 8.63E-4  | 7.66E-6  | -1.97E-3  | 5.30E-3 |
| ADP-mm               | kg Sb eq     | 8.48E-4 | 6.25E-7  | 3.01E-6  | 8.52E-4 | 5.02E-7  | 4.25E-6  | 5.62E-9  | -1.65E-5  | 8.40E-4 |
| ADP-f                | MJ           | 3.74E+1 | 8.22E-1  | 1.44E+0  | 3.97E+1 | 2.98E-1  | 2.96E+0  | 1.67E-2  | -1.99E+1  | 2.31E+1 |
| WDP                  | m3 depriv.   | 2.38E+0 | 1.41E-3  | 4.48E-2  | 2.42E+0 | 9.15E-4  | 1.16E-1  | 1.21E-4  | -1.16E+0  | 1.38E+0 |
| PM                   | disease inc. | 4.58E-8 | 2.44E-9  | 4.66E-9  | 5.29E-8 | 1.75E-9  | 1.34E-8  | 1.15E-10 | -1.95E-8  | 4.87E-8 |
| IR                   | kBq U-235 eq | 8.11E-2 | 3.54E-3  | 3.70E-3  | 8.83E-2 | 1.30E-3  | 1.03E-2  | 7.66E-5  | -3.74E-2  | 6.26E-2 |
| ETP-fw               | CTUe         | 3.14E+1 | 5.52E-1  | 3.62E+0  | 3.56E+1 | 2.42E-1  | 2.25E+1  | 2.49E-1  | -1.12E+1  | 4.74E+1 |
| HTP-c                | CTUh         | 1.12E-9 | 3.44E-11 | 1.42E-10 | 1.30E-9 | 8.61E-12 | 3.37E-10 | 4.67E-13 | -4.25E-10 | 1.22E-9 |
| HTP-nc               | CTUh         | 3.56E-8 | 4.83E-10 | 8.43E-9  | 4.45E-8 | 2.88E-10 | 7.91E-9  | 4.82E-11 | -1.47E-8  | 3.80E-8 |
| SQP                  | Pt           | 4.87E+0 | 2.07E-1  | 4.77E-1  | 5.56E+0 | 2.55E-1  | 1.83E+0  | 4.27E-2  | -2.07E+0  | 5.62E+0 |
| Resource use         | Unit         | A1      | A2       | A3       | A1-A3   | C2       | C3       | C4       | D         | Total   |
| PERE                 | MJ           | 1.81E+0 | 6.55E-3  | 7.34E+0  | 9.16E+0 | 4.28E-3  | 2.13E-1  | 6.15E-4  | -8.43E-1  | 8.53E+0 |
| PERM                 | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PERT                 | MJ           | 1.81E+0 | 6.55E-3  | 7.34E+0  | 9.16E+0 | 4.28E-3  | 2.13E-1  | 6.15E-4  | -8.43E-1  | 8.53E+0 |
| PENRE                | MJ           | 4.01E+1 | 8.73E-1  | 1.53E+0  | 4.25E+1 | 3.16E-1  | 3.15E+0  | 1.77E-2  | -2.14E+1  | 2.46E+1 |
| PENRM                | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PENRT                | MJ           | 4.01E+1 | 8.73E-1  | 1.53E+0  | 4.25E+1 | 3.16E-1  | 3.15E+0  | 1.77E-2  | -2.14E+1  | 2.46E+1 |
| PET                  | MJ           | 4.19E+1 | 8.80E-1  | 8.86E+0  | 5.17E+1 | 3.21E-1  | 3.36E+0  | 1.84E-2  | -2.22E+1  | 3.32E+1 |
| 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           | 2.67E-2 | 5.09E-5  | 1.28E-3  | 2.80E-2 | 3.37E-5  | 3.19E-3  | 2.04E-5  | -1.22E-2  | 1.91E-2 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 1.29E-4 | 9.70E-7 | 1.44E-5 | 1.45E-4 | 7.62E-7 | 4.78E-6 | 2.04E-8 | -1.62E-5 | 1.34E-4 |
| NHWD                              | kg   | 1.43E-1 | 9.86E-3 | 2.93E-3 | 1.55E-1 | 1.85E-2 | 1.09E-1 | 7.39E-2 | -6.18E-2 | 2.95E-1 |
| RWD                               | kg   | 7.21E-5 | 5.70E-6 | 3.83E-6 | 8.16E-5 | 2.03E-6 | 1.11E-5 | 1.09E-7 | -3.30E-5 | 6.18E-5 |
| 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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