

# Environmental Profile

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

Ecochain v3.5.71



Product: 3037948 - OsmaS PVCU Pipe BK 160 L=4 P/E  
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    | 1.07E+1  | 5.46E-1  | 1.34E+0 | 1.26E+1  | 2.76E-1  | 1.00E+1 | 7.94E-2  | -5.32E+0 | 1.76E+1 |
| GWP-f                | kg CO2 eq    | 1.26E+1  | 5.46E-1  | 1.29E+0 | 1.44E+1  | 2.76E-1  | 7.78E+0 | 7.94E-2  | -5.29E+0 | 1.72E+1 |
| GWP-b                | kg CO2 eq    | -1.88E+0 | -4.08E-5 | 5.35E-2 | -1.82E+0 | 1.67E-4  | 2.25E+0 | 1.03E-4  | -2.65E-2 | 3.97E-1 |
| GWP-luluc            | kg CO2 eq    | 1.24E-2  | 3.31E-4  | 7.78E-4 | 1.35E-2  | 9.76E-5  | 3.34E-3 | 2.11E-6  | -2.78E-3 | 1.42E-2 |
| ODP                  | kg CFC11 eq  | 6.03E-6  | 1.14E-7  | 1.48E-7 | 6.29E-6  | 6.35E-8  | 9.05E-7 | 3.16E-9  | -2.02E-6 | 5.24E-6 |
| AP                   | mol H+ eq    | 5.94E-2  | 1.41E-2  | 6.21E-3 | 7.97E-2  | 1.57E-3  | 1.56E-2 | 7.59E-5  | -1.63E-2 | 8.08E-2 |
| EP-fw                | kg P eq      | 6.09E-4  | 2.80E-6  | 1.68E-5 | 6.29E-4  | 2.27E-6  | 1.11E-4 | 9.56E-8  | -1.43E-4 | 6.00E-4 |
| EP-m                 | kg N eq      | 1.03E-2  | 3.55E-3  | 1.48E-3 | 1.53E-2  | 5.62E-4  | 3.83E-3 | 4.67E-5  | -3.11E-3 | 1.66E-2 |
| EP-T                 | mol N eq     | 1.13E-1  | 3.94E-2  | 1.55E-2 | 1.68E-1  | 6.19E-3  | 4.23E-2 | 3.04E-4  | -3.48E-2 | 1.82E-1 |
| POCP                 | kg NMVOC eq  | 3.75E-2  | 1.03E-2  | 7.89E-3 | 5.57E-2  | 1.77E-3  | 1.26E-2 | 1.03E-4  | -1.13E-2 | 5.89E-2 |
| ADP-mm               | kg Sb eq     | 3.55E-3  | 6.58E-6  | 2.21E-5 | 3.58E-3  | 7.13E-6  | 6.11E-5 | 7.51E-8  | -7.66E-5 | 3.57E-3 |
| ADP-f                | MJ           | 3.13E+2  | 7.33E+0  | 1.42E+1 | 3.34E+2  | 4.23E+0  | 4.25E+1 | 2.30E-1  | -1.17E+2 | 2.64E+2 |
| WDP                  | m3 depriv.   | 1.83E+1  | 1.41E-2  | 4.93E-1 | 1.88E+1  | 1.30E-2  | 1.67E+0 | 1.22E-3  | -5.43E+0 | 1.51E+1 |
| PM                   | disease inc. | 5.29E-7  | 2.49E-8  | 4.01E-8 | 5.94E-7  | 2.49E-8  | 1.94E-7 | 1.57E-9  | -1.11E-7 | 7.04E-7 |
| IR                   | kBq U-235 eq | 7.98E-1  | 3.16E-2  | 4.28E-2 | 8.72E-1  | 1.85E-2  | 1.49E-1 | 1.06E-3  | -1.83E-1 | 8.58E-1 |
| ETP-fw               | CTUe         | 2.59E+2  | 5.07E+0  | 2.96E+1 | 2.93E+2  | 3.44E+0  | 3.22E+2 | 3.55E+0  | -6.35E+1 | 5.59E+2 |
| HTP-c                | CTUh         | 9.20E-9  | 2.93E-10 | 1.17E-9 | 1.07E-8  | 1.22E-10 | 4.72E-9 | 5.98E-12 | -2.20E-9 | 1.33E-8 |
| HTP-nc               | CTUh         | 2.75E-7  | 4.72E-9  | 9.94E-8 | 3.79E-7  | 4.10E-9  | 1.13E-7 | 6.80E-10 | -7.30E-8 | 4.24E-7 |
| SQP                  | Pt           | 2.52E+2  | 2.51E+0  | 4.09E+0 | 2.58E+2  | 3.62E+0  | 2.64E+1 | 5.85E-1  | -5.39E+1 | 2.35E+2 |
| Resource use         | Unit         | A1       | A2       | A3      | A1-A3    | C2       | C3      | C4       | D        | Total   |
| PERE                 | MJ           | 4.81E+1  | 6.54E-2  | 5.19E+1 | 1.00E+2  | 6.07E-2  | 3.06E+0 | 8.41E-3  | -1.28E+1 | 9.05E+1 |
| PERM                 | MJ           | 0        | 0        | 0       | 0        | 0        | 0       | 0        | 0        | 0       |
| PERT                 | MJ           | 4.81E+1  | 6.54E-2  | 5.19E+1 | 1.00E+2  | 6.07E-2  | 3.06E+0 | 8.41E-3  | -1.28E+1 | 9.05E+1 |
| PENRE                | MJ           | 3.35E+2  | 7.78E+0  | 1.50E+1 | 3.58E+2  | 4.49E+0  | 4.52E+1 | 2.44E-1  | -1.27E+2 | 2.81E+2 |
| PENRM                | MJ           | 0        | 0        | 0       | 0        | 0        | 0       | 0        | 0        | 0       |
| PENRT                | MJ           | 3.35E+2  | 7.78E+0  | 1.50E+1 | 3.58E+2  | 4.49E+0  | 4.52E+1 | 2.44E-1  | -1.27E+2 | 2.81E+2 |
| PET                  | MJ           | 3.83E+2  | 7.85E+0  | 6.70E+1 | 4.58E+2  | 4.55E+0  | 4.82E+1 | 2.52E-1  | -1.39E+2 | 3.72E+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           | 2.19E-1  | 5.10E-4  | 1.33E-2 | 2.33E-1  | 4.79E-4  | 4.58E-2 | 2.82E-4  | -5.82E-2 | 2.21E-1 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 6.57E-4 | 1.02E-5 | 2.03E-4 | 8.70E-4 | 1.08E-5 | 6.86E-5 | 2.76E-7 | -1.07E-4 | 8.43E-4 |
| NHWD                              | kg   | 1.38E+0 | 1.42E-1 | 4.01E-2 | 1.57E+0 | 2.62E-1 | 1.61E+0 | 1.05E+0 | -3.12E-1 | 4.17E+0 |
| RWD                               | kg   | 7.08E-4 | 5.07E-5 | 5.38E-5 | 8.12E-4 | 2.88E-5 | 1.60E-4 | 1.50E-6 | -1.66E-4 | 8.36E-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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