

# Environmental Profile

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

Ecochain v3.5.71



Product: 3037232 - OsmaD Inlet Hopper-Deep BN 110 P/E  
Unit: 1 piece  
Manufacturer: Wavin - UK - Chippenham - Verified

Wavin OsmaDrain - the definitive & comprehensive PVC-U gravity drainage system for residential, commercial & industrial projects. The source for all types of gravity drainage, sewer installation & pressure pipe systems in any private or public development. One of the UK's most trusted & leading names in plastic drainage systems.

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    | 1.85E+0 | 7.50E-2  | 1.92E-1  | 2.12E+0 | 2.46E-2  | 6.82E-1  | 8.08E-3  | -1.04E+0  | 1.79E+0 |
| GWP-f                | kg CO2 eq    | 1.84E+0 | 7.50E-2  | 1.87E-1  | 2.10E+0 | 2.45E-2  | 6.83E-1  | 8.08E-3  | -1.04E+0  | 1.78E+0 |
| GWP-b                | kg CO2 eq    | 1.50E-2 | -1.28E-5 | 4.51E-3  | 1.95E-2 | 1.49E-5  | -7.03E-4 | 9.71E-6  | -6.85E-3  | 1.20E-2 |
| GWP-luluc            | kg CO2 eq    | 1.42E-3 | 4.82E-5  | 1.63E-4  | 1.63E-3 | 8.68E-6  | 2.86E-4  | 2.03E-7  | -6.20E-4  | 1.30E-3 |
| ODP                  | kg CFC11 eq  | 9.20E-7 | 1.54E-8  | 1.64E-8  | 9.52E-7 | 5.65E-9  | 7.60E-8  | 2.89E-10 | -4.68E-7  | 5.66E-7 |
| AP                   | mol H+ eq    | 8.33E-3 | 2.15E-3  | 1.02E-3  | 1.15E-2 | 1.40E-4  | 1.33E-3  | 7.01E-6  | -3.82E-3  | 9.15E-3 |
| EP-fw                | kg P eq      | 7.76E-5 | 3.52E-7  | 2.61E-6  | 8.06E-5 | 2.02E-7  | 9.47E-6  | 9.18E-9  | -3.53E-5  | 5.49E-5 |
| EP-m                 | kg N eq      | 1.40E-3 | 5.35E-4  | 1.98E-4  | 2.13E-3 | 5.00E-5  | 3.23E-4  | 4.33E-6  | -6.61E-4  | 1.85E-3 |
| EP-T                 | mol N eq     | 1.53E-2 | 5.94E-3  | 2.16E-3  | 2.34E-2 | 5.51E-4  | 3.57E-3  | 2.80E-5  | -7.06E-3  | 2.05E-2 |
| POCP                 | kg NMVOC eq  | 5.35E-3 | 1.55E-3  | 9.37E-4  | 7.83E-3 | 1.58E-4  | 1.07E-3  | 9.72E-6  | -2.53E-3  | 6.54E-3 |
| ADP-mm               | kg Sb eq     | 9.60E-4 | 7.57E-7  | 4.70E-6  | 9.66E-4 | 6.35E-7  | 5.24E-6  | 7.04E-9  | -1.96E-5  | 9.52E-4 |
| ADP-f                | MJ           | 4.89E+1 | 9.86E-1  | 2.07E+0  | 5.20E+1 | 3.77E-1  | 3.66E+0  | 2.11E-2  | -2.61E+1  | 3.00E+1 |
| WDP                  | m3 depriv.   | 2.89E+0 | 1.71E-3  | 6.20E-2  | 2.96E+0 | 1.16E-3  | 1.41E-1  | 1.39E-4  | -1.39E+0  | 1.70E+0 |
| PM                   | disease inc. | 5.64E-8 | 2.95E-9  | 6.99E-9  | 6.64E-8 | 2.21E-9  | 1.67E-8  | 1.45E-10 | -2.49E-8  | 6.06E-8 |
| IR                   | kBq U-235 eq | 9.56E-2 | 4.24E-3  | 5.02E-3  | 1.05E-1 | 1.65E-3  | 1.27E-2  | 9.68E-5  | -4.46E-2  | 7.48E-2 |
| ETP-fw               | CTUe         | 3.66E+1 | 6.63E-1  | 5.50E+0  | 4.28E+1 | 3.06E-1  | 2.69E+1  | 2.97E-1  | -1.33E+1  | 5.70E+1 |
| HTP-c                | CTUh         | 1.32E-9 | 4.12E-11 | 2.16E-10 | 1.57E-9 | 1.09E-11 | 4.15E-10 | 5.76E-13 | -5.07E-10 | 1.49E-9 |
| HTP-nc               | CTUh         | 4.21E-8 | 5.83E-10 | 1.13E-8  | 5.41E-8 | 3.65E-10 | 9.63E-9  | 5.79E-11 | -1.74E-8  | 4.67E-8 |
| SQP                  | Pt           | 5.64E+0 | 2.53E-1  | 7.16E-1  | 6.61E+0 | 3.22E-1  | 2.29E+0  | 5.39E-2  | -2.47E+0  | 6.82E+0 |
| Resource use         | Unit         | A1      | A2       | A3       | A1-A3   | C2       | C3       | C4       | D         | Total   |
| PERE                 | MJ           | 2.16E+0 | 7.91E-3  | 1.16E+1  | 1.37E+1 | 5.40E-3  | 2.61E-1  | 7.82E-4  | -1.01E+0  | 1.30E+1 |
| PERM                 | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PERT                 | MJ           | 2.16E+0 | 7.91E-3  | 1.16E+1  | 1.37E+1 | 5.40E-3  | 2.61E-1  | 7.82E-4  | -1.01E+0  | 1.30E+1 |
| PENRE                | MJ           | 5.25E+1 | 1.05E+0  | 2.20E+0  | 5.57E+1 | 4.00E-1  | 3.89E+0  | 2.24E-2  | -2.81E+1  | 3.20E+1 |
| PENRM                | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PENRT                | MJ           | 5.25E+1 | 1.05E+0  | 2.20E+0  | 5.57E+1 | 4.00E-1  | 3.89E+0  | 2.24E-2  | -2.81E+1  | 3.20E+1 |
| PET                  | MJ           | 5.46E+1 | 1.05E+0  | 1.38E+1  | 6.95E+1 | 4.05E-1  | 4.16E+0  | 2.32E-2  | -2.91E+1  | 4.49E+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           | 3.21E-2 | 6.15E-5  | 1.82E-3  | 3.40E-2 | 4.26E-5  | 3.87E-3  | 2.58E-5  | -1.48E-2  | 2.31E-2 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 1.49E-4 | 1.17E-6 | 1.78E-5 | 1.68E-4 | 9.63E-7 | 5.90E-6 | 2.57E-8 | -1.94E-5 | 1.56E-4 |
| NHWD                              | kg   | 1.68E-1 | 1.22E-2 | 3.67E-3 | 1.84E-1 | 2.33E-2 | 1.36E-1 | 9.33E-2 | -7.37E-2 | 3.63E-1 |
| RWD                               | kg   | 8.43E-5 | 6.83E-6 | 4.73E-6 | 9.58E-5 | 2.56E-6 | 1.37E-5 | 1.37E-7 | -3.93E-5 | 7.29E-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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