

# Environmental Profile

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

Ecochain v3.5.64



Product: 3053560 - SafeTech RCn PotW Pp 63x5.8 L=100 BC  
Unit: 1 piece  
Manufacturer: Wavin - DE - Westeregeln - verified  
Address: Borrweg 10  
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Germany  
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: 11-08-2022  
End of validity: 11-08-2027  
Verifier: Martijn van Hövell - SGS Search



Wavin SafeTech RC n is a co-extruded PE-100 RC two-layer pipe with protective properties according to PAS 1075. The outer signal layer is about 10% of the standard wall thickness and is colored according to the medium - blue for drinking water, orange for gas and green for waste water.

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 - DE - Westeregeln - 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 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]

## 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    | 2.13E+2 | 8.96E+0 | 4.37E+0 | 2.27E+2 | 2.80E+0 | 9.10E+1  | 1.55E+0  | -1.40E+2 | 1.82E+2 |
| GWP-f                | kg CO2 eq    | 2.12E+2 | 8.95E+0 | 3.59E+0 | 2.25E+2 | 2.80E+0 | 9.11E+1  | 1.55E+0  | -1.40E+2 | 1.81E+2 |
| GWP-b                | kg CO2 eq    | 1.04E+0 | 4.13E-3 | 3.70E-1 | 1.42E+0 | 1.70E-3 | -1.12E-1 | 1.16E-3  | -5.30E-1 | 7.79E-1 |
| GWP-luluc            | kg CO2 eq    | 6.45E-2 | 3.28E-3 | 4.16E-1 | 4.84E-1 | 9.89E-4 | 1.57E-2  | 2.22E-5  | -3.18E-2 | 4.69E-1 |
| ODP                  | kg CFC11 eq  | 1.10E-5 | 1.98E-6 | 4.70E-7 | 1.35E-5 | 6.44E-7 | 2.04E-6  | 3.30E-8  | -6.70E-6 | 9.47E-6 |
| AP                   | mol H+ eq    | 7.94E-1 | 5.19E-2 | 2.13E-2 | 8.68E-1 | 1.59E-2 | 8.59E-2  | 7.88E-4  | -3.87E-1 | 5.83E-1 |
| EP-fw                | kg P eq      | 3.54E-3 | 9.03E-5 | 8.14E-5 | 3.71E-3 | 2.30E-5 | 4.53E-4  | 1.02E-6  | -1.74E-3 | 2.44E-3 |
| EP-m                 | kg N eq      | 1.33E-1 | 1.83E-2 | 4.37E-3 | 1.55E-1 | 5.70E-3 | 2.50E-2  | 5.58E-4  | -7.07E-2 | 1.16E-1 |
| EP-T                 | mol N eq     | 1.48E+0 | 2.02E-1 | 4.40E-2 | 1.73E+0 | 6.28E-2 | 2.75E-1  | 3.20E-3  | -7.87E-1 | 1.28E+0 |
| POCP                 | kg NMVOC eq  | 7.07E-1 | 5.76E-2 | 1.27E-2 | 7.77E-1 | 1.79E-2 | 8.70E-2  | 1.25E-3  | -3.67E-1 | 5.17E-1 |
| ADP-mm               | kg Sb eq     | 2.07E-3 | 2.27E-4 | 1.06E-4 | 2.40E-3 | 7.23E-5 | 3.40E-4  | 7.91E-7  | -9.03E-4 | 1.91E-3 |
| ADP-f                | MJ           | 7.51E+3 | 1.35E+2 | 4.21E+1 | 7.69E+3 | 4.29E+1 | 2.72E+2  | 2.41E+0  | -4.19E+3 | 3.82E+3 |
| WDP                  | m3 depriv.   | 1.64E+2 | 4.83E-1 | 2.41E+1 | 1.88E+2 | 1.32E-1 | 5.35E+0  | 1.11E-2  | -8.14E+1 | 1.12E+2 |
| PM                   | disease inc. | 7.44E-6 | 8.04E-7 | 1.90E-7 | 8.43E-6 | 2.52E-7 | 1.41E-6  | 1.66E-8  | -3.06E-6 | 7.05E-6 |
| IR                   | kBq U-235 eq | 6.34E+0 | 5.65E-1 | 1.13E-1 | 7.02E+0 | 1.88E-1 | 8.21E-1  | 1.12E-2  | -2.53E+0 | 5.51E+0 |
| ETP-fw               | CTUe         | 1.37E+3 | 1.20E+2 | 1.04E+2 | 1.59E+3 | 3.48E+1 | 3.09E+2  | 2.13E+0  | -6.09E+2 | 1.33E+3 |
| HTP-c                | CTUh         | 5.65E-8 | 3.90E-9 | 3.85E-9 | 6.42E-8 | 1.24E-9 | 3.67E-8  | 5.86E-11 | -2.90E-8 | 7.32E-8 |
| HTP-nc               | CTUh         | 1.34E-6 | 1.32E-7 | 9.91E-8 | 1.57E-6 | 4.15E-8 | 4.64E-7  | 1.35E-9  | -6.48E-7 | 1.43E-6 |
| SQP                  | Pt           | 2.86E+2 | 1.17E+2 | 4.05E+0 | 4.07E+2 | 3.67E+1 | 2.18E+2  | 6.19E+0  | -1.33E+2 | 5.35E+2 |
| Resource use         | Unit         | A1      | A2      | A3      | A1-A3   | C2      | C3       | C4       | D        | Total   |
| PERE                 | MJ           | 1.22E+2 | 1.69E+0 | 2.24E+2 | 3.48E+2 | 6.16E-1 | 1.34E+1  | 9.55E-2  | -6.06E+1 | 3.02E+2 |
| PERM                 | MJ           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| PERT                 | MJ           | 1.22E+2 | 1.69E+0 | 2.24E+2 | 3.48E+2 | 6.16E-1 | 1.34E+1  | 9.55E-2  | -6.06E+1 | 3.02E+2 |
| PENRE                | MJ           | 8.06E+3 | 1.43E+2 | 4.50E+1 | 8.25E+3 | 4.56E+1 | 2.90E+2  | 2.56E+0  | -4.52E+3 | 4.06E+3 |
| PENRM                | MJ           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| PENRT                | MJ           | 8.06E+3 | 1.43E+2 | 4.50E+1 | 8.25E+3 | 4.56E+1 | 2.90E+2  | 2.56E+0  | -4.52E+3 | 4.06E+3 |
| PET                  | MJ           | 8.18E+3 | 1.45E+2 | 2.69E+2 | 8.60E+3 | 4.62E+1 | 3.04E+2  | 2.66E+0  | -4.58E+3 | 4.37E+3 |
| 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           | 2.49E+0 | 1.64E-2 | 5.72E-1 | 3.07E+0 | 4.86E-3 | 1.57E-1  | 2.98E-3  | -1.24E+0 | 1.99E+0 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 1.02E-3 | 3.42E-4 | 6.80E-5 | 1.43E-3 | 1.10E-4 | 4.44E-4 | 2.90E-6 | -1.23E-3 | 7.51E-4 |
| NHWD                              | kg   | 7.02E+0 | 8.56E+0 | 8.55E-2 | 1.57E+1 | 2.66E+0 | 1.34E+1 | 1.06E+1 | -3.42E+0 | 3.89E+1 |
| RWD                               | kg   | 6.80E-3 | 8.86E-4 | 1.63E-4 | 7.85E-3 | 2.92E-4 | 1.04E-3 | 1.58E-5 | -2.35E-3 | 6.85E-3 |
| 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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