

## Life Cycle Assessment (LCA) for Diamond Oil Active

The Life Cycle Assessment (LCA) of Diamond Oil Active evaluates its environmental impact from Cradle-to-Gate (A1–A3). This includes raw material extraction and processing (A1), transportation to the manufacturing site (A2), and the production process (A3). The study follows internationally recognized LCA methodologies and standards, including ISO 14040, ISO 14044, ISO 14025, and, where relevant, EN 15804+A2 and PCR 2019.

The assessment carried out using Ecochain software, Mobius (version 1.0.198) and Eco invent 3.8, with system boundaries limited to Cradle-to-Gate (A1–A3). The functional unit is set at 1 kg of product, ensuring comparability with other LCA studies.

| Impact categories                                     | Unit                      | A1       | A2       | A3       | Total    |
|-------------------------------------------------------|---------------------------|----------|----------|----------|----------|
| <b>Sum of Climate change</b>                          | kg CO <sub>2</sub><br>eq. | 1.55E+00 | 4.55E-02 | 4.66E-01 | 2.06E+00 |
| <b>Sum of Climate change - Biogenic</b>               | kg CO <sub>2</sub><br>eq. | 6.27E-03 | 1.68E-05 | 5.28E-04 | 6.81E-03 |
| <b>Sum of Climate change - Fossil</b>                 | kg CO <sub>2</sub><br>eq. | 1.49E+00 | 4.55E-02 | 4.66E-01 | 2.00E+00 |
| <b>Sum of Climate change - Land use and LU change</b> | kg CO <sub>2</sub><br>eq. | 4.86E-02 | 1.85E-05 | 2.34E-04 | 4.88E-02 |
| <b>Sum of Ozone depletion</b>                         | kg CFC11<br>eq.           | 1.68E-07 | 1.07E-08 | 4.56E-08 | 2.25E-07 |
| <b>Sum of Acidification</b>                           | mol H <sup>+</sup><br>eq. | 2.81E-02 | 2.58E-04 | 8.94E-04 | 2.92E-02 |
| <b>Sum of Eutrophication, freshwater</b>              | kg P eq.                  | 2.45E-04 | 3.35E-07 | 1.46E-05 | 2.60E-04 |
| <b>Sum of Eutrophication, marine</b>                  | kg N<br>eq.               | 2.40E-02 | 9.27E-05 | 1.54E-04 | 2.42E-02 |
| <b>Sum of Eutrophication, terrestrial</b>             | mol N<br>eq.              | 1.15E-01 | 1.02E-03 | 1.73E-03 | 1.18E-01 |
| <b>Sum of Photochemical ozone formation</b>           | kg NMVO<br>C eq.          | 7.00E-03 | 2.92E-04 | 4.74E-04 | 7.76E-03 |
| <b>Sum of Resource use, minerals and metals</b>       | kg Sb<br>eq.              | 1.86E-05 | 1.52E-07 | 8.77E-07 | 1.96E-05 |
| <b>Sum of Resource use, fossils</b>                   | MJ                        | 1.66E+01 | 7.00E-01 | 3.08E+00 | 2.04E+01 |
| <b>Sum of Water use</b>                               | m <sup>3</sup>            | 1.80E+00 | 2.30E-03 | 6.30E-02 | 1.86E+00 |
| <b>Sum of Particulate matter</b>                      | diseas<br>e inc.          | 2.49E-07 | 5.02E-09 | 6.19E-09 | 2.60E-07 |

|                                                       |                             |          |          |          |          |
|-------------------------------------------------------|-----------------------------|----------|----------|----------|----------|
| <b>Sum of Ionising radiation</b>                      | kBq<br>U <sub>235</sub> eq. | 4.67E-02 | 3.04E-03 | 1.97E-02 | 6.94E-02 |
| <b>Sum of Ecotoxicity, freshwater</b>                 | CTUe                        | 7.68E+01 | 5.54E-01 | 7.64E+00 | 8.50E+01 |
| <b>Sum of Human toxicity, cancer</b>                  | CTUh                        | 2.90E-09 | 2.21E-11 | 2.47E-10 | 3.17E-09 |
| <b>Sum of Human toxicity, non-cancer</b>              | CTUh                        | 1.13E-07 | 6.39E-10 | 3.28E-09 | 1.17E-07 |
| <b>Sum of Human toxicity, non-cancer - inorganics</b> | CTUh                        | 1.23E-08 | 1.25E-10 | 1.38E-09 | 1.38E-08 |
| <b>Sum of Human toxicity, non-cancer - metals</b>     | CTUh                        | 9.98E-08 | 4.40E-10 | 1.85E-09 | 1.02E-07 |
| <b>Sum of Human toxicity, non-cancer - organics</b>   | CTUh                        | 1.48E-09 | 7.52E-11 | 5.91E-11 | 1.61E-09 |
| <b>Sum of Land use</b>                                | Pt                          | 2.20E+02 | 5.97E-01 | 5.84E-01 | 2.22E+02 |

