# Product Specification

**Product Name:** EXALTOLIDE® TOTAL  
**Vigon Code:** 502775  
**CAS Number:** 106-02-5  
**FEMA Number:** 2840

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid Value</td>
<td>0.000 – 3.000</td>
</tr>
<tr>
<td>Purity %</td>
<td>92.00 – 100.00</td>
</tr>
<tr>
<td>Gas Chromatograph</td>
<td>PASSES TEST</td>
</tr>
<tr>
<td>Odor</td>
<td>MUSK ODOR.</td>
</tr>
<tr>
<td>Color/appearance</td>
<td>WHITE TO PALE YELLOW SOLID.</td>
</tr>
</tbody>
</table>

---

**Additional Product Information:**  
**Flash Point:** >200 °F  
**Shelf Life:** 18 Months  
**Storage Conditions:** Stable when stored in its original package, tightly sealed in a cool (46-90°F) and dry location out of direct heat and light. If product is congealed, heat gently, melt completely, and mix before use. Prolonged heat can impact product quality.  
**Effective Date:** March 3, 2023  

---

**Printed Date:** July 5, 2023
1. IDENTIFICATION

Product Description: EXALTOLIDE® TOTAL

CAS # 106-02-5

FEMA Number 2840

Other means of identification
Vigon Item # 502775

Recommended use Concentrated aromatic and flavor ingredient which may be used in flavor and fragrance compounds according to legal and IFRA or FEMA GRAS/FDA guidelines.

Recommended restrictions For Manufacturing Use Only

Company Vigon International, Inc.

Address 127 Airport Road
E. Stroudsburg, PA 18301

For information call: 570-476-6300

Web Site: www.vigon.com

Manufacturer/Importer/Supplier/Distributor information

Company name Vigon International, Inc.
Address 127 Airport Road
E. Stroudsburg, PA 18301
United States

Telephone For information call: 570-476-6300
Website www.vigon.com
E-mail Not available.

Emergency phone number INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

2. HAZARD(S) IDENTIFICATION

Physical hazards Not classified.

Health hazards Skin corrosion/irritation Category 3
Sensitization, skin Category 1

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1
Hazardous to the aquatic environment, long-term hazard Category 1

Label elements
SAFETY DATA SHEET
502775 EXALTOLIDE® TOTAL

Revision Date: 10-22-2018
Page 2 of 11
Version # 03
Print Date: 10-22-2018

Signal word
Warning

Hazard statement
Causes mild skin irritation. May cause an allergic skin reaction. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves.

Response
IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Collect spillage.

Storage
Store away from incompatible materials.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
None known.

Supplemental information
None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>16- oxacyclohexadecan-1-one</td>
<td>PENTADECALACTONE Oxacyclohexadecan-2-one Pentadecan-15-olide OMEGA-PENTADECALACTONE</td>
<td>106-02-5</td>
<td>100</td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Inhalation
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.

Skin contact
Take off immediately all contaminated clothing. Get medical attention if irritation develops and persists. Wash skin thoroughly with soap and water for several minutes.

Eye contact
Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Promptly wash eyes with plenty of water while lifting the eye lids.

Ingestion
Call a physician or poison control center immediately. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Most important symptoms/effects, acute and delayed
Mild skin irritation. May cause an allergic skin reaction. Dermatitis. Rash.

Indication of immediate medical attention and special treatment needed
Not available.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water spray, fog, CO2, dry chemical, or alcohol resistant foam.
### SAFETY DATA SHEET

#### 502775 EXALTOLIDE® TOTAL

<table>
<thead>
<tr>
<th>Revision Date: 10-22-2018</th>
<th>Page 3 of 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version # 03</td>
<td>Print Date: 10-22-2018</td>
</tr>
</tbody>
</table>

#### Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

#### Specific hazards arising from the chemical
Fire may produce irritating, corrosive and/or toxic gases.

#### Special protective equipment and precautions for firefighters
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear self-contained breathing apparatus with a full facempiece operated in the positive pressure demand mode when fighting fires.

#### Fire fighting equipment/instructions
In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage. Ventilate closed spaces before entering them. Keep run-off water out of sewers and water sources. Dike for water control.

#### Specific methods
Use water spray to cool unopened containers.

#### General fire hazards
Static charges generated by emptying package in or near flammable vapor may cause flash fire.

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

#### Methods and materials for containment and cleaning up
Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps.

The product is immiscible with water and will spread on the water surface.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Prevent product from entering drains. Absorb in vermiculite, dry sand or earth and place into containers.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Collect and dispose of spillage as indicated in section 13 of the SDS.

#### Environmental precautions
Retain and dispose of contaminated wash water. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

### 7. HANDLING AND STORAGE

#### Precautions for safe handling
Do not handle or store near an open flame, heat or other sources of ignition. Take precautionary measures against static discharge. All equipment used when handling the product must be grounded. Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wash thoroughly after handling.

#### Conditions for safe storage, including any incompatibilities
Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area.
SAFETY DATA SHEET

502775 EXALTOLIDE® TOTAL

Revision Date: 10-22-2018
Version # 03

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits: This substance has no PEL, TLV, or other recommended exposure limit.

Biological limit values: No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls: Use explosion-proof ventilation equipment to stay below exposure limits. Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment:

- **Eye/face protection**: Wear safety glasses with side shields (or goggles). Face shield is recommended.
- **Skin protection**:
  - **Hand protection**: Chemical resistant gloves.
  - **Other**: Use of an impervious apron is recommended.
- **Respiratory protection**: Respiratory protection not required. If ventilation is insufficient, suitable respiratory protection must be provided.
- **Thermal hazards**: Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Refer to Spec Sheet</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Form</td>
<td>Solid</td>
</tr>
<tr>
<td>Color</td>
<td>Refer to Spec Sheet</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>93.2 - 100.4 °F (34 - 38 °C)</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>278.6 °F (137 °C) at 2 mmHg</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 200.0 °F (&gt; 93.3 °C) Closed Cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>1 mm Hg at 20 °C</td>
</tr>
</tbody>
</table>

Refer to Spec Sheet

Not available.
Vapor density 8.3
Relative density Not available.
Solubility(ies)
  Solubility (water) Insoluble
Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.
Other information
  Density 990.00 kg/m³ at 22 °C
  Explosive properties Not explosive.
  Flammability class Combustible IIB estimated
  Molecular formula C15H28O2
  Molecular weight 240.39 g/mol
  Oxidizing properties Not oxidizing.

10. STABILITY AND REACTIVITY
Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.
Conditions to avoid Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials Strong oxidizing agents.
Hazardous decomposition products No hazardous decomposition products if stored and handled as indicated.

11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure
  Inhalation No adverse effects due to inhalation are expected.
  Skin contact Causes mild skin irritation. May cause an allergic skin reaction.
  Eye contact Direct contact with eyes may cause temporary irritation. Causes mild eye irritation.
  Ingestion Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics
Information on toxicological effects
Acute toxicity
SAFETY DATA SHEET

502775 EXALTOLIDE® TOTAL

Revision Date: 10-22-2018
Page 6 of 11
Version # 03
Print Date: 10-22-2018

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-oxacyclohexadecan-1-one (CAS 106-02-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritation (dermal, rabbit)(LD50 study): slight irritant @ 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritation (dermal, mouse)(phototoxicity study): Non irritant @ 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritation (dermal, pig)(phototoxicity study): Non irritant @ 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritation (dermal)(Human max.): Non irritant @ 4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritation (dermal, human)(single patch): Non irritant @ 10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritation (ocular, rabbit) (OECD 405): Non irritant @ 0.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin sensitization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitization (HRIPT): Non sensitizing @ 2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensitization (Human max.): Non sensitizing @ 10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo-toxicity (rabbit): Effects @ 10%, no effects @ 5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo-toxicity (guinea pig): Effects @ 50%, no effects @ 10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo-toxicity (guinea pig): No effects @ 20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo-toxicity (mouse): No effects @ 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo-toxicity (pig): No effects @ 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td></td>
<td>Mutagenicity (OECD 471): Non mutagenic (5 tests)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Genotoxicity (micronucleus test)(OECD 474): No effects</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IARC Monographs. Overall Evaluation of Carcinogenicity</td>
<td>Not listed.</td>
<td></td>
</tr>
<tr>
<td>US. National Toxicology Program (NTP) Report on Carcinogens</td>
<td>Not listed.</td>
<td></td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td></td>
<td>This product is not expected to cause reproductive or developmental effects.</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td></td>
<td>Not an aspiration hazard.</td>
</tr>
</tbody>
</table>
12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-oxacyclohexadecan-1-one (CAS 106-02-5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Fish</td>
</tr>
</tbody>
</table>

Persistence and degradability

Readily biodegradability (OECD 301 F): readily biodegradable
Readily biodegradability (OECD 301 D): readily biodegradable
Readily biodegradability (OECD 301 B): readily biodegradable

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. DISPOSAL CONSIDERATIONS

Disposal instructions

Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations

Dispose in accordance with all applicable regulations.

Hazardous waste code

Not established.

Waste from residues / unused products

Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

UN number

3077

UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (16-oxacyclohexadecan-1-one)

Transport hazard class(es)

9

Subsidiary class(es)

-

Packing group

III

Environmental hazards

Yes

Labels required

9

ADR

UN number

3077

UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (16-oxacyclohexadecan-1-one)

Transport hazard class(es)

9
Subsidiary class(es) | -
---|---
Packing group | III
Environmental hazards | Yes
Labels required | 9

RID

<table>
<thead>
<tr>
<th>UN number</th>
<th>3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (16-oxacyclohexadecan-1-one)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>9</td>
</tr>
<tr>
<td>Subsidiary class(es)</td>
<td>-</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>Environmental Hazards</td>
<td>Yes</td>
</tr>
<tr>
<td>Labels required</td>
<td>9</td>
</tr>
</tbody>
</table>

DOT

BULK

<table>
<thead>
<tr>
<th>UN number</th>
<th>3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (16-oxacyclohexadecan-1-one)</td>
</tr>
<tr>
<td>Hazard class</td>
<td>9</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
</tr>
<tr>
<td>Packaging exceptions</td>
<td>155</td>
</tr>
<tr>
<td>Packaging bulk</td>
<td>240</td>
</tr>
<tr>
<td>Labels required</td>
<td>9</td>
</tr>
</tbody>
</table>

DOT

NON-BULK

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

<table>
<thead>
<tr>
<th>UN number</th>
<th>3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (16-oxacyclohexadecan-1-one)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>9</td>
</tr>
<tr>
<td>Subsidiary class(es)</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
</tr>
<tr>
<td>Labels required</td>
<td>9</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>
15. REGULATORY INFORMATION

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not available.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories
Acute toxicity (any route of exposure)
Respiratory or skin sensitization

SARA 313 (TRI reporting)
Not regulated.
SAFETY DATA SHEET

502775 EXALTOLIDE® TOTAL

Other federal regulations

- Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
  Not regulated.
- Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
  Not regulated.
- Safe Drinking Water Act (SDWA)
  Not regulated.

US state regulations

- California Proposition 65
  California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
  Not listed.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue date</td>
<td>06-06-2017</td>
</tr>
<tr>
<td>Revision date</td>
<td>10-22-2018</td>
</tr>
<tr>
<td>Version #</td>
<td>03</td>
</tr>
<tr>
<td>HMIS® ratings</td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>2</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Physical hazard</td>
<td>1</td>
</tr>
</tbody>
</table>

Disclaimer

Vigon International, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, and disposal and should not be considered as a guarantee or quality specification. This product has not been evaluated for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. Vigon International, Inc. has performed no testing on these products in e-cig/vaping applications. It is the sole responsibility of the individual(s) purchasing this product to assess its’ safety in the final application. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, disposal, and should not be considered as a guarantee or quality specification. The above information is based on data provided by and collected from recognized sources such as distributors, manufacturers, and technical groups and is considered to be accurate to the best of Vigon’s knowledge as of the date of this document. It is the responsibility of the user to review all safety information about this product and determine its safety and suitability in their own processes and operations. Appropriate warnings and safe handling procedures should be provided to all handlers and users, taking into account the intended use and the specific conditions and factors relating to such use in accordance with all applicable laws and regulations.
Revision information

Product and Company Identification: Alternate Trade Names
IDENTIFICATION: Recommended restrictions
HAZARD(S) IDENTIFICATION: Hazard statement
HAZARD(S) IDENTIFICATION: Response
COMPOSITION/INFORMATION ON INGREDIENTS: Component information
Physical & Chemical Properties: Multiple Properties
Toxicological Information: Toxicological Data
TOXICOLOGICAL INFORMATION: Carcinogenicity
Ecological Information: Ecotoxicity
REGULATORY INFORMATION: California Proposition 65
OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION: References
OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION: Disclaimer
**Kosher Certificate**

**Date:** June 12, 2023

**Kof-K ID:** K-0000507

**Certificate ID:** IBBZU-V6269

**Product Count:** 1

---

**Vigon International, LLC**

127 AIRPORT RD.

EAST STROUDSBURG, PA 18301 UNITED STATES

---

The following product(s) Manufactured By Vigon International, LLC are certified kosher with the listed restrictions.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Product Name</th>
<th>Status</th>
<th>Restriction</th>
<th>UKD#</th>
</tr>
</thead>
<tbody>
<tr>
<td>502775</td>
<td>EXALTOLIDE TOTAL</td>
<td>Parve</td>
<td>Kof-K symbol required</td>
<td>KFX6STT7XGQ</td>
</tr>
</tbody>
</table>

---

To verify or for the most up to date certificate please go to www.koshercertificate.com

201 The Plaza, Teaneck, NJ 07666 | Phone 201.837.0500 | fax 201.837.0126

---

**Rabbi Avram Ossey**

**Rabbinic Administrator**

---

Disclaimer: This certificate is the private property of KOF-K Kosher Supervision and cannot be reposted without the express permission of KOF-K Kosher Supervision.
This is to certify that the following product(s) have been produced under the supervision of the Islamic Food and Nutrition Council of America (IFANCA). The production facility as well as component ingredients have been reviewed and approved. The product(s) are in compliance with the halal requirements under Islamic laws.

Date: October 17, 2022
Document #: 6718.12506.II221664

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Product Code</th>
<th>Halal-ID</th>
<th>Product Certificate #</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXALTOLIDE® TOTAL</td>
<td>502775</td>
<td>B24647</td>
<td>HC-22VIAA39</td>
</tr>
</tbody>
</table>

Company Name & Address: Vigon International, LLC 127 Airport Road East Stroudsburg, Pennsylvania 18301 USA

This Certificate is valid until January 31, 2024 and subject to renewal at that time.
Food Grade Certification

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775
FEMA #: 2840

Vigon International, LLC. certifies that the above flavor or ingredient is Food Grade in accordance with at least one of the following recognized organizations:

- FDA/FEMA GRAS (Flavor and Extract Manufacturers Assoc. Generally Recognized as Safe)
- JECFA (Joint FAO/WHO Expert Committee on Food Additives)
- CoE (Council of Europe)
- FLAVIS (Assigned by EFSA – European Food Safety Authority)

As a US based company, we have included the FEMA Number on this certificate however, the remaining numbers can be provided upon request. We hereby certify that this flavor or ingredient is safe for its intended use in food.

Vigon International, LLC. may terminate this certification at any time upon written notice in which this certificate shall become null and void as to any material supplied after termination of this certification.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Allergen/Sensitive Agents Identification Sheet

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

* A check mark (✔) indicates the Allergen/Sensitive Agent is present. If blank it means that there is no Allergen/Sensitive present.

| ALLERGEN/SENSITIVE AGENTS                               |   *
|---------------------------------------------------------|--
| **CORN & CORN PRODUCTS**                                |   *
| Includes modified starch, hydrolyzed protein, sweeteners, sugars, spice carriers |   *
| **EGG & EGG PRODUCTS**                                  |   *
| liquid and powders                                      |   *
| **FISH**                                                |   *
| Includes any and all species of fresh and salt water fish |   *
| **GARLIC**                                              |   *
| Dehydrated, powdered, granules, and flakes              |   *
| **GLUTEN**                                              |   *
| Wheat, rye, barley, oats, flour, etc.                    |   *
| **MILK & DAIRY PRODUCTS**                               |   *
| Includes whey, lactose, cheese, casein, spice carriers, milk, cream, etc. |   *
| **MONOSODIUM GLUTAMATE**                                |   *
| **PEANUTS, PEANUT OIL & PEANUT DERIVED ITEMS**          |   *
| Peanut meal, flour & ground nuts, szechwan sauce, mandelona nuts, etc. |   *
| **SESAME SEEDS & SESAME OIL**                           |   *
| **CRUSTACEANS**                                         |   *
| Shrimp, lobster, rock lobster, crab, crayfish, and products made from them |   *
| **MOLLUSKS**                                            |   *
| Clams, mussels, oysters, scallops, and products made from them |   *
| **SOY**                                                 |   *
| Includes soya powder, protein, oil, lecithin, tofu       |   *
| **SULFITES**                                            |   *
| Includes sulfur dioxide, sodium dithionite, chemicals that lists sulfite, etc. |   *
| **TREE NUTS**                                           |   *
| Includes almonds, beechnuts, bazil nuts, nutmeg, cashews, chestnuts, etc. |   *
| **WHEAT**                                               |   *
| Includes hydrolyzed wheat protein, flour, gluten flour, starches |   *
| **MUSTARD & MUSTARD OIL**                               |   *
| **LUPIN**                                               |   *
| **CELERY**                                              |   *

Vigon International, LLC. follows Good Manufacturing Practices and has implemented HACCP systems. Our personnel are trained on the proper handling of allergenic materials.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
GMO Status Statement

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

Vigon International, LLC. declares that the product listed above is not derived from or produced using genetically modified organisms or their derivatives.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Ingredient Statement

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

CAS #: 106-02-5 16-oxacyclohexadecan-1-one 100%

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Vigon International, LLC. certifies that, to the best of our knowledge, the product listed above does not contribute to the nutritional value of flavors due to their extremely low usage levels and therefore falls under the nutritional labeling exemption defined in Section 101.9(a) and (j) of Title 21 of the Code of Federal Regulations.

Sincerely,

.

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Irradiation and Sewage Sludge Statement

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

Vigon International, LLC. declares that the product listed above has **not** been:

a) Exposed to Ionizing Radiation  
b) Derived from Sewage Sludge  
c) Treated with Ethyl Oxide

Vigon International, LLC. may terminate this statement at any time upon written notice in which this statement shall be null and void as to any material supplied after termination of the statement.

Sincerely,

Vigon Regulatory Department  
regulatory@vigon.com  
Date of Issue: July 5, 2023
Heavy Metals and Pesticide Statement

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

Vigon International, LLC. declares that, to the best of our knowledge and belief, all ingredients in the product listed above are listed as being generally recognized as safe (GRAS) by the Food and Drug administration (FDA) when used in accordance with the FDA's good manufacturing practices (GMP) and contain no residues of heavy metals and pesticides in excess of tolerances set by the FDA and the Environmental Protection Agency (EPA).

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Stabilizer Statement

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

Vigon International, LLC. declares that, to the best of our knowledge that the product listed above has not been treated with BHT, BHA, Tocopherols or any other stabilizer.

Vigon International, LLC. may terminate this statement at any time upon written notice in which this statement shall be null and void as to any material supplied after termination of the statement.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Continuing Product Guarantee

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

In accordance with the regulations promulgated under the Federal Food, Drug, and Cosmetic Act, Vigon International, LLC. hereby provides continuing guarantee for the item listed above.

The article(s) comprising each shipment or other delivery hereafter made by Vigon International, LLC. is hereby guaranteed, as of the date of shipment or delivery, to be, on such date, not adulterated or misbranded within the meaning of the Federal Food, Drug, and Cosmetic Act, and not an article which may not, under the provisions of section 404, 505, or 512 of the act, be introduced into interstate commerce.

The guarantee herein given shall be a continuing guarantee and shall remain in full force and effect until revoked in writing by the undersigned. This guarantee shall not limit or preclude the operation and effect of any and all provisions of any agreement(s) under which the articles covered by this guarantee are sold, and the provisions of such agreement(s) shall govern in the event of any conflict or inconsistency herewith. Supplier's liability for breach of this guarantee shall in no event exceed the value of such of the articles of the supplier shipped to or on the order of Purchaser hereunder as may fail to comply with this guarantee.

This guarantee shall be void and of no effect in any instance where the particular use by Purchaser of any article to which this guarantee would otherwise apply is a use which is not in accordance with the requirements of the Federal Food, Drug and Cosmetic Act. Any and all prior guarantees and/or indemnity agreements heretofore given by supplier, are hereby revoked.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Dietary Preferences & Restrictions

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

Vigon International, LLC. certifies that the product listed above is suitable for consumption by:

<table>
<thead>
<tr>
<th>Preferences</th>
<th>Dietary Restrictions</th>
<th>Suitable?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vegans</strong></td>
<td>Do not eat meat, poultry, fish/seafood, eggs, dairy products, honey</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Lacto-Vegetarians</strong></td>
<td>Do not eat meat, poultry, fish/seafood, eggs, but do eat dairy products</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Ovo-Vegetarians</strong></td>
<td>Do not eat meat, poultry, fish/seafood, dairy products, but do eat eggs</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Vegetarians</strong></td>
<td>Do not eat meat, poultry, fish/seafood, but do eat dairy products and eggs</td>
<td>✔</td>
</tr>
</tbody>
</table>

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Animal Testing Statement

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

Vigon International, LLC. is not in the practice of performing or commissioning animal testing on its finished products and actively evaluates the ingredients of its products through non-animal testing methods and through computational (predictive) toxicology programs.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Vigon International, LLC. certifies that the product above is **not listed** on the California's Safe Drinking Water and Toxic Enforcement Act of 1986, also known as Proposition 65.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
EU Declaration

Vigon Code: 502775
Product Name: EXALTOLIDE® TOTAL

The product listed above is acceptable and/or approved for use in the European Union. Below is the flavoring status based on European Regulation 2008/1334/EC.

<table>
<thead>
<tr>
<th>Flavouring Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Flavouring Substance</td>
</tr>
<tr>
<td><strong>✓</strong> Flavouring Substance</td>
</tr>
<tr>
<td>Thermal Process Flavouring</td>
</tr>
<tr>
<td>Smoke Flavouring</td>
</tr>
<tr>
<td>Flavour Precursor</td>
</tr>
<tr>
<td>Other Flavouring</td>
</tr>
<tr>
<td><strong>Not Applicable:</strong> Contains no ingredients whose use is intended primarily for flavour.</td>
</tr>
<tr>
<td><strong>Not Permitted:</strong> Contains ingredient(s) which are not permitted in flavours in the EU.</td>
</tr>
</tbody>
</table>

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Nanomaterials

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

We hereby confirm, to the best of our knowledge, that the above referenced product has not been formulated with engineered nanomaterials.

"Engineered nanomaterial" means any intentionally produced material that has one or more dimensions of the order of 100 nm or less or that is composed of discrete functional parts, either internally or at the surface, many of which have one or more dimensions of the order of 100 nm or less, including structures, agglomerates or aggregates, which may have a size above the order of 100 nm but retain properties that are characteristic of the nanoscale.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Transmissible Spongiform Encephalopathy (TSE) and Bovine Spongiform Encephalopathy (BSE) Statement

Product Name:  EXALTOLIDE® TOTAL

Vigon Code:  502775

Vigon International, LLC. products are manufactured wholly from synthetic, natural or manufactured materials and do not contain any raw materials produced from or substances derived of animal origin. Moreover, these products do not contain, and are not derived from, specified risk material as defined in Commission Decision 97/534/EC or mechanically recovered meat obtained from the vertebral column of bovine, ovine or caprine animals.

The manufacturing process does not use any ingredient of animal origin nor do our products come in contact with animal products during storage and transportation.

We further declare that our products are Dioxin Free.

Therefore, to the best of our knowledge the product listed above are free from Transmissible Spongiform Encephalopathy (TSE) and Bovine Spongiform Encephalopathy (BSE).

Vigon International, LLC. may terminate this statement at any time upon written notice, in which this statement shall be null and void as to any material supplied after termination of the statement.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue:  July 5, 2023
IFRA

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

We certify that the above material contains the following restricted substance restricted by IFRA Standards:
16-oxacyclohexadecan-1-one (CAS 106-02-5) 100%

- is in compliance with the Standards of the INTERNATIONAL FRAGRANCE ASSOCIATION (IFRA 50th amendment), depending on the application and the percentage of use in the final product.

The IFRA Standards regarding use restriction are based on safety assessments by the Panel of Experts of the Research Institute for Fragrance Materials (RIFM) and are enforced by the IFRA Scientific Committee.

It is the ultimate responsibility of our customer to ensure the safety of the final product by further testing if need be.

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
# International Inventories

**Product Name:** EXALTOLIDE® TOTAL

**Vigon Code:** 502775

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in Chine (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances and Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Residual Solvents

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

Based on our knowledge of our production process, raw materials and equipments used we do not expect residual solvents to be present.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

The product listed above is in compliance with the European Directive 76/768/EEC established by the SCCNFP declared allergens. This product is free of these fragrance allergens.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Melamine Statement

Product Name:  EXALTOLIDE® TOTAL

Vigon Code:  502775

Based on our knowledge of our production process, raw materials and equipment used we do not expect melamine to be present.

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Phthalate Statement

Product Name: EXALTOLIDE® TOTAL

Vigon Code: 502775

We’ve performed a risk assessment on our product contact plastics which include tubes, joints, caps, pumps, as well as packaging (e.g. plastic wraps and bags) and can confirm that our plastic products do not contain certain phthalate esters (most notably bis-2-Ethylhexyl phthalate[DEHP] and dibutyl phthalate [DBP]).

Sincerely,

Vigon Regulatory Department
regulatory@vigon.com
Date of Issue: July 5, 2023
Stable when stored in its original package, tightly sealed in a cool (46-90°F) and dry location out of direct heat and light.

INSTRUCTIONS FOR USE: Ask your employer for guidance regarding the safe use and handling of this product in your specific workplace environment based on the information provided in Vigon’s Safety Data Sheet (SDS).

HAZARD STATEMENT: Causes mild skin irritation. May cause an allergic skin reaction. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. PRECAUTIONARY STATEMENT: -PREVENTION- Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves. -RESPONSE- IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Collect spillage. -STORAGE- Store away from incompatible materials. -DISPOSAL- Dispose of contents/container in accordance with local/regional/national/international regulations.