1 Identification

- Product identifier
- Trade name: Fermentone Extra 1% in Triacetin natural
- Product number: 1490
- CAS Number: 23696-85-7 / 102-76-1
- EINECS Number: 245-833-2 / 203-051-9
- Application of the substance / the mixture: Food flavorings

Details of the supplier of the safety data sheet

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. Advanced Biotech makes NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the Advanced Biotech product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of an Advanced Biotech product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Advanced Biotech product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

- Manufacturer/Supplier:
  Advanced Biotech
  10 Taft Road
  Totowa, NJ 07512 USA

- Information department:
  Product Safety Department
  productsafety@adv-bio.com

- Emergency telephone number:
  1(800)535-5053 (Info Trac)
  1(352)323-3500 (International)
  During normal business hours: 1(973)339-6242

2 Hazard(s) identification

- Classification of the substance or mixture

  GHS07

  Skin Sens. 1. H317. May cause an allergic skin reaction.

- Label elements
  Harmful in contact with skin or if inhaled.

- GHS label elements
  Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.
  The product is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms

  GHS07

- Signal word: Warning

- Hazard-determining components of labeling:
  1-(2,6,6-Trimethylcyclohexa-1,3-dienyl)-2-buten-1-one

(Continued on page 2)
Trade name: Fermentone Extra 1% in Triacetin natural

- **Hazard statements**
  - H317 May cause an allergic skin reaction.

- **Precautionary statements**
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  - P280 Wear protective gloves.
  - P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
  - P321 Specific treatment (see on this label).
  - P363 Wash contaminated clothing before reuse.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 1
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - HEALTH Health = 1
    - FIRE Fire = 1
    - REACTIVITY Reactivity = 0

- **Other hazards**
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

### 3 Composition/information on ingredients

- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**
  - CAS: 23696-85-7 1-(2,6,6-Trimethylcyclohexa-1,3-dienyl)-2-buten-1-one
    - Skin Sens. 1, H317
    - 1.0%

### 4 First-aid measures

- **Description of first aid measures**
  - **After inhalation:** Supply fresh air and be sure to call for a doctor.
    - In case of unconsciousness place patient stably in side position for transportation.
  - **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
  - **After eye contact:** Rinse opened eye for several minutes under running water.
  - **After swallowing:** If symptoms persist consult doctor.

- **Information for doctor:**
  - Most important symptoms and effects, both acute and delayed
    - No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed
    - No further relevant information available.
5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  - CO2, powder or alcohohesistant foam.
  - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
  - Protective equipment: No special measures required.
  - Additional information
    - Cool endangered receptacles with water spray.
    - Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Not required.
- Environmental precautions:
  - Dilute with plenty of water.
  - Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

<table>
<thead>
<tr>
<th>PAC-1:</th>
<th>CAS: 102-76-1 Triacetin</th>
<th>19 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAC-2:</td>
<td>CAS: 102-76-1 Triacetin</td>
<td>210 mg/m³</td>
</tr>
<tr>
<td>PAC-3:</td>
<td>CAS: 102-76-1 Triacetin</td>
<td>1,200 mg/m³</td>
</tr>
</tbody>
</table>

7 Handling and storage

- Handling:
  - Precautions for safe handling
    - Ensure good ventilation/exhaustion at the workplace.
    - Prevent formation of aerosols.
  - Information about protection against explosions and fires: No special measures required.
  - Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and receptacles:
      - No special requirements.
      - Please refer to product specification for product storage requirements.

(Continued on page 4)
8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.
· Control parameters
  · Components with limit values that require monitoring at the workplace:
  The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  · Additional information: The lists that were valid during the creation were used as a basis.
· Exposure controls
· Personal protective equipment:
  · General protective and hygienic measures:
    Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work.
  · Breathing equipment:
    In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material should be based on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· Penetration time of glove material
  The exact break through time has to be determined by the manufacturer of the protective gloves and has to be observed.
· Eye protection: Goggles recommended during refilling.

9 Physical and chemical properties

· Information on basic physical and chemical properties
  · General Information
    · Appearance:
      · Form: Liquid
      · Color: According to product specification
      · Odor: According to product specification
Trade name: Fermentone Extra 1% in Triacetin natural

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Odor threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>· pH-value</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Change in condition</td>
<td></td>
</tr>
<tr>
<td>· Melting point/Melting range</td>
<td>Undetermined</td>
</tr>
<tr>
<td>· Boiling point/Boiling range</td>
<td>258 °C (496.4 °F)</td>
</tr>
<tr>
<td>· Flash point</td>
<td>&gt;110 °C (&gt;230 °F)</td>
</tr>
<tr>
<td>· Flammability (solid, gaseous)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>· Decomposition temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Auto igniting</td>
<td>Product is not selfigniting</td>
</tr>
<tr>
<td>· Danger of explosion</td>
<td>Product does not present an explosion hazard</td>
</tr>
<tr>
<td>· Explosion limits</td>
<td></td>
</tr>
<tr>
<td>· Lower</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Upper</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Vapor pressure at 20 °C (68 °F)</td>
<td>&lt;0.01 hPa (&gt;0 mm Hg)</td>
</tr>
<tr>
<td>· Density at 20 °C (68 °F)</td>
<td>1.14 g/cm³ (9.5133 lbs/gal)</td>
</tr>
<tr>
<td>· Relative density</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Vapor density</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Solubility in / Miscibility with Water</td>
<td>Fully miscible</td>
</tr>
<tr>
<td>· Partition coefficient (n-octanol/water)</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Viscosity</td>
<td></td>
</tr>
<tr>
<td>· Dynamic</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Kinematic</td>
<td>Not determined</td>
</tr>
<tr>
<td>· Solvent content</td>
<td></td>
</tr>
<tr>
<td>· VOC content</td>
<td>0.00 %</td>
</tr>
<tr>
<td>· Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

10 Stability and reactivity

· Reactivity No further relevant information available.
· Chemical stability
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions No dangerous reactions known.
· Conditions to avoid No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.
11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

<table>
<thead>
<tr>
<th>LD/LC50 values that are relevant for classification:</th>
</tr>
</thead>
</table>

ATE (Acute Toxicity Estimate)

| Oral LD50 | 3,030 mg/kg (rat) |

- Primary irritant effect:
  - on the skin: No irritant effect.
  - on the eye: No irritating effect.
  - Sensitization: Sensitization possible through skin contact.

- Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
  - Irritant

- Carcinogenic categories

<table>
<thead>
<tr>
<th>IARC (International Agency for Research on Cancer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NTP (National Toxicology Program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OSHA-Ca (Occupational Safety &amp; Health Administration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Behavior in environmental systems:
    - Bioaccumulative potential: No further relevant information available.
    - Mobility in soil: No further relevant information available.
  - Additional ecological information:
    - General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Trade name: Fermentone Extra 1% in Triacetin natural

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

### 14 Transport information

- UN-Number
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated
- UN proper shipping name
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated
- Transport hazard class(es)
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated
- Packing group
  - DOT, ADR, IMDG, IATA: Not Regulated
- Environmental hazards:
  - Marine pollutant: No
- Special precautions for user: Not applicable.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.
- Transport/Additional information: Not dangerous according to the above specifications.
- UN "Model Regulation": Not Regulated

### 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances):
      - None of the ingredients is listed.
    - Section 313 (Specific toxic chemical listings):
      - None of the ingredients is listed.
    - TSCA (Toxic Substances Control Act):
      - All ingredients are listed.
- TSCA new (21st Century Act): (Substances not listed)
  - CAS: 23696-85-7 1-(2,6,6-Trimethylcyclohexa-1,3-dienyl)-2-buten-1-one
- Proposition 65
  - Chemicals known to cause cancer:
    - None of the ingredients is listed.
  - Chemicals known to cause reproductive toxicity for females:
    - None of the ingredients is listed.
Trade name: Fermentone Extra 1% in Triacetin natural

- **Chemicals known to cause reproductive toxicity for males:** None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:** None of the ingredients is listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)** None of the ingredients is listed.
  - **TLV (Threshold Limit Value established by ACGIH)** None of the ingredients is listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)** None of the ingredients is listed.

- **GHS label elements**
  - Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.
  - The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**

  GHS07

- **Signal word** Warning

- **Hazard-determining components of labeling:**
  1-(2,6,6-Trimethylcyclohexa-1,3-dienyl)-2-buten-1-one

- **Hazard statements**
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- **Precautionary statements**
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  P321 Specific treatment (see on this label).
  P363 Wash contaminated clothing before reuse.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
  H317 May cause an allergic skin reaction.

- **Department issuing SDS:** Product Safety Department

- **Contact:**
  Product Safety Department
  productsafety@adv-bio.com
## Abbreviations and acronyms:
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- NIOSH: National Institute for Occupational Safety
- OSHA: Occupational Safety & Health
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit
- REL: Recommended Exposure Limit
- Skin Sens. 1: Skin sensitisation – Category 1