Safety Data Sheet acc. to OSHA HCS

1 Identification

- Product identifier
- Trade name: Thiomenthone 1% EtOH natural
- Product number: 1026
- Application of the substance / the mixture: Food flavorings

Details of the supplier of the safety data sheet

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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

  ![GHS02 Flame]
  Flam. Liq. 2 H225 Highly flammable liquid and vapor.

  ![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

- GHS02
- GHS07

(Continued on page 2)
Safety Data Sheet
acc. to OSHA HCS

Trade name: Thiomenthone 1% EtOH natural

- Signal word Danger
- Hazard-determining components of labeling:
  - p-Mentha-8-thiol-3-one
- Hazard statements
  - H225 Highly flammable liquid and vapor.
  - H317 May cause an allergic skin reaction.
- Precautionary statements
  - P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - P241 Use explosion-proof electrical/ventilating/lighting/equipment.
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  - P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - P403+P235 Store in a well-ventilated place. Keep cool.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 0
    - Fire = 4
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - Health = 0
    - Fire = 4
    - 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: 64-17-5 | ethyl alcohol | Flam. Liq. 2, H225 | 99.0% |
  | CAS: 38462-22-5 | p-Mentha-8-thiol-3-one | Skin Sens. 1, H317 | 1.0% |

4 First-aid measures

- Description of first aid measures
- General information: Immediately remove any clothing soiled by the product.
- 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.
Trade name: Thiomenthone 1% EtOH natural

- 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, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- 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
  Wear protective equipment. Keep unprotected persons away.
- 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: 64-17-5 ethyl alcohol</th>
<th>1,800 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAC-2:</td>
<td>CAS: 64-17-5 ethyl alcohol</td>
<td>3300* ppm</td>
</tr>
<tr>
<td>PAC-3:</td>
<td>CAS: 64-17-5 ethyl alcohol</td>
<td>15000* ppm</td>
</tr>
</tbody>
</table>

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
Trade name: Thiomenthone 1% EtOH natural

- Information about protection against explosions and fires:
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.

- Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and receptacles: Store in a cool location.
    - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions:
    Keep receptacle tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.

- Specific end use(s) No further relevant information available.

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 following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
    At this time, the remaining constituent has no known exposure limits.

<table>
<thead>
<tr>
<th>CAS: 64-17-5 ethyl alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL</td>
</tr>
<tr>
<td>REL</td>
</tr>
<tr>
<td>TLV</td>
</tr>
</tbody>
</table>

- 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.
### 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
  - **Odor threshold:** Not determined.
  - **pH-value:** Not determined.
  - **Change in condition**
    - **Melting point/Melting range:** -114.5 °C (-174.1 °F)
    - **Boiling point/Boiling range:** 78 °C (172.4 °F)
  - **Flash point:** 17 °C (62.6 °F)
  - **Flammability (solid, gaseous):** Not applicable.
  - **Ignition temperature:** 425 °C (797 °F)
  - **Decomposition temperature:** Not determined.
  - **Auto igniting:** Product is not selfigniting.
  - **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
  - **Explosion limits:**
    - **Lower:** 3.5 Vol %
    - **Upper:** 15 Vol %
  - **Vapor pressure at 20 °C (68 °F):** 59 hPa (44.3 mm Hg)
  - **Density at 20 °C (68 °F):** 0.812 g/cm³ (6.77614 lbs/gal)
    - **Relative density:** Not determined.
    - **Vapor density:** Not determined.
    - **Evaporation rate:** Not determined.
  - **Solubility in / Miscibility with Water at 20 °C (68 °F):** 1,000 g/l
  - **Partition coefficient (n-octanol/water):** Not determined.
  - **Viscosity:**
    - **Dynamic:** Not determined.

(Continued on page 6)
### 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:**
  - LD/LC50 values that are relevant for classification:
    
    | CAS: 64-17-5 ethyl alcohol |
    |---------------------------|
    | Oral LD50 7,060 mg/kg (rat) |
    | Inhalative LC50/4 h 20,000 mg/l (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**
  - IARC (International Agency for Research on Cancer)
    - CAS: 64-17-5 ethyl alcohol 1
  - NTP (National Toxicology Program)
    - None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    - None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** 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.

· 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, IMDG, IATA UN1170

· UN proper shipping name
  DOT Ethanol solutions
  ADR 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
  IMDG ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
  IATA ETHANOL SOLUTION

· Transport hazard class(es)
  · DOT, IMDG, IATA
    · Class 3 Flammable liquids
    · Label 3
### 48.1.23 ADR

- **Class**: 3 Flammable liquids
- **Packing group**: DOT, ADR, IMDG, IATA  II
- **Environmental hazards**: Marine pollutant: No
- **Special precautions for user**: Warning: Flammable liquids
- **Stowage Category**: A
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**: Not applicable.
- **Transport/Additional information**:
  - **DOT**: Quantity limitations
    - On passenger aircraft/rail: 5 L
    - On cargo aircraft only: 60 L
  - **ADR**: Excepted quantities (EQ)
    - Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml
  - **IMDG**: Limited quantities (LQ)
    - 1L
  - **Excepted quantities (EQ)**
    - Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml
- **UN "Model Regulation"**: UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II

## 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.
Trade name: Thiomenthone 1% EtOH natural

· Proposition 65
  · Chemicals known to cause cancer:
    None of the ingredients is listed.

  WARNING: Consuming this product can expose you to Pulegone, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov/food.

  Pulegone CAS-no.89-82-7 (0-0.015% by weight)
  · Chemicals known to cause reproductive toxicity for females:
    None of the ingredients is listed.

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

  · Chemicals known to cause developmental toxicity:
    CAS: 64-17-5 ethyl alcohol

· Carcinogenic categories
  · EPA (Environmental Protection Agency)
    None of the ingredients is listed.

  · TLV (Threshold Limit Value established by ACGIH)
    CAS: 64-17-5 ethyl alcohol  A3

  · NIOSH-Ca (National Institute for Occupational Safety and Health)
    None of the ingredients is listed.

· GHS label elements
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  The product is classified and labeled according to the Globally Harmonized System (GHS).

  Hazard pictograms
  ![GHS02]
  ![GHS07]

· Signal word Danger

· Hazard-determining components of labeling:
  p-Mentha-8-thiol-3-one

· Hazard statements
  H225 Highly flammable liquid and vapor.
  H317 May cause an allergic skin reaction.

· Precautionary statements
  P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
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  P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P403+P235 Store in a well-ventilated place. Keep cool.
  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.

16 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
  H225 Highly flammable liquid and vapor.
  H317 May cause an allergic skin reaction.

- Department issuing SDS: Product Safety Department

- Contact:
  Product Safety Department
  productsafety@adv-bio.com

- Date of preparation / last revision: 02/11/2019 / -

- 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
  Flam. Liq. 2: Flammable liquids – Category 2
  Skin Sens. 1: Skin sensitisation – Category 1