## 1 Identification

- **Product identifier**
  - **Trade name:** Triethyl citrate synthetic
  - **Product number:** 2060
  - **CAS Number:** 77-93-0
  - **EC number:** 201-070-7

- **Application of the substance / the mixture** Flavored Ingredients

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    - Advanced Biotech
    - 10 Taft Road
    - Totowa, NJ 07512 USA
  - **Information department:**
    - Product Safety Department
    - productsafety@adv-bio.com
  - **Emergency telephone number:**
    - Infotrac: 1-800-535-5053 (Domestic) & 1-352-323-3500 (International)
    - Email: responders@infotrac.net & During normal business hours: 1-973-339-6242

## 2 Hazard(s) identification

- **Classification of the substance or mixture**
  - The substance is not classified, according to the Globally Harmonized System (GHS).

- **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.

- **Hazard pictograms** Not Applicable

- **Signal word** Not Applicable

- **Hazard statements** Not Applicable

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

(Continued on page 2)
Trade name: Triethyl citrate synthetic

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

vPvB: Not applicable.

3 Composition/information on ingredients
Chemical characterization: Substances
CAS No. Description
CAS: 77-93-0 Triethyl citrate
Identification number(s)
EC number: 201-070-7

4 First-aid measures
Description of first aid measures
General information: No special measures required.
After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact: Generally the product does not irritate the skin.
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 alcoholresistant 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).
Trade name: Triethyl citrate synthetic

7 Handling and storage

- **Handling:**
  - **Precautions for safe handling:** No special measures required.
  - **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 the product specification and/or Certificate of Analysis for product storage requirements.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** None.

- **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:** Not required.

- **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:** The usual precautionary measures for handling chemicals should be followed.
  - **Breathing equipment:** Not required.
  - **Protection of hands:** 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.
Trade name: Triethyl citrate synthetic

- Penetration time of glove material
  The exact breakthrough 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

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<th>Information on basic physical and chemical properties</th>
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<td>General Information</td>
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<td>Change in condition</td>
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<td>Melting point/Melting range:</td>
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<td>Boiling point/Boiling range:</td>
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<td>Flash point:</td>
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<td>Flammability (solid, gaseous):</td>
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<td>Decomposition temperature:</td>
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<tr>
<td>Auto igniting:</td>
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<td>Danger of explosion:</td>
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<td>Explosion limits:</td>
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<td>Lower:</td>
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<td>Upper:</td>
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<td>Vapor pressure:</td>
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<td>Density at 20 °C (68 °F):</td>
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<tr>
<td>Relative density</td>
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<tr>
<td>Vapor density</td>
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<tr>
<td>Evaporation rate</td>
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<tr>
<td>Solubility in / Miscibility with</td>
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<td>Water:</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
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<tr>
<td>Viscosity:</td>
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<tr>
<td>Dynamic:</td>
</tr>
<tr>
<td>Kinematic:</td>
</tr>
<tr>
<td>VOC content:</td>
</tr>
<tr>
<td>0.0 g/l / 0.00 lb/gal</td>
</tr>
<tr>
<td>Other information</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:
  - LD/LC50 values that are relevant for classification:
    | CAS: 77-93-0 Triethyl citrate |
    | Oral LD50 | 5,900 mg/kg (rat) |
    | Dermal LD50 | >5,000 mg/kg (rabbit) |
- Primary irritant effect:
  - on the skin: No irritant effect.
  - on the eye: No irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
  - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us. The substance is not subject to classification.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    - Substance is not listed.
  - NTP (National Toxicology Program)
    - Substance is not listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    - Substance is not listed.

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 (Assessment by list): slightly hazardous for water
  - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:** Smaller quantities can be disposed of with household waste.

- **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, ADN, IMDG, IATA: Not Regulated

- **UN proper shipping name**
  - DOT, ADN, IMDG, IATA: Not Regulated

- **Transport hazard class(es)**
  - DOT, ADN, IMDG, IATA: Not Regulated

- **Packing group**
  - DOT, 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):**
      - Substance is not listed.
    - **Section 313 (Specific toxic chemical listings):**
      - Substance is not listed.
    - **TSCA (Toxic Substances Control Act):**
      - ACTIVE
### Hazardous Air Pollutants
Substance is not listed.

### Proposition 65
- **Chemicals known to cause cancer:**
  Substance is not listed.
- **Chemicals known to cause reproductive toxicity for females:**
  Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:**
  Substance is not listed.
- **Chemicals known to cause developmental toxicity:**
  Substance is not listed.

### Carcinogenic categories
- **EPA (Environmental Protection Agency)**
  Substance is not listed.
- **TLV (Threshold Limit Value)**
  Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)**
  Substance is not 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.
- **Hazard pictograms** Not Applicable
- **Signal word** Not Applicable
- **Hazard statements** Not Applicable
- **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.

**Department issuing SDS:** Product Safety Department

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

**Date of preparation / last revision:** 01/11/2023

**Abbreviations and acronyms:**
- **ADR:** Accord relatif au transport international 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
- **EINECS:** European Inventory of Existing Commercial 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

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Trade name: Triethyl citrate synthetic

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
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<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health</td>
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<td>Permissible Exposure Limit</td>
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