Section 1 - Product and Company Information

Product Name: TERT-BUTYL ACRYLATE, 98%
Product Number: 327182
Brand: ALDRICH

Company: Sigma-Aldrich
Address: 3050 Spruce Street
          SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>TERT-BUTYL ACRYLATE</td>
<td>1663-39-4</td>
<td>No</td>
</tr>
</tbody>
</table>

Formula: C7H12O2

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Flammable (USA) Highly Flammable (EU). Harmful.
Harmful by inhalation, in contact with skin and if swallowed.
Irritating to respiratory system and skin. May cause sensitization
by skin contact. Harmful to aquatic organisms, may cause long-term
adverse effects in the aquatic environment.

HMIS RATING
HEALTH: 3
FLAMMABILITY: 3
REACTIVITY: 0

NFPA RATING
HEALTH: 3
FLAMMABILITY: 3
REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is
conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give
artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for
at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

**EYE EXPOSURE**
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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**Section 5 - Fire Fighting Measures**

**FLAMMABLE HAZARDS**
Flammable Hazards: Yes

**EXPLOSION HAZARDS**
Vapor may travel considerable distance to source of ignition and flash back. Container explosion can occur under fire conditions. In advanced or massive fires the area should be evacuated and the fire should be fought from a remote explosion-resistant location.

**FLASH POINT**
62.6 °F 17 °C  Method: closed cup

**EXPLOSION LIMITS**
Lower: 0.7 %  Upper: 7 %

**AUTOIGNITION TEMP**
400 °C

**FLAMMABILITY**
N/A

**EXTINGUISHING MEDIA**
Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

**FIREFIGHTING**
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

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**Section 6 - Accidental Release Measures**

**PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL**
Evacuate area. Shut off all sources of ignition.

**PROCEDURE(S) OF PERSONAL PRECAUTION(S)**
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

**METHODS FOR CLEANING UP**
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

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**Section 7 - Handling and Storage**
HANDLING
User Exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>128.17 AMU</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>BP/BP Range</td>
<td>117.0 - 120.0 °C</td>
<td></td>
</tr>
<tr>
<td>MP/MP Range</td>
<td>- 69.0 °C</td>
<td></td>
</tr>
<tr>
<td>Freezing Point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
<td></td>
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<tr>
<td>Vapor Density</td>
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<td></td>
</tr>
<tr>
<td>Saturated Vapor Conc.</td>
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</tr>
<tr>
<td>SG/Density</td>
<td>0.883 g/cm3</td>
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<tr>
<td>Bulk Density</td>
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<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
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<td></td>
</tr>
<tr>
<td>Volatile%</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>VOC Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Water Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Solvent Content</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
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<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>0.9 Pas</td>
<td>20 °C</td>
</tr>
<tr>
<td>Surface Tension</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>Log Kow: 2.32</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temp.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>62.6 °F 17 °C</td>
<td>Method: closed cup</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td>Lower: 0.7 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Upper: 7 %</td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

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Autoignition Temp  400 °C
Refractive Index  1.41
Optical Rotation  N/A
Miscellaneous Data  N/A
Solubility  Solubility in Water: 2 mg/ml H2O

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
  Stable: Stable.
  Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
  Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
  Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
  Skin Contact: Causes skin irritation.
  Skin Absorption: Harmful if absorbed through skin.
  Eye Contact: May cause eye irritation.
  Inhalation: Material is irritating to mucous membranes and upper respiratory tract. Harmful if inhaled.
  Ingestion: Harmful if swallowed.

SENSITIZATION
  Skin: May cause allergic skin reaction.

SIGNS AND SYMPTOMS OF EXPOSURE
  Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA
  Oral
  Rat
  1,056 mg/kg
  LD50
  Skin
  Rat
  > 4,000 mg/kg
  LD50
  Skin
  Rabbit
  2,000 mg/kg
  LD50
  4 H
  Inhalation
  Rat
  7,000 mg/m3
  LC50

IRRITATION DATA
  Skin
  Rabbit
Remarks: Moderate irritation effect

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: EC50 Algae
Species: Scenedesmus subspicatus
Time: 72 h
Value: 280 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 24 h
Value: 42 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 48 h
Value: 57 mg/l

Test Type: LC50 Fish
Species: Leuciscus idus
Time: 48 h
Value: 23 mg/l

Test Type: LC50 Fish
Species: Leuciscus idus
Time: 96 h
Value: 46.0 - 68.0 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Flammable liquids, n.o.s.
UN#: 1993
Class: 3
Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA
Proper Shipping Name: Flammable liquid, n.o.s.
IATA UN Number: 1993
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: F-Xn
R: 11-20/21/22-37/38-43-52/53
Risk Statements: Highly flammable. Harmful by inhalation, in contact with skin and if swallowed. Irritating to respiratory system and skin. May cause sensitization by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S: 16-25-37-61
Safety Statements: Keep away from sources of ignition - no smoking. Avoid contact with eyes. Wear suitable gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Irritating to respiratory system and skin. May cause sensitization by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Statements: Keep away from sources of ignition - no smoking. Avoid contact with eyes. Wear suitable gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
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