

# Material Safety Data Sheet

| HAZARD WARNINGS | RISK PHRASES   | PROTECTIVE CLOTHING   |
|-----------------|--|---|
|                 | Hygroscopic -- keep container tightly sealed.<br>The health risks of this compound have not been fully determined.<br>Exposure may cause irritation of the skin, eyes, and respiratory system. |     |

## Section I. Chemical Product and Company Identification

|                  |   |                                 |   |
|------------------|---|---------------------------------|---|
| Chemical Name    | <b>O-Acetylcitric Acid Tributyl Ester</b>   |                                 |   |
| Catalog Number   | A0822   | Supplier                        | TCl America<br>9211 N. Harborage St.<br>Portland OR<br>1-800-423-8616                     |
| Synonym          | Acetylcitric Acid Tributyl Ester  |                                 |   |
| Chemical Formula | CH <sub>3</sub> COOC(CH <sub>2</sub> COOC <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> COOC <sub>4</sub> H <sub>9</sub> |                                 |   |
| CAS Number       | 77-90-7   | In case of<br>Emergency<br>Call | <b>Chemtrec®</b><br><b>(800) 424-9300 (U.S.)</b><br><b>(703) 527-3887 (International)</b> |

## Section II. Composition and Information on Ingredients

| Chemical Name                      | CAS Number | Percent (%)    | TLV/PEL        | Toxicology Data  |
|------------------------------------|------------|----------------|----------------|--|
| O-Acetylcitric Acid Tributyl Ester | 77-90-7    | Min. 97.0 (GC) | Not available. | Mouse LD <sub>50</sub> (intraperitoneal)<br>>4000mg/kg |

## Section III. Hazards Identification

|                        |   |
|------------------------|---|
| Acute Health Effects   | No specific information is available in our data base regarding the toxic effects of this material for humans. However, exposure to any chemical should be kept to a minimum. Skin and eye contact may result in irritation. May be harmful if inhaled or ingested. Always follow safe industrial hygiene practices and wear proper protective equipment when handling this compound. |
| Chronic Health Effects | <b>CARCINOGENIC EFFECTS</b> : Not available.<br><b>MUTAGENIC EFFECTS</b> : Not available.<br><b>TERATOGENIC EFFECTS</b> : Not available.<br><b>DEVELOPMENTAL TOXICITY</b> Not available.<br>There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.                    |

## Section IV. First Aid Measures

|              |   |
|--------------|---|
| Eye Contact  | Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes. Keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper eyelids. Seek medical attention. Treat symptomatically and supportively.  |
| Skin Contact | After contact with skin, wash immediately with plenty of water. Gently and thorough wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.  |
| Inhalation   | If the victim is not breathing, perform artificial respiration. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention. Treat symptomatically and supportively.  |
| Ingestion    | INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively. |

## Section V. Fire and Explosion Data

|                                      |   |                  |                |
|--------------------------------------|---|------------------|----------------|
| Flammability                         | May be combustible at high temperature.   | Auto-Ignition    | Not available. |
| Flash Points                         | 188°C (370.4°F).  | Flammable Limits | Not available. |
| Combustion Products                  | These products are toxic carbon oxides (CO, CO <sub>2</sub> ).  |                  |                |
| Fire Hazards                         | No specific information is available regarding the flammability of this compound in the presence of various materials.  |                  |                |
| Explosion Hazards                    | Risks of explosion of the product in presence of mechanical impact: Not available.<br>Risks of explosion of the product in presence of static discharge: Not available.<br>No additional information is available regarding the risks of explosion. |                  |                |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemicals, CO <sub>2</sub> , water spray or foam.<br>LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.  |                  |                |

Continued on Next Page

Emergency phone number (800) 424-9300

**Section VI. Accidental Release Measures**Spill Cleanup  
Instructions

Hygroscopic material.  
In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and exercise caution. Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.

**Section VII. Handling and Storage**Handling and Storage  
Information

HYGROSCOPIC. Keep away from heat and sources of ignition. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe gas, fumes, vapor or spray.  
Always store away from incompatible compounds such as oxidizing agents.

**Section VIII. Exposure Controls/Personal Protection**

## Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.

## Personal Protection

Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.



## Exposure Limits

Not available.

**Section IX. Physical and Chemical Properties**

|                       |                |                       |  |
|-----------------------|----------------|-----------------------|--|
| Physical state @ 20°C | Liquid.        | Solubility            | Soluble in alcohol, ether, 5mg/L in water. |
| Specific Gravity      | 1.050          |                       |  |
| Molecular Weight      | 402.48         | Partition Coefficient | Not available.                             |
| Boiling Point         | Not available. | Vapor Pressure        | 0.26 psi @ 20°C                            |
| Melting Point         | Not available. | Vapor Density         | Not available.                             |
| Refractive Index      | Not available. | Volatility            | Not available.                             |
| Critical Temperature  | Not available. | Odor                  | Mild, fruity flavor.                       |
| Viscosity             | Not available. | Taste                 | Not available.                             |

**Section X. Stability and Reactivity Data**

## Stability

This material is stable if stored under proper conditions. (See Section VII for instructions)

## Conditions of Instability

Protect from moisture. Avoid excessive heat and light.

## Incompatibilities

Reactive with strong oxidizing agents.

**Section XI. Toxicological Information**

## RTECS Number

TZ8330000

## Routes of Exposure

Eye contact. Ingestion. Inhalation.

## Toxicity Data

Mouse LD<sub>50</sub> (intraperitoneal) >4000mg/kg

## Chronic Toxic Effects

**CARCINOGENIC EFFECTS** : Not available.  
**MUTAGENIC EFFECTS** : Not available.  
**TERATOGENIC EFFECTS** : Not available.  
**DEVELOPMENTAL TOXICITY** Not available.  
There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

## Acute Toxic Effects

No specific information is available in our data base regarding the toxic effects of this material for humans. However, exposure to any chemical should be kept to a minimum. Skin and eye contact may result in irritation. May be harmful if inhaled or ingested. Always follow safe industrial hygiene practices and wear proper protective equipment when handling this compound.

**Section XII. Ecological Information**

Ecotoxicity Not available.

Environmental Fate Acetyl tributyl citrate's production and use as a plasticizer for vinyl, rubber and cellulosic resins, and as a flavor ingredient may result in its release to the environment through various waste streams. If released to air, an estimated vapor pressure of 4.6X10<sup>-6</sup> mm Hg at 25°C indicates acetyl tributyl citrate will exist in both the vapor and particulate phases in the ambient atmosphere. Vapor-phase acetyl tributyl citrate will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 27 hours. Particulate-phase acetyl tributyl citrate may be physically removed from the atmosphere by wet and dry deposition. If released to soil, acetyl tributyl citrate is expected to be immobile based upon an estimated Koc of 5100. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 3.8X10<sup>-10</sup> atm-cu m/mole. Based on limited data, acetyl tributyl citrate is expected to readily biodegrade aerobically in both soil and water. 80% of the theoretical BOD was reached in 4 weeks using an activated sludge inoculum. If released to water, acetyl tributyl citrate is expected to adsorb to suspended solids and sediment in water based on the estimated Koc. Volatilization from water surfaces is not expected to be an important fate process based on its estimated Henry's Law constant. An estimated BCF of 1100 suggests the potential for bioconcentration in aquatic organisms is very high. Estimated hydrolysis half-lives of 3.8 years and 140 days were determined for pH 7 and 8, respectively. Occupational exposure to acetyl tributyl citrate may occur through inhalation of dust particles and dermal contact with this compound at workplaces where acetyl tributyl citrate is produced or used. The general population may be exposed to acetyl tributyl citrate via dermal contact with consumer products containing acetyl tributyl citrate.

**Section XIII. Disposal Considerations**

Waste Disposal Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of the substance.

**Section XIV. Transport Information**

DOT Classification Not a DOT controlled material (United States).

PIN Number Not applicable.

Proper Shipping Name Not applicable.

Packing Group (PG) Not applicable.

DOT Pictograms

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA) This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.

WHMIS Classification (Canada) Not available.

EINECS Number (EEC) 201-067-0

EEC Risk Statements Not available.

Japanese Regulatory Data Not available.

**Section XVI. Other Information****Version 1.0****Validated on 4/8/1999.****Printed 1/12/2005.****Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.