



## MATERIAL SAFETY DATA SHEET

### 1. PRODUCT AND COMPANY IDENTIFICATION:

<b>PRODUCT CODE</b>	N0136
<b>PRODUCT NAME</b>	NAT. TRIETHYL CITRATE
<b>SUPPLIER</b>	Shanghai M & U International Trade Co., Ltd. Rm 1717, No 598 North NuJiang Road 200333 Shanghai, China +86-21-32515501 32515502 sales@mu-intel.com

**FOR EMERGENCIES CALL CHEMTREC: 800-424-9300 (24-HOURS)**

### 2. HAZARD IDENTIFICATION:

#### Emergency Overview

#### OSHA Hazards

No known OSHA hazards.

#### GHS Classification

Acute toxicity, Inhalation (Category 4)

#### GHS Label elements, including precautionary statements

Pictogram

Signal word                      Warning

#### Hazard statement(s)

H332                              Harmful if inhaled.

#### Precautionary statement(s)

none

#### HMIS Classification

Health hazard                1

Flammability                 1

Physical hazards            1

#### NFPA Rating

Health hazard                1

Fire                             1

Reactivity Hazard          0

#### Potential Health Effects

Inhalation                    May be harmful if inhaled. May cause respiratory tract irritation.

Skin                            May be harmful if absorbed through skin. May cause skin irritation.

Eyes                            May cause eye irritation.

Ingestion                     May be harmful if swallowed.

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS:

**Synonym** Ethyl citrate  
**Formula** C12 H20 O7  
**Molecular Weight** 276.29 g/mol

CAS-No 77-93-0      EC-No 201-070-7      Index-No.      Concentration

#### 4. FIRST-AID GUIDE:

##### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### **In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

##### **In case of eye contact**

Flush eyes with water as a precaution.

##### **If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 5. FIRE-FIGHTING GUIDE:

##### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### **Special protective equipment for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

##### **Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

#### 6. ACCIDENTAL RELEASE GUIDE:

##### **Personal precautions**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

##### **Environmental precautions**

Do not let product enter drains.

##### **Methods and materials for containment and cleaning up**

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

#### 7. HANDLING AND STORAGE:

**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Normal measures for preventive fire protection.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

**8. EXPOSURE AND PERSONAL PROTECTION:**

Contains no substances with occupational exposure limit values.

**Personal protective equipment:****Respiratory protection**

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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**9. PHYSICAL AND CHEMICAL PROPERTIES:****Appearance**

Form	LIQUID
Color	COLORLESS TO PALE YELLOW

**Safety data**

pH	no data available
Melting point (°C)	-46
Boiling point (°C)	294
Flash point (°F) Closed cup	>200
Vapor pressure (mmHg@20°C)	0.7
Density @25 °C	1.136
Water solubility	SOLUBLE
Relative vapor density	9.7
Odor	CHARACTERISTIC

## 10. STABILITY AND REACTIVITY:

### **Chemical stability**

Stable under recommended storage conditions.

### **Materials to avoid**

Strong oxidizing agents

### **Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides

## 11. TOXICOLOGICAL INFORMATION:

### **Acute toxicity**

#### **Oral LD50**

LD50 Oral - rat - 5,900 mg/kg

Remarks: Behavioral: Altered sleep time (including change in righting reflex). Respiratory disorder Nutritional and

Gross Metabolic: Changes in: Body temperature decrease.

#### **Inhalation LC50**

LC50 Inhalation - rat - 6 h - 1300 ppm

Remarks: Lungs, Thorax, or Respiration: Acute pulmonary edema. Lungs, Thorax, or Respiration: Pleural effusion.

Lungs, Thorax, or Respiration: Dyspnea.

#### **Dermal LD50**

LD50 Dermal - rabbit - > 5,000 mg/kg

### **Carcinogenicity**

IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP:

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### **Potential health effects**

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

### **Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

RTECS: GE8050000

**12. DISPOSAL RECOMMENDATIONS:**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

**13. TRANSPORTATION INFORMATION:**

**DOT (US)**

Not dangerous goods.

**IMDG**

Not dangerous goods.

**IATA**

Not dangerous goods.

**14. REGULATORY INFORMATION:**

**OSHA Hazards**

No known OSHA hazards

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

No SARA Hazards

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

Triethyl citrate	CAS-No.	Revision Date
	77-93-0	

**New Jersey Right To Know Components**

Triethyl citrate	CAS-No.	Revision Date
	77-93-0	

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**15. OTHER INFORMATION:**

The information in this MSDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond M&U's control, it is the responsibility of the user both to determine safe conditions for use of this product and to assume liability for loss, damage, or expense arising out of the products improper use. No warranty expressed or implied regarding the product described herein will be created by or inferred from any statement or omission in the MSDS. Various federal, state, or provincial agencies may have specific regulations concerning the transportation, handling, storage, use, or disposal of this product which may not be reflected in the MSDS. The user should review these regulations to ensure full compliance.

Material Safety Data Sheet prepared by: **M & U International LLC**