

MSDS Number: **T6981** \* \* \* \* \* *Effective Date: 05/25/07* \* \* \* \* \* *Supercedes: 05/07/07*

**MSDS** Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.  
222 Red School Lane  
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtree: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

# 2,3,5-TRIPHENYL-2H-TETRAZOLIUM CHLORIDE

## 1. Product Identification

**Synonyms:** Triphenyltetrazolium chloride; TPTZ; TTC; Tetrazolium Red

**CAS No.:** 298-96-4

**Molecular Weight:** 334.81

**Chemical Formula:** C<sub>19</sub>H<sub>15</sub>CIN<sub>4</sub>

**Product Codes:**

J.T. Baker: X135

Mallinckrodt: 1944

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous	-----	-----
-----	-----	-----
2, 3, 5-TRIPHENYL-2H-TETRAZOLIUM Yes CHLORIDE	298-96-4	90 - 100%

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## 3. Hazards Identification

### Emergency Overview

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**WARNING! MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.**

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

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Health Rating: 2 - Moderate

Flammability Rating: 1 - Slight

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate (Life)

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

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### Potential Health Effects

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Information on the human health effects from exposure to this substance is limited.

#### **Inhalation:**

May cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.

#### **Ingestion:**

May be harmful if swallowed.

#### **Skin Contact:**

May cause irritation. May be absorbed through skin.

#### **Eye Contact:**

May cause irritation.

#### **Chronic Exposure:**

No information found.

#### **Aggravation of Pre-existing Conditions:**

No information found.

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## 4. First Aid Measures

#### **Inhalation:**

Remove to fresh air. Get medical attention for any breathing difficulty.

#### **Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

**Skin Contact:**

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

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## 5. Fire Fighting Measures

**Fire:**

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

**Explosion:**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

None established.

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

### **Skin Protection:**

Wear protective gloves and clean body-covering clothing.

### **Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

### **Appearance:**

White powder.

### **Odor:**

No information found.

### **Solubility:**

Soluble in water.

### **Density:**

No information found.

### **pH:**

No information found.

### **% Volatiles by volume @ 21C (70F):**

0

### **Boiling Point:**

Not applicable.

### **Melting Point:**

243C (469F)

### **Vapor Density (Air=1):**

No information found.

### **Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

May produce carbon monoxide, carbon dioxide, nitrogen oxides and hydrogen chloride when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Strong oxidizers.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

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## 11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

-----\Cancer Lists\-----			
Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
2, 3, 5-TRIPHENYL-2H-TETRAZOLIUM CHLORIDE (298-96-4)	No	No	None

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## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

Not regulated.

## 15. Regulatory Information

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-----\Chemical Inventory Status - Part 1\-----
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Ingredient                                TSCA  EC   Japan
Australia
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-
2,3,5-TRIPHENYL-2H-TETRAZOLIUM CHLORIDE    Yes  Yes  Yes   Yes
(298-96-4)

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-----\Chemical Inventory Status - Part 2\-----
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Ingredient                                Korea  --Canada--  Phil.
                                DSL  NDSL
-----
2,3,5-TRIPHENYL-2H-TETRAZOLIUM CHLORIDE    Yes  Yes  No   Yes
(298-96-4)

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-----\Federal, State & International Regulations - Part 1\-----
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                                -SARA 302-    -----SARA 313-----
Ingredient                                RQ    TPQ    List  Chemical
Catg.
-----
2,3,5-TRIPHENYL-2H-TETRAZOLIUM CHLORIDE    No   No    No    No
(298-96-4)

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-----\Federal, State & International Regulations - Part 2\-----
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Ingredient                                CERCLA  -RCRA-  -TSCA-
                                261.33  8 (d)
-----
2,3,5-TRIPHENYL-2H-TETRAZOLIUM CHLORIDE    No    No    No
(298-96-4)

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Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No

SARA 311/312: Acute: Yes      Chronic: No      Fire: No      Pressure: No  
Reactivity: No                      (Pure / Solid)

**Australian Hazchem Code:** None allocated.

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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## 16. Other Information

**NFPA Ratings:** Health: 1 Flammability: 1 Reactivity: 0

**Label Hazard Warning:**

WARNING! MAY BE HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

**Label Precautions:**

- Avoid breathing dust.
- Avoid contact with eyes, skin and clothing.
- Keep container closed.
- Use only with adequate ventilation.
- Wash thoroughly after handling.

**Label First Aid:**

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 3.

**Disclaimer:**

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