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TETRAZOLIUM RED

Material Safety Data Sheet

1. PRODUCT IDENTIFICATION:

Synonyms: 2,3,5-TRIPHENYL-2H-TETRAZOLIUM CHLORIDE TPTZ; TTC.

CAS No.: 298-96-4.

Molecular Weight: 334.81.

Chemical Formula: C₁₉H₁₅N₄Cl

2. COMPOSITION / INFORMATION ON INGREDIENTS:

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Percent</u>	<u>Hazardous</u>
2,3,5-Triphenyl-2H-tetrazolium chloride	298-96-4	98%	No

3. HAZARDS IDENTIFICATION:

Emergency Overview

Appearance: White to yellow solid. Light sensitive. **CAUTION!** The toxicological properties of this material have not been fully investigated. May cause eye and skin irritation. May cause respiratory tract irritation.

Target Organs: None.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation.

Ingestion: May cause skin gastrointestinal irritation with nausea, vomiting and diarrhea. The toxicological properties of this substance have not been fully investigated.

Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.

Chronic: No information found.

4. FIRST AID MEASURES:

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. Removing from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

5. FIRE FIGHTING MEASURES:

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Vapor may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.

Flash Point: Non-Flammable.

Auto-ignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (Estimated) Health: 1; Flammability: 0; Instability: 0

6. ACCIDENTAL RELEASE MEASURES:

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment Section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Provide ventilation.

7. HANDLING AND STORAGE:

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION:

Engineering Controls: Local exhaust may be necessary to control concentrations to acceptable levels.

Exposure Limits

<u>Chemical Name</u>	<u>ACGIH</u>	<u>NIOSH</u>	<u>OSHA - Final PELs</u>
2,3,5-Triphenyl-2H-tetrazolium chloride	None listed	None listed	None listed.

OSHA Vacated PELs: 2,3,5-Triphenyl-2H-tetrazolium chloride: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Physical State: Solid.

Appearance: White to yellow.

Odor: No odor.

pH: Not available.

Vapor Pressure: Negligible.
Vapor Density: 11.5 (Air=1).
Evaporation Rate: Negligible. .
Viscosity: Not available.
Boiling Point: Decomposes.
Freezing/Melting Point: 245 deg C. (decomposes)
Decomposition Temperature: 245 deg C
Solubility: Soluble in water.
Specific Gravity/Density: Not available.
Molecular Formula: C₁₉H₁₅N₄Cl.
Molecular Weight: 334.80.

10. STABILITY AND REACTIVITY:

Chemical Stability: Stable under normal temperatures and pressures. Materials containing similar functional groups can decompose at elevated temperatures.
Conditions to Avoid: High temperatures, incompatible materials, light excess heat, strong oxidants.
Incompatibilities with Other Materials: Strong oxidizers.
Hazardous Decomposition Products: Hydrogen chloride, nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION:

RTECS#: CAS# 298-96-4: XF8100000.
LD50/LC50: Not available.
Carcinogenicity: CAS# 298-96-4: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Neurotoxicity: No information available.
Mutagenicity: No information available.
Other Studies: None.

12. ECOLOGICAL INFORMATION:

Ecotoxicity: No data available. No information available.
Environmental: No information reported.
Physical: No information available.
Other: None.

13. DISPOSAL CONSIDERATIONS:

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

14. TRANSPORT REGULATIONS:

Not regulated.

15. REGULATORY INFORMATION:

US FEDERAL

TSCA CAS# 298-96-4 is listed on the TSCA inventory.

Health & Safety Reporting List None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules None of the chemicals in this product are under a Chemical Test Rule.

Section 12b None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ) & Section 302 (TPQ) None of the chemicals in this material/products have an RQ or TPQ.

SARA Codes CAS# 298-96-4: Reactive.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act: This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE CAS# 298-96-4 is not present on state lists from CA, PA, Mn, MA, FL, or NJ.

California No Significant Risk Level: None of the chemicals in this product are listed.

EUROPEAN/INTERNATIONAL REGULATIONS

European Labeling in Accordance with EC Directives

Hazard Symbols: XN.

Risk Phrases: R 22 Harmful if swallowed.

Safety Phrases: S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection) CAS# 298-96-4:2

Canada -DSL/NDSL CAS# 298-96-4 is listed on Canada's DSL List.

Canada -WHMIS WHMIS: Not available.

Canadian Ingredient Disclosure List

Exposure Limits

16. DISCLAIMER INFORMATION:

DISCLAIMER:

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