

## SAFETY DATA SHEET

Creation Date 10-Mar-2011

Revision Date 14-Feb-2020

Revision Number 2

### 1. Identification

**Product Name** 2,3,5-Triphenyl-2H-tetrazolium chloride

**Cat No. :** A10870

**CAS-No** 298-96-4  
**Synonyms** Red tetrazolium; TPTZ; TTC

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.  
**Details of the supplier of the safety data sheet**

#### Company

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
**Email:** tech@alfa.com  
www.alfa.com

#### **Emergency Telephone Number**

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660.  
After normal business hours, call Carechem 24 at (866) 928-0789.

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|  |            |
|--|------------|
| Skin Corrosion/Irritation                        | Category 2 |
| Serious Eye Damage/Eye Irritation                | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system.              |            |

#### Label Elements

#### **Signal Word**

Warning

#### **Hazard Statements**

Causes skin irritation  
Causes serious eye irritation  
May cause respiratory irritation



### Precautionary Statements

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Avoid breathing dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Call a POISON CENTER or doctor/physician if you feel unwell

#### Skin

IF ON SKIN: Wash with plenty of soap and water  
 If skin irritation occurs: Get medical advice/attention  
 Take off contaminated clothing and wash before reuse

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If eye irritation persists: Get medical advice/attention

#### Storage

Store in a well-ventilated place. Keep container tightly closed  
 Store locked up

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

None identified

### 3. Composition/Information on Ingredients

| Component                                  | CAS-No   | Weight % |
|--|----------|----------|
| 2H-Tetrazolium, 2,3,5-triphenyl-, chloride | 298-96-4 | >95      |

### 4. First-aid measures

|  |   |
|--|---|
| <b>General Advice</b>                      | If symptoms persist, call a physician.  |
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.   |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. |
| <b>Inhalation</b>                          | Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.      |
| <b>Ingestion</b>                           | Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.             |
| <b>Most important symptoms and effects</b> | None reasonably foreseeable.  |
| <b>Notes to Physician</b>                  | Treat symptomatically   |

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

**Unsuitable Extinguishing Media** No information available

**Flash Point** Not applicable  
**Method -** No information available

### Autoignition Temperature

#### Explosion Limits

**Upper** No data available

**Lower** No data available

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

### Specific Hazards Arising from the Chemical

Decomposes violently at elevated temperatures. Thermal decomposition can lead to release of irritating gases and vapors.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Hydrogen chloride gas.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA

**Health**  
2

**Flammability**  
1

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

## 7. Handling and storage

**Handling** Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

**Storage** Protect from light. Store under an inert atmosphere. Keep container tightly closed in a dry and well-ventilated place. Keep refrigerated.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering Measures** Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

### Personal Protective Equipment

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard

EN166.

|                                 |   |
|---------------------------------|---|
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure. |
| <b>Respiratory Protection</b>   | No protective equipment is needed under normal use conditions.            |
| <b>Hygiene Measures</b>         | Handle in accordance with good industrial hygiene and safety practice.    |

## 9. Physical and chemical properties

|   |   |
|---|---|
| <b>Physical State</b>                         | Solid   |
| <b>Appearance</b>                             | Off-white   |
| <b>Odor</b>                                   | No information available                          |
| <b>Odor Threshold</b>                         | No information available                          |
| <b>pH</b>                                     | No information available                          |
| <b>Melting Point/Range</b>                    | > 235 °C / 455 °F                                 |
| <b>Boiling Point/Range</b>                    | No information available                          |
| <b>Flash Point</b>                            | Not applicable                                    |
| <b>Evaporation Rate</b>                       | Not applicable                                    |
| <b>Flammability (solid,gas)</b>               | No information available                          |
| <b>Flammability or explosive limits</b>       |   |
| <b>Upper</b>                                  | No data available                                 |
| <b>Lower</b>                                  | No data available                                 |
| <b>Vapor Pressure</b>                         | negligible  |
| <b>Vapor Density</b>                          | Not applicable                                    |
| <b>Specific Gravity</b>                       | No information available                          |
| <b>Solubility</b>                             | Soluble in water                                  |
| <b>Partition coefficient; n-octanol/water</b> | No data available                                 |
| <b>Autoignition Temperature</b>               |   |
| <b>Decomposition Temperature</b>              | No information available                          |
| <b>Viscosity</b>                              | Not applicable                                    |
| <b>Molecular Formula</b>                      | C <sub>19</sub> H <sub>15</sub> N <sub>4</sub> Cl |
| <b>Molecular Weight</b>                       | 334.81  |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | None known, based on information available   |
| <b>Stability</b>                        | Light sensitive. Volatile at high temperatures. heat sensitive.  |
| <b>Conditions to Avoid</b>              | Incompatible products. Excess heat. Avoid dust formation. Exposure to light. Exposure to moist air or water.       |
| <b>Incompatible Materials</b>           | Strong oxidizing agents  |
| <b>Hazardous Decomposition Products</b> | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Nitrogen oxides (NO <sub>x</sub> ), Hydrogen chloride gas |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.   |
| <b>Hazardous Reactions</b>              | None under normal processing.  |

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

**Toxicologically Synergistic** No information available

#### Products

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

|                        |  |
|------------------------|--|
| <b>Irritation</b>      | No information available   |
| <b>Sensitization</b>   | No information available   |
| <b>Carcinogenicity</b> | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component                                  | CAS-No   | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|--|----------|------------|------------|------------|------------|------------|
| 2H-Tetrazolium, 2,3,5-triphenyl-, chloride | 298-96-4 | Not listed | Not listed | Not listed | Not listed | Not listed |

|   |  |
|---|--|
| <b>Mutagenic Effects</b>                          | No information available                                       |
| <b>Reproductive Effects</b>                       | No information available.                                      |
| <b>Developmental Effects</b>                      | No information available.                                      |
| <b>Teratogenicity</b>                             | No information available.                                      |
| <b>STOT - single exposure</b>                     | Respiratory system   |
| <b>STOT - repeated exposure</b>                   | None known   |
| <b>Aspiration hazard</b>                          | No information available                                       |
| <b>Symptoms / effects, both acute and delayed</b> | No information available                                       |
| <b>Endocrine Disruptor Information</b>            | No information available                                       |
| <b>Other Adverse Effects</b>                      | The toxicological properties have not been fully investigated. |

## 12. Ecological information

### Ecotoxicity

Do not empty into drains.

|                                      |  |
|--------------------------------------|--|
| <b>Persistence and Degradability</b> | Soluble in water Persistence is unlikely based on information available. |
| <b>Bioaccumulation/ Accumulation</b> | No information available.  |
| <b>Mobility</b>                      | Will likely be mobile in the environment due to its water solubility.    |

## 13. Disposal considerations

|                               |   |
|-------------------------------|---|
| <b>Waste Disposal Methods</b> | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. |
|-------------------------------|---|

## 14. Transport information

|                 |               |
|-----------------|---------------|
| <b>DOT</b>      | Not regulated |
| <b>TDG</b>      | Not regulated |
| <b>IATA</b>     | Not regulated |
| <b>IMDG/IMO</b> | Not regulated |

## 15. Regulatory information

### United States of America Inventory

| Component                                  | CAS-No   | TSCA | TSCA Inventory notification - Active/Inactive | TSCA - EPA Regulatory Flags |
|--|----------|------|---|-----------------------------|
| 2H-Tetrazolium, 2,3,5-triphenyl-, chloride | 298-96-4 | X    | ACTIVE  | -                           |

**Legend:**

TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

**International Inventories**

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

| Component                                  | CAS-No   | DSL | NDSL | EINECS    | PICCS | ENCS | AICS | IECSC | KECL     |
|--|----------|-----|------|-----------|-------|------|------|-------|----------|
| 2H-Tetrazolium, 2,3,5-triphenyl-, chloride | 298-96-4 | X   | -    | 206-071-6 | X     | -    | X    | X     | KE-34747 |

**U.S. Federal Regulations**

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade No information available

**16. Other information**

Prepared By Health, Safety and Environmental Department  
 Email: tech@alfa.com  
 www.alfa.com

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**Disclaimer**

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**End of SDS**