

# THALLIUM (I) SULFATE

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## 1. Product Identification

**Synonyms:** Thallous sulfate; dithallium sulfate

**CAS No.:** 7446-18-6

**Molecular Weight:** 504.85

**Chemical Formula:**  $Tl_2SO_4$

**Product Codes:** CHEM-335 and others.

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Thallium (I) Sulfate	7446-18-6	99 - 100%	Yes

## 3. Hazards Identification

DANGER! Thallium compounds, especially if water soluble, are highly poisonous by ingestion. Thallium compounds have been used as a rat poison.

### Emergency Overview

**SAF-T-DATA<sup>(tm)</sup> Ratings**

Health Rating: 3 - Severe (Poison)

Flammability Rating: 0 - None

Reactivity Rating: 0 - None

Contact Rating: 2 - Moderate

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

Storage Color Code: Blue (Health)

### Potential Health Effects:

#### Primary Route of Exposure:

##### Inhalation:

May be irritating to the nose, mucous membranes and respiratory tract. Thallium poisoning may occur.

##### Ingestion:

Ingestion may result in swelling of the feet and legs, mental confusion, paralysis, angina-like pains, wasting and weakness.

##### Skin Contact:

May cause slight to mild irritation of the eyes.

##### Eye Contact:

May cause slight to mild irritation of the eyes.

**Chronic Exposure:**

Prolonged exposure to thallium compounds has been reported to lead to discoloration of the hair, which later falls out, joint pain, loss of appetite, fatigue, severe pain in the legs, albuminuria, and optic neuritis. Possible mutagen.

**Acute Health Effects:**

Acute poisoning, after 1-10 days, results in pain of the extremities, fever, difficulty in moving, vomiting, followed by jumbled speech, tremors, convulsions, kidney failure, and pulmonary edema.

## 4. First Aid Measures

**Inhalation:**

Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance.

**Ingestion:**

Seek medical assistance immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

**Skin Contact:**

Wash affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

**Eye Contact:**

Immediately flush the eyes with copious amounts of water for at least 15 minutes. Assure flushing under eyelids. A victim may need assistance in keeping their eyelids open. Get immediate competent medical attention.

## 5. Fire Fighting Measures

**Fire:**

Not considered to be a fire hazard.

**Explosion:**

Not considered to be an explosion hazard.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

**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.

## 6. Accidental Release Measures

Small spills can be mixed with powdered sodium carbonate or ground limestone and swept up.

## 7. Handling and Storage

Store material in a tightly sealed container away from moisture.

## 8. Exposure Controls/Personal Protection

**Engineering Controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne

levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection:**

Always wear approved safety glasses w/side shields, or safety goggles, face shield when handling a chemical substance in the laboratory.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits:** Not available.

## 9. Physical and Chemical Properties

**Appearance:**

White crystals.

**Odor:**

Odorless.

**Solubility:**

4.87g/100 ml water (20°C)

**Density:**

6.77

**pH:**

No information found.

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

0

**Boiling Point:**

Not applicable.

**Melting Point:**

Decomposes.

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

No information found.

**Vapor Pressure (mm Hg):**

Not applicable.

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

No information found.

## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

May produce acrid smoke and irritating fumes when heated to decomposition.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

No incompatibility data found.

**Conditions to Avoid:**

Heat and incompatibles.

## 11. Toxicological Information

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

### RTECS Data:

Oral (human-man);  $LDL_0$ : 3 mg/kg. Oral (human-man);  $TDL^0$ : 7 ug/kg. Oral (human-man);  $LDL_0$ : 14 mg/kg. Oral (human);  $LDL_0$ : 2166 ug/kg. Oral (rat);  $LD_{50}$ : 16 mg/kg. Administration onto the skin (rat);  $LD_{50}$ : 5500 mg/kg. Subcutaneous (rat);  $LDL_0$ : 13 mg/kg. Oral (dog);  $LDL_0$ : 16 mg/kg. Oral (rat);  $TDL_0$ : 9 mg/kg/15D-1. Oral (rat);  $LDL_0$ : 57 mg/kg.

### Mutagenic Effects:

No data

### Tetratogenic Effects:

No data

### Carcinogenic Effects:

No data

## 12. Ecological Information

### Environmental Fate:

No information found.

### Environmental Toxicity:

No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste 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

### Domestic (Land, D.O.T.)

Thallium compound, n.o.s., (Thallium sulfate), Class 6.1, UN 1707, PG II

## 15. Regulatory Information

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.

## 16. Other Information

### Label Hazard Warning:

POISON!

### Label Precautions:

Store in a tightly closed container.

Remove and wash contaminated clothing promptly.

Wash thoroughly after handling.

Avoid contact with eyes, skin and clothing.

Avoid breathing dust.

**Label First Aid:**

Seek medical assistance immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

**Product Use:**

Laboratory Reagent and Consumer Hobby.

**Revision Information:**

None

**Disclaimer:**

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