

## Material Safety Data Sheet

Date Printed: 31/MAY/2005

Date Updated: 13/MAR/2004

Version 1.1

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

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1 - Product and Company Information

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|                   |   |
|-------------------|---|
| Product Name      | THALLIUM(III) NITRATE TRIHYDRATE, 98%   |
| Product Number    | 163015  |
| Company           | Sigma-Aldrich Pty, Ltd<br>Unit 2, 14 Anella Avenue<br>Castle Hill NSW 1765<br>Australia |
| Technical Phone # | +61 2 9841 0555   |
| Fax               | +61 2 9841 0500   |
| Emergency Phone # | +61 2 9841 0566   |

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2 - Composition/Information on Ingredients

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| Product Name                     | CAS #         | EC no | Annex I<br>Index Number |
|----------------------------------|---------------|-------|-------------------------|
| THALLIUM(III) NITRATE TRIHYDRATE | 13453-38-8    | None  | None                    |
| Formula                          | Tl(NO3)3.3H2O |       |                         |
| Molecular Weight                 | 444.43 AMU    |       |                         |

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3 - Hazards Identification

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## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Very toxic by inhalation and if swallowed. Danger of cumulative effects. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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4 - First Aid Measures

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## AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

## AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

## GENERAL INFORMATION

For thallium antidote, see Eur. J. Pharmacol., 6, 340 (1969).

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5 - Fire Fighting Measures

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## EXTINGUISHING MEDIA

Suitable: Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

## SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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### 6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL  
Evacuate area.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

#### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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### 7 - Handling and Storage

#### HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing.

#### STORAGE

Conditions of Storage: Keep tightly closed. Store in a cool dry place.

SPECIAL REQUIREMENTS: Hygroscopic.

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### 8 - Exposure Controls / Personal Protection

#### ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

#### PERSONAL PROTECTIVE EQUIPMENT

Special Protective Measures: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

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### 9 - Physical and Chemical Properties

|                      |                                    |                            |
|----------------------|------------------------------------|----------------------------|
| Appearance           | Color: Colorless<br>Form: Crystals |                            |
| Property             | Value                              | At Temperature or Pressure |
| pH                   | N/A                                |                            |
| BP/BP Range          | N/A                                |                            |
| MP/MP Range          | 105 °C                             |                            |
| Flash Point          | N/A                                |                            |
| Flammability         | N/A                                |                            |
| Autoignition Temp    | N/A                                |                            |
| Oxidizing Properties | N/A                                |                            |
| Explosive Properties | N/A                                |                            |

|                       |     |
|-----------------------|-----|
| Explosion Limits      | N/A |
| Vapor Pressure        | N/A |
| SG/Density            | N/A |
| Partition Coefficient | N/A |
| Viscosity             | N/A |
| Vapor Density         | N/A |
| Saturated Vapor Conc. | N/A |
| Evaporation Rate      | N/A |
| Bulk Density          | N/A |
| Decomposition Temp.   | N/A |
| Solvent Content       | N/A |
| Water Content         | N/A |
| Surface Tension       | N/A |
| Conductivity          | N/A |
| Miscellaneous Data    | N/A |
| Solubility            | N/A |

## 10 - Stability and Reactivity

### STABILITY

Materials to Avoid: Strong oxidizing agents, Strong acids.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Nitrogen oxides, Thallium.

## 11 - Toxicological Information

### SIGNS AND SYMPTOMS OF EXPOSURE

The most characteristic symptom of thallium exposure is alopecia (loss of hair). Cutaneous effects may include dry, scaly skin and impairment of nail growth often resulting in the appearance of crescent-shaped strips across fingernails and toenails (Mees' line). Other symptoms in acute poisoning relate chiefly to the gastrointestinal tract, nervous system, skin, eyes, and cardiovascular system. Acute poisoning results in swelling of the feet and legs, arthralgia, vomiting, insomnia, hyperesthesia and paresthesia of the hands and feet, mental confusion, polyneuritis with severe pain in the legs and loins, partial paralysis of the legs, angina-like pains, nephritis, wasting and weakness, and lymphocytosis and eosinophilia. In chronic poisoning, central and peripheral nervous system abnormalities may persist including ataxia, tremor, incoordination, paralysis of extremities, endocrine disorders, memory loss, and psychoses may develop. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Eye Contact: May cause eye irritation. Can cause blindness.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract.

Multiple Routes: May be fatal if inhaled, swallowed, or absorbed through skin.

### TARGET ORGAN INFORMATION

Nerves. Cardiovascular system. Eyes. Skin. Liver. Kidneys. Male reproductive system.

## 12 - Ecological Information

No data available.

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

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## 14 - Transport Information

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### RID/ADR

UN#: 2727  
Class: 6.1  
PG: II  
Proper Shipping Name: Thallium nitrate

### IMDG

UN#: 2727  
Class: 6.1  
PG: II  
Subrisk: 5.1  
Proper Shipping Name: Thallium nitrate  
Marine Pollutant: Yes  
Severe Marine Pollutant: No

### IATA

UN#: 2727  
Class: 6.1  
PG: II  
Subrisk: 5.1  
Proper Shipping Name: Thallium nitrate  
Inhalation Packing Group I: No

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: T+ N

Very toxic. Dangerous for the environment.

R-PHRASES: 26/28 33 51/53

Very toxic by inhalation and if swallowed. Danger of cumulative effects. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-PHRASES: 13 28 45 61

Keep away from food, drink, and animal feedingstuffs. After contact with skin, wash immediately with plenty of water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

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## 16 - Other Information

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### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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