

Material Safety Data Sheet

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Version 1.1

According to 91/155/EEC

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

1 - Product and Company Information

Product Name THALLIUM(I) SULFATE, 99.995%
Product Number 204625

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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
THALLIUM (I) SULFATE	7446-18-6	231-201-3	081-003-00-4

Formula Tl_2SO_4

Molecular Weight 504.8 AMU

Synonyms C.F.S. * CSF-giftweizen * Dithallium sulfate *
Dithallium(1+) sulfate * Eccothal *
M7-Giftkoerner * Rattengiftkonserve * RCRA waste
number P115 * Sulfuric acid, dithallium(1+) salt
(8CI,9CI) * Sulfuric acid, thallium(1+) salt
(1:2) * Thallium sulfate * Thallium(1) sulfate *
Thallous sulfate * Tharattin * Zelio

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Very toxic if swallowed. Irritating to skin. Toxic to aquatic organisms.

4 - First Aid Measures

AFTER INHALATION

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

GENERAL INFORMATION

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

5 - Fire Fighting Measures

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.

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.

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.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

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

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	0.1 mg/m ³

Remarks: SKIN

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	TWA	0.1MG(TL)/M ³

Remarks: Skin

PERSONAL PROTECTIVE EQUIPMENT

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

9 - Physical and Chemical Properties

Appearance N/A

Property Value At Temperature or Pressure

pH	N/A
BP/BP Range	N/A
MP/MP Range	632 °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	6.77 g/cm3
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.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Thallium.

11 - Toxicological Information

RTECS NUMBER: XG6800000

ACUTE TOXICITY

LDLO

Oral

Man

3 mg/kg

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Behavioral:Ataxia. Behavioral:Irritability.

LDLO

Oral

Man

14 mg/kg

Remarks: Peripheral Nerve and Sensation:Structural change in nerve or sheath. Behavioral:Somnolence (general depressed activity). Cardiac: Change in rate.

LDLO

Oral

Human

2.166 mg/kg

LD50

Oral

Rat

16 mg/kg

LD50

Skin

Rat

550 mg/kg

Remarks: Behavioral: Ataxia. Lungs, Thorax, or
Respiration: Dyspnea. Skin and Appendages: Other: Hair.

LD50

Oral

Mouse

23.5 mg/kg

LD50

Subcutaneous

Mouse

26600 UG/KG

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.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Species: Rat

Dose: 57 MG/KG

Route of Application: Oral

Exposure Time: (60D MALE)

Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

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

14 - Transport Information

RID/ADR

UN#: 1707
Class: 6.1
PG: II
Proper Shipping Name: Thallium compound, n.o.s..

IMDG

UN#: 1707
Class: 6.1
PG: II
Proper Shipping Name: THALLIUM COMPOUND, N.O.S.
Marine Pollutant: Yes
Severe Marine Pollutant: No
Technical Name: Required

IATA

UN#: 1707
Class: 6.1
PG: II
Proper Shipping Name: THALLIUM COMPOUND, N.O.S.
Inhalation Packing Group I: No
Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 081-003-00-4

INDICATION OF DANGER: T+ N

Very toxic. Dangerous for the environment.

R-PHRASES: 28 38 51

Very toxic if swallowed. Irritating to skin. Toxic to aquatic organisms.

S-PHRASES: 13 36/37 45 61

Keep away from food, drink, and animal feedingstuffs. Wear suitable protective clothing and gloves. 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.

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 2

SWITZERLAND

SWISS POISON CLASS: 1

16 - Other Information

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. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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