

MATERIAL SAFETY DATA SHEET

Thallium-1- Acetate

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Thallium-1-Acetate Date: 11th December 2019 Version: Discofinechem4
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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Acute toxicity, Inhalation (Category 2)

Acute toxicity, Oral (Category 2)

Specific target organ toxicity - repeated exposure (Category 2)

Chronic aquatic toxicity (Category 2)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

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.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram



Signal word: Danger

Hazard statement(s)

H300 Fatal if swallowed.

H330 Fatal if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260 Do not breathe dust.

P264 Wash hands thoroughly after handling.

P273 Avoid release to the environment.

P284 Wear respiratory protection.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P310 Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard Statements: none

According to European Directive 67/548/EEC as amended.

Hazard symbol(s)



R-phrases(s)

R26/28 Very toxic by inhalation and if swallowed.

R33 Danger of cumulative effects.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S13 Keep away from food, drink and animal feeding stuffs.

S28 After contact with skin, wash immediately with plenty of soap and water.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: Acetic acidthallium (I) salt

Formula: C₂H₃O₂TI Molecular Weight: 263.43 g/mol

CAS No: 563-68-8 E.C.No: 209-257-5 Index No: 081-002-00-9

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component: Thallium acetate

CAS No: 563-68-8 E.C.No: 209-257-5 Index No: 081-002-00-9

Classification: Acute Tox. 2; STOT RE 2; Aquatic Chronic 2; H300 + H330, H373, H411

Concentration <= 100 %

Hazardous ingredients according to Directive 1999/45/EC

Component: Thallium acetate

Cas No: 563-68-8 E.C.No: 209-257-5 Index No: 081-002-00-9

Classification: T+, N, R26/28 - R33 - R51/53 Concentration: <= 100 %

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice - Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled - If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact - Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact - Flush eyes with water as a precaution.

If swallowed - Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed - 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.

4.3 Indication of any immediate medical attention and special treatment needed - no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media - Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture - Nature of decomposition products not known.

5.3 Advice for firefighters - Wear self contained breathing apparatus for firefighting if necessary.

5.4 Further information - no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions - Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up - Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections - For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end uses - no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component: Thallium-1-acetate

CAS No. 563-68-8 Value: TWA Control parameters: 0.1 mg/m³ Basis: UK. EH40 WEL - Workplace

Exposure Limits – Remarks: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used

8.2 Exposure controls

Appropriate engineering controls - Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection - Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection - Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril®

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril®

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de,

test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection - Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection - Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure - Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance - Form: solid Colour: beige
- b) Odour - no data available
- c) Odour Threshold - no data available
- d) pH - no data available
- e) Melting point/freezing point - Melting point/range: 126 °C - dec.
- f) Initial boiling point and boiling range - no data available
- g) Flash point - no data available
- h) Evaporation rate - no data available
- i) Flammability (solid, gas) - no data available
- j) Upper/lower flammability or explosive limits - no data available
- k) Vapour pressure - no data available
- l) Vapour density - no data available
- m) Relative density – 3680g/cm³
- n) Water solubility - soluble
- o) Partition coefficient: no data available
- p) Auto-ignition temperature - no data available
- q) Decomposition temperature - no data available
- r) Viscosity - no data available
- s) Explosive properties - no data available
- t) Oxidizing properties - no data available

9.2 Other safety information - no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity - no data available

10.2 Chemical stability - no data available

10.3 Possibility of hazardous reactions - no data available

10.4 Conditions to avoid - Avoid moisture.

10.5 Incompatible materials - Strong oxidizing agents, Strong acids

10.6 Hazardous decomposition products - Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - rat - 41.3 mg/kg

Remarks: Behavioral: Convulsions or effect on seizure threshold.

Gastrointestinal: Other changes. Blood: Hemorrhage.

Skin corrosion/irritation - no data available

Serious eye damage/eye irritation - no data available

Respiratory or skin sensitization - no data available

Germ cell mutagenicity - Laboratory experiments have shown mutagenic effects.

Hamster

Embryo

Morphological transformation.

Carcinogenicity - This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Developmental Toxicity - rat - Oral

Specific Developmental Abnormalities: Musculoskeletal system.

Specific target organ toxicity - single exposure - no data available

Specific target organ toxicity - repeated exposure - no data available

Aspiration hazard - no data available

Potential health effects

Inhalation: May be fatal if inhaled. May cause respiratory tract irritation.

Ingestion: May be fatal if swallowed.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

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.

Additional Information - RTECS: Not available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - Menidia beryllina - 31 mg/l - 96 h

12.2 Persistence and degradability - no data available

12.3 Bio-accumulative potential - no data available

12.4 Mobility in soil - no data available

12.5 Results of PBT and vPvB assessment - no data available

12.6 Other adverse effects - Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product - Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging - Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 1707 IMDG: 1707 IATA: 1707

14.2 UN proper shipping name

ADR/RID: THALLIUM COMPOUND, N.O.S. (Thallium (III) acetate sesquihydrate)

IMDG: THALLIUM COMPOUND, N.O.S. (Thallium (III) acetate sesquihydrate)

IATA: Thallium compound, n.o.s.

14.3 Transport hazard class(es)

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

ADR/RID: yes IMDG Marine pollutant: yes IATA: no

14.6 Special precautions for user - no data available

5. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

no data available

15.2 Chemical Safety Assessment - no data available

16. OTHER INFORMATION

Further information

Text of H-code(s) and R-phrase(s) mentioned in Section 2 and 3

H300 Fatal if swallowed.

H330 Fatal if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

STOT RE Specific target organ toxicity - repeated exposure

R26/28 Very toxic by inhalation and if swallowed.

R33 Danger of cumulative effects.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.

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