

1 Identification

Product identifier

Product name: Thallium(I) hexafluoro-2,4-pentanedionate

Stock number: 14710

CAS Number:

15444-43-6

Index number:

081-002-00-9

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

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

Information Department: Health, Safety and Environmental Department

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 of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to the blood through prolonged or repeated exposure. Route of exposure: Oral.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS06 GHS08

Signal word

Danger

Hazard statements

H300+H330 Fatal if swallowed or if inhaled.

H373 May cause damage to the blood through prolonged or repeated exposure. Route of exposure: Oral.

Precautionary statements

P280 Wear protective gloves / protective clothing.

P273 Avoid release to the environment.

P309 IF exposed or if you feel unwell:

P310 Immediately call a POISON CENTER/doctor/...

P302+P352 IF ON SKIN: Wash with plenty of water/...

P420 Store away from foodstuffs.

WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH **3** Health (acute effects) = 3

FIRE **1** Flammability = 1

REACTIVITY **1** Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

15444-43-6 Thallium(I) hexafluoro-2,4-pentanedionate

Identification number(s):

Index number: 081-002-00-9

4 First-aid measures

Description of first aid measures

General information

Immediately remove any clothing soiled by the product.

Product name: Thallium(I) hexafluoro-2,4-pentanedionate

Remove breathing apparatus only after contaminated clothing has been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Do not induce vomiting; immediately call for medical help.

Information for doctor

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

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5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents CO₂, sand, extinguishing powder. Do not use water.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen fluoride (HF)

Toxic metal oxide fume

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires: No information known.

Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

Thallium and soluble thallium compounds (as Tl)
mg/m³

ACGIH TLV 0.1 (skin)

Austria MAK 0.1

Belgium TWA 0.1 (skin)

Denmark TWA 0.1 (skin)

Finland TWA 0.1 (skin)

France VME 0.1

Germany MAK 0.1

Ireland TWA 0.1 (skin)

Korea TLV 0.1 (skin)

Netherlands MAC-TGG 0.1 (skin)

Norway TWA 0.1

Poland TWA 0.1; 0.3-STEL

Switzerland MAK-W 0.1 (skin)

United Kingdom LTEL 0.1 (skin)

USA PEL 0.1 (skin)

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

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USA

Product name: Thallium(I) hexafluoro-2,4-pentanedionate																									
Maintain an ergonomically appropriate working environment. Breathing equipment: Use self-contained respiratory protective device in emergency situations. Protection of hands: Impervious gloves Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. Eye protection: Safety glasses Body protection: Protective work clothing. (Contd. of page 2)																									
9 Physical and chemical properties																									
Information on basic physical and chemical properties General Information Appearance: <table><tr><td>Form:</td><td>Powder</td></tr><tr><td>Color:</td><td>White</td></tr><tr><td>Odor:</td><td>Not determined</td></tr><tr><td>Odor threshold:</td><td>Not determined.</td></tr></table> pH-value: Not applicable. Change in condition <table><tr><td>Melting point/Melting range:</td><td>126-128 °C (259-262 °F)</td></tr><tr><td>Boiling point/Boiling range:</td><td>220 °C (428 °F) (dec)</td></tr><tr><td>Sublimation temperature / start:</td><td>140 °C (284 °F) (0.1mm Hg)</td></tr></table> Flash point: Not applicable Flammability (solid, gaseous) Not determined. Ignition temperature: Not determined Decomposition temperature: Not determined Auto igniting: Not determined. Danger of explosion: Product does not present an explosion hazard. Explosion limits: <table><tr><td>Lower:</td><td>Not determined</td></tr><tr><td>Upper:</td><td>Not determined</td></tr></table> Vapor pressure: Not applicable. Density: Not determined Relative density Not determined. Vapor density Not applicable. Evaporation rate Not applicable. Solubility in / Miscibility with <table><tr><td>Water:</td><td>Insoluble</td></tr></table> Partition coefficient (n-octanol/water): Not determined. Viscosity: <table><tr><td>dynamic:</td><td>Not applicable.</td></tr><tr><td>kinematic:</td><td>Not applicable.</td></tr></table> Other information No further relevant information available.		Form:	Powder	Color:	White	Odor:	Not determined	Odor threshold:	Not determined.	Melting point/Melting range:	126-128 °C (259-262 °F)	Boiling point/Boiling range:	220 °C (428 °F) (dec)	Sublimation temperature / start:	140 °C (284 °F) (0.1mm Hg)	Lower:	Not determined	Upper:	Not determined	Water:	Insoluble	dynamic:	Not applicable.	kinematic:	Not applicable.
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10 Stability and reactivity Reactivity No information known. Chemical stability Stable under recommended storage conditions. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Possibility of hazardous reactions No dangerous reactions known Conditions to avoid No further relevant information available. Incompatible materials: Oxidizing agents Hazardous decomposition products: Carbon monoxide and carbon dioxide Hydrogen fluoride Toxic metal oxide fume																									
11 Toxicological information Information on toxicological effects Acute toxicity: Fatal if inhaled. Fatal if swallowed. LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Irritant to skin and mucous membranes. Eye irritation or corrosion: Irritating effect. Sensitization: No sensitizing effects known. Germ cell mutagenicity: No effects known. Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: May cause damage to the blood through prolonged or repeated exposure. Route of exposure: Oral. Specific target organ system toxicity - single exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: The main symptoms of thallium poisoning are peripheral neuropathy and loss of hair. Acute poisoning causes paresthesias, ataxia, alopecia, fever, coryza, abdominal pain, nausea and vomiting. Symptoms may progress to lethargy, speech disorders, tremors, convulsions, cyanosis, pulmonary edema, bronchopneumonia and death. Kidney, liver and brain damage can occur. Thallium poisoning during the first trimester of pregnancy can cause skeletal deformities, alopecia, low birth weight and premature birth. Chronic thallium poisoning may produce alopecia, salivation and a blue line on the gums. Damage to the gastrointestinal, endocrine system and kidneys may also occur. Subacute to chronic toxicity: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.																									
12 Ecological information Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: Remark: Toxic for aquatic organisms																									
(Contd. on page 4) USA																									

Product name: Thallium(I) hexafluoro-2,4-pentanedionate	
Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Toxic for aquatic organisms Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. Toxic to aquatic life. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.	

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13 Disposal considerations	
Waste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.	

14 Transport information	
UN-Number DOT, IMDG, IATA	UN1707
UN proper shipping name DOT IMDG IATA	Thallium compounds, n.o.s. (Thallium(I) hexafluoro-2,4-pentanedionate) THALLIUM COMPOUND, N.O.S. (Thallium(I) hexafluoro-2,4-pentanedionate), MARINE POLLUTANT THALLIUM COMPOUND, N.O.S. (Thallium(I) hexafluoro-2,4-pentanedionate)
Transport hazard class(es) DOT	
 	
Class Label Class Label IMDG	6.1 Toxic substances. 6.1 6.1 (T5) Toxic substances 6.1
 	
Class Label IATA	6.1 Toxic substances. 6.1
	
Class Label	6.1 Toxic substances. 6.1
Packing group DOT, IMDG, IATA	II
Environmental hazards: Marine pollutant (IMDG):	Environmentally hazardous substance, solid; Marine Pollutant Symbol (fish and tree)
Special precautions for user	Warning: Toxic substances
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information: DOT Marine Pollutant (DOT): Remarks:	No Special marking with the symbol (fish and tree).
UN "Model Regulation":	UN1707, Thallium compounds, n.o.s. (Thallium(I) hexafluoro-2,4-pentanedionate), 6.1, II

15 Regulatory information	
Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms	
 	
GHS06 GHS08	
Signal word Hazard statements H300+H330 Fatal if swallowed or if inhaled. H373 May cause damage to the blood through prolonged or repeated exposure. Route of exposure: Oral.	
Precautionary statements P280 Wear protective gloves / protective clothing. P273 Avoid release to the environment. P309 IF exposed or if you feel unwell. P310 Immediately call a POISON CENTER/doctor/... P302+P352 IF ON SKIN: Wash with plenty of water/...	

(Contd. on page 5)
USA

Product name: Thallium(I) hexafluoro-2,4-pentanedionate	
P420 Store away from foodstuffs.	(Contd. of page 4)
National regulations This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.	
SARA Section 313 (specific toxic chemical listings)	
15444-43-6	Thallium(I) hexafluoro-2,4-pentanedionate
California Proposition 65 Prop 65 - Chemicals known to cause cancer Substance is not listed. Prop 65 - Developmental toxicity Substance is not listed. Prop 65 - Developmental toxicity, female Substance is not listed. Prop 65 - Developmental toxicity, male Substance is not listed. Information about limitation of use: For use only by technically qualified individuals. This product contains thallium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372. Other regulations, limitations and prohibitive regulations Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed. The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed. Substance is not listed. Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	
16 Other information Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user. Department issuing SDS: Global Marketing Department Date of preparation / last revision 11/24/2015 / - Abbreviations and acronyms: ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent vPvB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)	
USA	