

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**Product Identifier**

Perihalan Produk: **Thallium(I) nitrate, 99.5+% (metals basis)**  
 Product Description: **Thallium(I) nitrate, 99.5+% (metals basis)**  
 Cat No. : S55208  
 Synonyms Thallous Nitrate  
 CAS No 10102-45-1  
 Molecular Formula N O3 TI

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

Recommended Use Laboratory chemicals.  
 Uses advised against No Information available

**Company**

Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd  
 Hap Seng Business Park, Lot 01-03, 01-04 Aras 1 Unity Square,  
 No 12, Persiaran Perusahaan, Seksyen 23, 40300 Shah Alam,  
 Selangor Darul Ehsan, Malaysia.  
 Main line: +60 3-5525 7888

**Supplier**

E-mail address Enquiry.my@thermofisher.com

**Emergency Telephone Number**

Tel: +03-5525 7888  
 CHEMTREC Malaysia 1-800-815-308 (Malay)  
 CHEMTREC Malaysia (Kuala Lumpur) +(60)-327884561 (Malay)

**SECTION 2: HAZARDS IDENTIFICATION**
**Classification of the substance or mixture**

Oxidizing solids	Category 3 (H272)
Acute oral toxicity	Category 2 (H300)
Acute Inhalation Toxicity - Dusts and Mists	Category 2 (H330)
Specific target organ toxicity - (repeated exposure)	Category 2 (H373)
Chronic aquatic toxicity	Category 2 (H411)

**Label Elements**


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## Signal Word

## Danger

### Hazard Statements

H272 - May intensify fire; oxidizer

H300 - Fatal if swallowed

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

H411 - Toxic to aquatic life with long lasting effects

H330 - Fatal if inhaled

### Precautionary Statements

#### Prevention

P220 - Keep away from clothing and other combustible materials

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P264 - Wash face, hands and any exposed skin thoroughly after handling

P221 - Take any precaution to avoid mixing with combustibles

P270 - Do not eat, drink or smoke when using this product

P271 - Use only outdoors or in a well-ventilated area

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P284 - Wear respiratory protection

#### Response

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P310 - Immediately call a POISON CENTER or doctor

P330 - Rinse mouth

#### Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

#### Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

### Other Hazards

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Thallium(I) nitrate	10102-45-1	>95

## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

#### General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

#### Eye Contact

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

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<b>Ingestion</b>	Do NOT induce vomiting. Call a physician or poison control center immediately.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

## Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

## Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

#### **Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### **Extinguishing media which must not be used for safety reasons**

No information available.

### Special hazards arising from the substance or mixture

Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.).

#### **Hazardous Combustion Products**

Nitrogen oxides (NOx).

### Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

### Environmental precautions

Should not be released into the environment.

### Methods and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

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## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment/face protection. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance. Use only under a chemical fume hood.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Store under an inert atmosphere. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place.

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Component	Malaysia	ACGIH TLV	OSHA PEL
Thallium(I) nitrate		TWA: 0.02 mg/m <sup>3</sup> Skin	Skin

Component	European Union	The United Kingdom	Germany
Thallium(I) nitrate		STEL: 0.3 mg/m <sup>3</sup> 15 min TWA: 0.1 mg/m <sup>3</sup> 8 hr Skin	

### Exposure Controls

#### Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### **Eye Protection**

Goggles

#### **Hand Protection**

Protective gloves

#### **Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

#### **Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

#### **Recommended Filter type:**

Particulates filter conforming to EN 143

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

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## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

## Environmental exposure controls

Prevent product from entering drains Do not allow material to contaminate ground water system

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	White	
Physical State	Solid	
Odor	Odorless	
Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	206 °C / 402.8 °F	
Softening Point	No data available	
Boiling Point/Range	433 °C / 811.4 °F	@ 760 mmHg
Flash Point	No information available	<b>Method -</b> No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	95 g/L (20°C)	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Autoignition Temperature	No data available	
Decomposition Temperature	450 °C	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	Oxidizer	
Molecular Formula	N O3 TI	
Molecular Weight	266.38	

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

Yes.

### Chemical Stability

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Oxidizer: Contact with combustible/organic material may cause fire. Hygroscopic.

## Possibility of Hazardous Reactions

### **Hazardous Polymerization Hazardous Reactions**

Hazardous polymerization does not occur.  
None under normal processing.

## Conditions to Avoid

Incompatible products. Excess heat. Combustible material. Avoid dust formation. Exposure to moist air or water.

## Incompatible Materials

Strong oxidizing agents. Reducing Agent. Strong acids. Strong reducing agents.  
Combustible material.

## Hazardous Decomposition Products

Nitrogen oxides (NO<sub>x</sub>).

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Product Information

##### (a) acute toxicity;

Oral	Category 2
Dermal	No data available
Inhalation	Category 2

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

##### (d) respiratory or skin sensitization;

Respiratory	No data available
Skin	No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

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(i) STOT-repeated exposure;	Category 2
Target Organs	Liver, Kidney.
(j) aspiration hazard;	Not applicable Solid
Other Adverse Effects	The toxicological properties have not been fully investigated.
Symptoms / effects, both acute and delayed	No information available.
Endocrine Disrupting Properties	Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

<u>Ecotoxicity effects</u>	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.
<u>Persistence and degradability</u>	
Persistence	Soluble in water, Persistence is unlikely, based on information available.
Degradability	Not relevant for inorganic substances.
Degradation in sewage treatment plant	Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.
<u>Bioaccumulative potential</u>	Bioaccumulation is unlikely
<u>Mobility in soil</u>	The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.
<u>Endocrine Disruptor Information</u>	This product does not contain any known or suspected endocrine disruptors
<u>Other adverse effects</u>	No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

<u>Waste treatment methods</u>	
Waste from Residues/Unused Products	Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point.
Other Information	Do not flush to sewer Do not let this chemical enter the environment Waste codes should be assigned by the user based on the application for which the product was used Do not empty into drains

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## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

UN-No UN2727  
Hazard Class 6.1  
Subsidiary Hazard Class 5.1  
Packing Group II  
Proper Shipping Name THALLIUM NITRATE

### Road and Rail Transport

UN-No UN2727  
Hazard Class 6.1  
Subsidiary Hazard Class 5.1  
Packing Group II  
Proper Shipping Name THALLIUM NITRATE

### IATA

UN-No UN2727  
Hazard Class 6.1  
Subsidiary Hazard Class 5.1  
Packing Group II  
Proper Shipping Name THALLIUM NITRATE

Special Precautions for User No special precautions required

## SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

Component	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	IECSC	AICS	KECL
Thallium(I) nitrate	233-273-1	X	-	X	X	X	X	X	X

Component	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Thallium(I) nitrate				Annex I - Y30

### National Regulations

Persistent Organic Pollutant This product does not contain any known or suspected substance  
Ozone Depletion Potential This product does not contain any known or suspected substance

## SECTION 16: OTHER INFORMATION

### Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b)  
Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical

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Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**IECSC** - Chinese Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances  
**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

## Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

Prepared By

Health, Safety and Environmental Department

Revision Date

31-Mar-2025

Revision Summary

Not applicable.

**In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013**

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**