SAFETY DATA SHEET

Issue Date 02-Dec-2025
Revision Number 1.01

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

Product identifier
Product Name Thallium Standard Solution (Tl 1000)[CRM]
Other means of identification
Product Code(s) 206-21721

Recommended use of the chemical and restrictions on use
Recommended Use For research use only.
Uses advised against Seek expert judgment when using for purposes other than those recommended.

Details of the supplier of the safety data sheet

Manufacturer Address
FUJIFILM Wako Pure Chemical Corporation
1-2, Doshomachi 3-Chome,
Chuo-ku Osaka 540-8605, Japan
Tel : +81-6-6203-3741
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Distributor
FUJIFILM Irvine Scientific
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2. HAZARDS IDENTIFICATION

GHS classification
Classification of the substance or mixture

Corrosive to metals	Category 1
Acute toxicity - Inhalation (Vapors)	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 2
Category 2 respiratory system	
Specific target organ toxicity (repeated exposure)	Category 2
Category 2 respiratory system, teeth	

Pictograms

Signal word Danger

Hazard statements
H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H371 - May cause damage to the following organs: respiratory system
H373 - May cause damage to the following organs through prolonged or repeated exposure: respiratory system, teeth

Precautionary statements-(Prevention)
Use only outdoors or in a well-ventilated area Do not breathe dust/fume/gas/mist/vapors/spray Wash face, hands and any exposed skin thoroughly after handling Wear protective gloves/protective clothing/eye protection/face protection Do not eat, drink or smoke when using this product Keep only in original container

Precautionary statements-(Response)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
Absorb spillage to prevent material damage

Precautionary statements-(Storage)

Store in a well-ventilated place. Keep container tightly closed Store locked up Store in corrosive resistant/ container with a resistant inner liner

Precautionary statements-(Disposal)

Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Mixture

Chemical Name	Molecular weight	CAS RN	Weight-%
Water	18.02	7732-18-5	94.87
Nitric Acid	63.01	7697-37-2	5.0
Thallium(I) nitrate	266.39	10102-45-1	0.13

Impurities and/or Additives： Not applicable

4. FIRST AID MEASURES

First aid measures

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Inhalation Remove to fresh air.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing media

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

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data

Sensitivity to Mechanical Impact none.
Sensitivity to Static Discharge none.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods and material for containment and cleaning up Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures Avoid contact with alkaline substances. Avoid contact with metal.
Protective measures Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage conditions Store away from sunlight in well-ventilated place at room temperature (under 25 °C). Keep container tightly closed. Store locked up.

Packaging materials Polyethylene.

Incompatible materials alkaline substances. Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls
In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	ACGIH	OSHA PEL	NIOSH IDLH
Nitric Acid 7697-37-2	STEL: 4 ppm TWA: 2 ppm	TWA: 2 ppm TWA: 5 mg/m^3 (vacated) TWA: 2 ppm (vacated) TWA: 5 mg/m^3 (vacated) STEL: 4 ppm (vacated) STEL: 10 mg/m^3	IDLH: 25 ppm TWA: 2 ppm TWA: 5 mg/m^3 STEL: 4 ppm STEL: 10 mg/m^3
Thallium(I) nitrate 10102-45-1	TWA: 0.02 mg/m^3 Tl inhalable particulate matter Skin	TWA: 0.1 mg/m^3 Tl (vacated) S* S*	IDLH: 15 mg/m^3 Tl TWA: 0.1 mg/m^3 Tl

Personal protective equipment

Respiratory protection	Gas mask for acidic gas (JIS T 8152)
Hand protection	chemical protective gloves (JIS T 8116)
Eye protection	protective eyeglasses or chemical safety goggles (JIS T 8147)
Skin and body protection	Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	
Color	colorless
Turbidity	clear
Appearance	liquid
Odor	no data available
pH	no data available
Melting point/freezing point	no data available
Boiling point, initial boiling point and boiling range	no data available
Flash point	no data available
Evaporation rate:	no data available
Flammability (solid, gas):	no data available
Upper/lower flammability or explosive limits	
Upper:	no data available
Lower:	no data available
Vapour pressure	no data available
Vapour density	no data available
Specific Gravity / Relative density	no data available
Solubilities	
n-Octanol/water partition coefficient:(log Pow)	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
Viscosity (coefficient of viscosity)	no data available
Dynamic viscosity	no data available
Particle characteristics	no data available

10. STABILITY AND REACTIVITY

Stability

Chemical stability	Stable under recommended storage conditions.
Reactivity	no data available

Hazardous reactions

Corrodes metals to generate hydrogen gas.

Conditions to avoid

Extremes of temperature and direct sunlight

Incompatible materials

alkaline substances, Metals

Hazardous decomposition products

Nitrogen oxides (NOx), Metal oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric Acid	N/A	N/A	334 ppm (Rat) 0.5 h

Thallium(I) nitrate	15 mg/kg (Mouse)	N/A	N/A

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Nitric Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Nitric Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagencity source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Nitric Acid	Based on the NITE GHS classification results.
Thallium(I) nitrate	Based on the NITE GHS classification results.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Nitric Acid 7697-37-2	N/A	LC50 : Gambusia affinis 72 mg/L 96 h	N/A	N/A
Thallium(I) nitrate 10102-45-1	N/A	N/A	N/A	EC50 : Daphnia magna 0.665 mg/L 48 h

Persistence and degradability
No information available

Bioaccumulative potential
No information available

Mobility

Chemical Name	Partition coefficient
Nitric Acid 7697-37-2	-2.3

Mobility in soil No information available
Other Data No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Precautionary including method of disposing contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT
UN/ID No UN2031
Proper shipping name: Nitric acid
UN classfication 8
Subsidiary hazard class 5.1
Packing group II
Marine pollutant Not applicable

IATA
UN/ID No UN2031
Proper shipping name: Nitric acid
UN classfication 8
Subsidiary hazard class
Packing group II
Environmentally Hazardous Substance Not applicable

IMDG
UN/ID No UN2031
Proper shipping name: Nitric acid
UN classfication 8
Subsidiary hazard class
Packing group II
Marine pollutant (Sea) Not applicable

15. REGULATORY INFORMATION

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS RN	Weight-%	SARA 313 - Threshold Values %
Water - 7732-18-5	7732-18-5	94.87	N/A
Nitric Acid - 7697-37-2	7697-37-2	5.0	1.0
Thallium(I) nitrate - 10102-45-1	10102-45-1	0.13	1.0

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nitric Acid 7697-37-2	1000 lb	N/A	N/A	X
Thallium(I) nitrate 10102-45-1	N/A	X	N/A	N/A

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Nitric Acid 7697-37-2	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Thallium(I) nitrate 10102-45-1	100 lb	N/A	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any chemicals regulated by Proposition 65

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5	N/A	N/A	X
Nitric Acid 7697-37-2	X	X	X
Thallium(I) nitrate 10102-45-1	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Issue Date 02-Dec-2025
Revision Note

No information available

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