

## SAFETY DATA SHEET

Issue Date 27-Jun-2025  
Revision Number 1

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

Product identifier

Product Name Titanium Standard Solution (Ti 1000)

Other means of identification

Product Code(s) 204-21761

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 sheetManufacturer AddressFUJIFILM Wako Pure Chemical Corporation  
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Chuo-ku Osaka 540-8605, Japan

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DistributorFUJIFILM Irvine Scientific  
E. Warner Avenue, Santa Ana, CA 92705-5505, U.S.A.: +1 949 261 7800  
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## 2. HAZARDS IDENTIFICATION

**GHS classification**Classification of the substance or mixture

Acute toxicity - Inhalation (Dusts/Mists)

Category 4

Skin corrosion/irritation

Category 1

Serious eye damage/eye irritation

Category 1

Specific target organ toxicity (single exposure)

Category 1

Category 1 respiratory system

Specific target organ toxicity (repeated exposure)

Category 1

Category 1 respiratory system

**Pictograms**

Signal word



Danger

**Hazard statements**

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H332 - Harmful if inhaled

H370 - Causes damage to the following organs: respiratory system

H372 - Causes damage to the following organs through prolonged or repeated exposure: respiratory system

**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

**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 Call a POISON CENTER or doctor/physician if you feel unwell  
 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

**Precautionary statements-(Storage)**

Store locked up

**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  | 89.718   |
| Sulfuric Acid        | 98.08            | 7664-93-9  | 9.81     |
| Titanium(IV) sulfate | 239.99           | 27960-69-6 | 0.472    |

**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** none.

**Impact**

**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.

**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.

**Packaging materials** Polyethylene.

**Incompatible materials** alkaline substances.

## **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   |
|----------------------------|--------------------------|--|--|
| Sulfuric Acid<br>7664-93-9 | TWA 0.2mg/m <sup>3</sup> | TWA: 1 mg/m <sup>3</sup><br>(vacated) TWA: 1 mg/m <sup>3</sup> | IDLH: 15 mg/m <sup>3</sup><br>TWA: 1 mg/m <sup>3</sup> |

**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**

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

## 10. STABILITY AND REACTIVITY

### Stability

|                           |  |
|---------------------------|--|
| <b>Chemical stability</b> | Stable under recommended storage conditions. |
| <b>Reactivity</b>         | no data available                            |

### Hazardous reactions

None under normal processing

### Conditions to avoid

Extremes of temperature and direct sunlight

### Incompatible materials

alkaline substances

### Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Sulfur oxides (SO<sub>x</sub>), Metal oxides

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

| Chemical Name | Oral LD50          | Dermal LD50 | Inhalation LC50        |
|---------------|--------------------|-------------|------------------------|
| Sulfuric Acid | 2140 mg/kg ( Rat ) | N/A         | 0.375 mg/L ( Rat ) 4 h |

| Chemical Name | Acute toxicity -oral- source information      | Acute toxicity -dermal- source information    | Acute toxicity -inhalation gas-source information |
|---------------|---|---|---|
| Sulfuric Acid | 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 |
|---------------|--|---|---|
| Sulfuric Acid | 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  |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

**Serious eye damage/ irritation**

| Chemical Name | Serious eye damage/irritation source information |
|---------------|--|
| Sulfuric Acid | Based on the NITE GHS classification results.    |

**Respiratory or skin sensitization**

| Chemical Name | Respiratory or Skin sensitization source information |
|---------------|--|
| Sulfuric Acid | Based on the NITE GHS classification results.        |

**Reproductive cell mutagenicity**

| Chemical Name | germ cell mutagenicity source information     |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

**Carcinogenicity**

| Chemical Name | Carcinogenicity source information            |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

| Chemical Name              | NTP | IARC    | ACGIH | JSOH |
|----------------------------|-----|---------|-------|------|
| Sulfuric Acid<br>7664-93-9 | -   | Group 1 | A2    | -    |

**Reproductive toxicity**

| Chemical Name | Reproductive toxicity source information      |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

**STOT-single exposure**

| Chemical Name | STOT -single exposure- source information     |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

**STOT-repeated exposure**

| Chemical Name | STOT -repeated exposure- source information   |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

**Aspiration hazard**

| Chemical Name | Aspiration Hazard source information          |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

| Chemical Name              | Algae/aquatic plants | Fish  | Toxicity to microorganisms | Crustacea                            |
|----------------------------|----------------------|---|----------------------------|--------------------------------------|
| Sulfuric Acid<br>7664-93-9 | N/A                  | LC50 : Lepomis macrochirus<br>16 - 28 mg/L 96 h | N/A                        | LC50 : Daphnia magna<br>29 mg/L 24 h |

**Persistence and degradability**

No information available

**Bioaccumulative potential**

No information available

**Mobility**

no data available

**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**

|                                |                |
|--------------------------------|----------------|
| <b>UN/ID No</b>                | UN1830         |
| <b>Proper shipping name:</b>   | Sulphuric acid |
| <b>UN classification</b>       | 8              |
| <b>Subsidiary hazard class</b> |                |
| <b>Packing group</b>           | II             |
| <b>Marine pollutant</b>        | Not applicable |

**IATA**

|  |                |
|--|----------------|
| <b>UN/ID No</b>                            | UN1830         |
| <b>Proper shipping name:</b>               | Sulphuric acid |
| <b>UN classification</b>                   | 8              |
| <b>Subsidiary hazard class</b>             |                |
| <b>Packing group</b>                       | II             |
| <b>Environmentally Hazardous Substance</b> | Not applicable |

**IMDG**

|                                |                |
|--------------------------------|----------------|
| <b>UN/ID No</b>                | UN1830         |
| <b>Proper shipping name:</b>   | Sulphuric acid |
| <b>UN classification</b>       | 8              |
| <b>Subsidiary hazard class</b> |                |
| <b>Packing group</b>           | II             |
| <b>Marine pollutant (Sea)</b>  | 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  | 89.718   | N/A                           |
| Sulfuric Acid - 7664-93-9         | 7664-93-9  | 9.81     | 1.0                           |
| Titanium(IV) sulfate - 27960-69-6 | 27960-69-6 | 0.472    | N/A                           |

**SARA 311/312 Hazard Categories**

|  |    |
|--|----|
| <b>Acute health hazard</b>               | No |
| <b>Chronic Health Hazard</b>             | No |
| <b>Fire hazard</b>                       | No |
| <b>Sudden release of pressure hazard</b> | No |
| <b>Reactive Hazard</b>                   | 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 |
|-------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Sulfuric Acid 7664-93-9 | 1000 lb                     | N/A                    | N/A                       | X                          |

**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)                  |
|-------------------------|--------------------------|----------------|---|
| Sulfuric Acid 7664-93-9 | 1000 lb                  | 1000 lb        | RQ 1000 lb final RQ<br>RQ 454 kg final RQ |

**US State Regulations****California Proposition 65**

This product contains the following Proposition 65 chemicals

| Chemical Name             | California Proposition 65 |
|---------------------------|---------------------------|
| Sulfuric Acid - 7664-93-9 | Carcinogen                |

**U.S. State Right-to-Know Regulations**

| Chemical Name           | New Jersey | Massachusetts | Pennsylvania |
|-------------------------|------------|---------------|--------------|
| Water 7732-18-5         | N/A        | N/A           | X            |
| Sulfuric Acid 7664-93-9 | X          | X             | X            |

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION**

**Issue Date** 27-Jun-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**