

## SAFETY DATA SHEET

According to JIS Z 7253:2019  
**Revision Date** 10-Sep-2020  
 Version 1.03

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

|                     |                |
|---------------------|----------------|
| <b>Product name</b> | Titanium Oxide |
| <b>Product code</b> | 903-40303      |

|   |   |
|---|---|
| <b>Manufacturer</b>                             | FUJIFILM Wako Pure Chemical Corporation<br>1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan<br>Phone: +81-6-6203-3741<br>Fax: +81-6-6203-2029 |
| <b>Supplier</b>                                 | FUJIFILM Wako Pure Chemical Corporation<br>1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan<br>Phone: +81-6-6203-3741<br>Fax: +81-6-6203-2029 |
| <b>Emergency telephone number</b>               | +81-6-6203-3741 / +81-3-3270-8571   |
| <b>Recommended uses and restrictions on use</b> | Pharmaceuticals raw materials   |

## Section 2: HAZARDS IDENTIFICATION

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

Serious eye damage/eye irritation

Category 2B

Carcinogenicity

Category 2

Long-term (chronic) hazardous to the aquatic environment

Category 4

**Pictograms****Signal word**

Warning

**Hazard statements**

H320 - Causes eye irritation

H351 - Suspected of causing cancer

H413 - May cause long lasting harmful effects to aquatic life

**Precautionary statements-(Prevention)**

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required.
- Wash face, hands and any exposed skin thoroughly after handling
- Avoid release to the environment

**Precautionary statements-(Response)**

- IF exposed or concerned: Get medical advice/attention
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists: Get medical advice/attention.

**Precautionary statements-(Storage)**

- Store locked up.

**Precautionary statements-(Disposal)**

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

**Others**

Other hazards Not available

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula TiO<sub>2</sub>

| Chemical Name      | Weight-% | Molecular weight | ENCS             | ISHL No. | CAS RN     |
|--------------------|----------|------------------|------------------|----------|------------|
| Titanium(IV) Oxide | 98.5     | 79.87            | (5)-5225,(1)-558 | 公表       | 13463-67-7 |

Impurities and/or Additives : Not applicable

### Section 4: FIRST AID MEASURES

**Inhalation**

Remove to fresh air. If symptoms persist, call a physician.

**Skin contact**

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

**Eye contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

**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.

**Protection of first-aiders**

Use personal protective equipment as required.

### Section 5: FIRE FIGHTING MEASURES

**Suitable extinguishing media**

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

**Unsuitable extinguishing media**

No information available

**Specific hazards arising from the chemical product**

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

**Special extinguishing method**

No information available

**Special protective actions for fire-fighters**

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

### Section 6: ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

**Environmental precautions**

To be careful not discharged to the environment without being properly handled waste water contaminated.

**Methods and materials for contaminant and methods and materials for cleaning up**

Sweep up and gather scattered particles, and collect it in an empty airtight container.

**Recoverly, neutralization**

No information available

**Secondary disaster prevention measures**

Clean contaminated objects and areas thoroughly observing environmental regulations.

**Section 7: HANDLING AND STORAGE****Handling****Technical measures**

Avoid contact with strong oxidizing agents. Use with local exhaust ventilation.

**Precautions**

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

**Safety handling precautions**

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

**Storage****Safe storage conditions****Storage conditions**

Store away from sunlight in well-ventilated place at room temperature (preferably cool).  
Keep container tightly closed.

**Safe packaging material**

Polyethylene

**Incompatible substances**

Strong oxidizing agents

**Section 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                    | JSOH (Japan)                   | ISHL (Japan) | ACGIH                     |
|----------------------------------|--------------------------------|--------------|---------------------------|
| Titanium(IV) Oxide<br>13463-67-7 | TWA: 0.3 mg/m <sup>3</sup> OEL | N/A          | TWA: 10 mg/m <sup>3</sup> |

**Personal protective equipment****Respiratory protection**

Dust mask

**Hand protection**

Protection gloves

**Eye protection**

protective eyeglasses or chemical safety goggles

**Skin and body protection**

Long-sleeved work clothes

**General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice.

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES****Form****Color**

white

**Appearance**

powder

**Odor**

Odorless

**Melting point/freezing point**

1,855 °C

**Boiling point, initial boiling point and boiling range**

2,500-3,000 °C

**Flammability**

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

**Flash point**

No data available

**Auto-ignition temperature:**

No data available

**Decomposition temperature:**

No data available

|   |   |
|---|---|
| pH  | No data available   |
| Viscosity (coefficient of viscosity)            | No data available   |
| Dynamic viscosity                               | No data available   |
| Solubilities                                    | water , Ethanol , Diethyl ether : practically insoluble,or insoluble<br>. hot sulfuric acid , hydrofluoric acid : soluble . hydrochloric acid<br>, nitric acid , dil. Sulfuric acid : insoluble . |
| n-Octanol/water partition coefficient:(log Pow) | No data available   |
| Vapour pressure                                 | No data available   |
| Specific Gravity / Relative density             | 4.2(rutile structure),3.9(anatase structure)  |
| Vapour density                                  | No data available   |
| Particle characteristics                        | No data available   |

## Section 10: STABILITY AND REACTIVITY

### Stability

|   |  |
|---|--|
| <b>Reactivity</b>                       | No data available                            |
| <b>Chemical stability</b>               | Stable under recommended storage conditions. |
| <b>Hazardous reactions</b>              | None under normal processing                 |
| <b>Conditions to avoid</b>              | Extremes of temperature and direct sunlight  |
| <b>Incompatible materials</b>           | Strong oxidizing agents                      |
| <b>Hazardous decomposition products</b> | No information available                     |

## Section 11: TOXICOLOGICAL INFORMATION

### Acute toxicity

| Chemical Name      | Oral LD50             | Dermal LD50                | Inhalation LC50     |
|--------------------|-----------------------|----------------------------|---------------------|
| Titanium(IV) Oxide | > 2,000 mg/kg ( Rat ) | > 10,000 mg/kg ( Hamster ) | > 5.09 mg/L ( Rat ) |

| Chemical Name      | Acute toxicity -oral- source information      | Acute toxicity -dermal- source information    | Acute toxicity -inhalation gas-source information |
|--------------------|---|---|---|
| Titanium(IV) Oxide | 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 |
|--------------------|--|--|--|
| Titanium(IV) Oxide | 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  |
|--------------------|---|
| Titanium(IV) Oxide | Based on the NITE GHS classification results. |

### Serious eye damage/ irritation

| Chemical Name      | Serious eye damage/irritation source information |
|--------------------|--|
| Titanium(IV) Oxide | Based on the NITE GHS classification results.    |

### Respiratory or skin sensitization

| Chemical Name      | Respiratory or Skin sensitization source information |
|--------------------|--|
| Titanium(IV) Oxide | Based on the NITE GHS classification results.        |

### Reproductive cell mutagenicity

| Chemical Name      | germ cell mutagenicity source information     |
|--------------------|---|
| Titanium(IV) Oxide | Based on the NITE GHS classification results. |

### Carcinogenicity

| Chemical Name      | Carcinogenicity source information            |
|--------------------|---|
| Titanium(IV) Oxide | Based on the NITE GHS classification results. |

| Chemical Name      | NTP | IARC     | ACGIH | JSOH (Japan) |
|--------------------|-----|----------|-------|--------------|
| Titanium(IV) Oxide |     | Group 2B |       | Group 2B     |

|                               |  |  |  |
|-------------------------------|--|--|--|
| 13463-67-7                    |  |  |  |
| <b>Reproductive toxicity</b>  |  |  |  |
| <b>Chemical Name</b>          | <b>Reproductive toxicity source information</b>    |  |  |
| Titanium(IV) Oxide            | Based on the NITE GHS classification results.      |  |  |
| <b>STOT-single exposure</b>   |  |  |  |
| <b>Chemical Name</b>          | <b>STOT -single exposure- source information</b>   |  |  |
| Titanium(IV) Oxide            | Based on the NITE GHS classification results.      |  |  |
| <b>STOT-repeated exposure</b> |  |  |  |
| <b>Chemical Name</b>          | <b>STOT -repeated exposure- source information</b> |  |  |
| Titanium(IV) Oxide            | Based on the NITE GHS classification results.      |  |  |
| <b>Aspiration hazard</b>      |  |  |  |
| <b>Chemical Name</b>          | <b>Aspiration Hazard source information</b>        |  |  |
| Titanium(IV) Oxide            | Based on the NITE GHS classification results.      |  |  |

## Section 12: ECOLOGICAL INFORMATION

### Ecotoxicity

| Chemical Name      | Algae/aquatic plants  | Fish  | Crustacea                                       |
|--------------------|---|---|---|
| Titanium(IV) Oxide | EL50 (growth rate) > 100 mg/L<br>72h ( <i>Pseudokirchneriella subcapitata</i> ) | LL50 > 100 mg/L 96h<br>( <i>Oryzias latipes</i> ) | EL50 > 100 mg/L 48h<br>( <i>Daphnia magna</i> ) |

### Other data

| Chemical Name      | Short-term (acute) hazardous to the aquatic environment source information | Long-term (chronic) hazardous to the aquatic environment source information |
|--------------------|--|---|
| Titanium(IV) Oxide | Based on the NITE GHS classification results.                              | Based on the NITE GHS classification results.                               |

|                                      |                          |
|--------------------------------------|--------------------------|
| <b>Persistence and degradability</b> | No information available |
| <b>Bioaccumulative potential</b>     | No information available |
| <b>Mobility in soil</b>              | No information available |
| <b>Hazard to the ozone layer</b>     | No information available |

## Section 13: DISPOSAL CONSIDERATIONS

### Waste from residues

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

### Contaminated container and contaminated packaging

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

## Section 14: TRANSPORT INFORMATION

|                                       |                          |
|---------------------------------------|--------------------------|
| <b>ADR/RID</b>                        | Not regulated            |
| <b>UN number</b>                      | -                        |
| <b>Proper shipping name:</b>          |                          |
| <b>UN classification</b>              |                          |
| <b>Subsidiary hazard class</b>        |                          |
| <b>Packing group</b>                  |                          |
| <b>Marine pollutant</b>               | Not applicable           |
| <b>IMDG</b>                           | Not regulated            |
| <b>UN number</b>                      | -                        |
| <b>Proper shipping name:</b>          |                          |
| <b>UN classification</b>              |                          |
| <b>Subsidiary hazard class</b>        |                          |
| <b>Packing group</b>                  |                          |
| <b>Marine pollutant (Sea)</b>         | Not applicable           |
| <b>Transport in bulk according to</b> | No information available |

**Annex II of MARPOL 73/78 and the IBC Code**

|  |                |
|--|----------------|
| <b>IATA</b>                                | Not regulated  |
| <b>UN number</b>                           | -              |
| <b>Proper shipping name:</b>               |                |
| <b>UN classification</b>                   |                |
| <b>Subsidiary hazard class</b>             |                |
| <b>Packing group</b>                       |                |
| <b>Environmentally Hazardous Substance</b> | Not applicable |

**Section 15: REGULATORY INFORMATION****International Inventories**

|                      |        |
|----------------------|--------|
| <b>EINECS/ELINCS</b> | Listed |
| <b>TSCA</b>          | Listed |

**Japanese regulations**

|  |  |
|--|--|
| <b>Fire Service Act</b>  | Not applicable   |
| <b>Poisonous and Deleterious Substances Control Law</b>                    | Not applicable   |
| <b>Industrial Safety and Health Act</b>                                    | Law Art.57, Harmful Substances Whose Names Are to be Indicated on the Label Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9)No.191 |
| <b>Regulations for the carriage and storage of dangerous goods in ship</b> | Not applicable   |
| <b>Civil Aeronautics Law</b>   | Not applicable   |
| <b>Marine Pollution Prevention Law</b>                                     | Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Z   |
| <b>Pollutant Release and Transfer Register Law</b>                         | Not applicable   |
| <b>Export Trade Control Order</b>  | Not applicable   |

| Chemical Name                             | Poisonous and Deleterious Substances Control Law | Industrial Safety and Health Act Substances (Law Art.57-2) | Pollutant Release and Transfer Register Law |
|---|--|--|---|
| Titanium(IV) Oxide<br>13463-67-7 ( 98.5 ) | -  | Applicable   | -   |

**Section 16: OTHER INFORMATION****Key literature references and sources for data etc.**

NITE: National Institute of Technology and Evaluation (JAPAN)  
<http://www.safe.nite.go.jp/japan/db.html>  
 IATA dangerous Goods Regulations  
 RTECS:Registry of Toxic Effects of Chemical Substances  
 etc

**Disclaimer**

This SDS is according to JIS Z 7253: 2019. 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, 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.

GHS Classification is according to JIS Z7252(2019). \*JIS: Japanese Industrial Standards

**End of Safety Data Sheet**