

Material Safety Data Sheet (MSDS / SDS)

Rutile Titanium Dioxide (All Grades: R-902 / R-996 / R-218)

SECTION 1: Identification

Product Name	Titanium Dioxide – Rutile Form
Synonyms	Rutile TiO ₂ , Titania (Rutile), CI Pigment White 6, C.I. 77891 (Rutile)
CAS No.	13463-67-7
Recommended Use	White pigment for paints, coatings, plastics, inks, and rubber compounding
Manufacturer / Supplier	Ochnology Solution Pvt. Ltd., B-153, Sector-4 Defence Colony, Dehradun, Uttarakhand, India – 248001
Telephone	+91 9286823642/43
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SECTION 2: Hazard(s) Identification

GHS Classification: Not classified as hazardous under GHS based on current EU CLP status (see Regulatory Information, Section 15). Nuisance dust may cause mechanical eye/respiratory irritation.

Signal Word: None (not classified) – general dust-handling precautions apply

Hazard Statements:

- Not classified as a hazardous substance or mixture under GHS/CLP based on current classification status
- May cause mechanical irritation to eyes and respiratory tract as a nuisance dust at high airborne concentrations

Precautionary Statements:

- P261 – Avoid breathing dust
- P264 – Wash hands thoroughly after handling
- P271 – Use only outdoors or in a well-ventilated area
- P280 – Wear protective gloves/eye protection when handling bulk powder

- P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes; remove contact lenses if present and easy to do; continue rinsing

SECTION 3: Composition / Information on Ingredients

Component	CAS No.	Concentration (w/w)
Titanium Dioxide (Rutile, TiO ₂)	13463-67-7	90.0 – 99.0% (grade dependent, see TDS)
Inorganic Surface Coating (Al ₂ O ₃ /SiO ₂)	–	1–10% (grade dependent)

SECTION 4: First-Aid Measures

Eye Contact	Rinse with plenty of water for several minutes to remove dust particles. Remove contact lenses if present. Seek medical attention if irritation persists.
Skin Contact	Wash with soap and water. Generally non-irritating; seek medical attention if irritation develops.
Inhalation	Move to fresh air. If dust has been inhaled in quantity and coughing or breathing difficulty persists, seek medical attention.
Ingestion	Rinse mouth with water. Not expected to be harmful in small amounts; seek medical attention if large quantities are ingested or discomfort occurs.

SECTION 5: Fire-Fighting Measures

- Non-flammable, non-combustible inorganic solid; does not itself burn or support combustion
- Suitable extinguishing media: use media appropriate to the surrounding fire
- No specific fire or explosion hazard associated with titanium dioxide powder under normal conditions
- Fire-fighters should wear standard protective equipment and SCBA in enclosed or heavily smoke-logged conditions

SECTION 6: Accidental Release Measures

- Avoid generating dust during clean-up; use wet sweeping or vacuum with HEPA filtration where practical
- Sweep or vacuum into suitable containers for reuse or disposal
- Spilled material can create a slip hazard on smooth floors – clean promptly
- Wear appropriate PPE (dust mask, goggles) during clean-up of large spills

SECTION 7: Handling and Storage

- Avoid generating and inhaling dust; use local exhaust ventilation at dust-generating points (bag dumping, milling, blending)
- Avoid contact with eyes; wash hands after handling
- Store in a dry, covered area away from moisture
- Keep bags/containers closed when not in use
- No specific incompatibilities – store away from strong reducing agents as general good practice

SECTION 8: Exposure Controls / Personal Protection

Occupational Exposure Limits	OSHA PEL: 15 mg/m ³ (total dust, 8-hr TWA); ACGIH TLV: 10 mg/m ³ (inhalable fraction, 8-hr TWA) for titanium dioxide as a Particulate Not Otherwise Regulated / nuisance dust
Engineering Controls	Local exhaust ventilation at dust-generating process steps
Eye/Face Protection	Safety glasses or goggles recommended in dusty conditions
Hand Protection	General-purpose work gloves sufficient for routine handling
Respiratory Protection	Dust mask (N95 or equivalent) recommended where airborne dust levels are elevated, e.g. bag dumping/milling

SECTION 9: Physical and Chemical Properties

Property	Unit	Value
Appearance	–	White, free-flowing powder
Odour	–	Odourless
Melting Point	°C	≈ 1,843
Specific Gravity	g/cm ³	3.7 – 4.1 (grade dependent)
Solubility in Water	–	Insoluble
Flash Point	–	Not applicable (non-flammable solid)

SECTION 10: Stability and Reactivity

- Stable under normal conditions of storage, handling and use
- Chemically inert; does not react under normal ambient conditions
- Incompatible materials: strong reducing agents (general precaution; no significant reactivity under normal use)
- Hazardous decomposition products: none under normal conditions

SECTION 11: Toxicological Information

- Very low acute oral and dermal toxicity; not classified as an eye/skin irritant or sensitizer in its normal solid form
- Titanium dioxide (all forms) is classified by IARC as Group 2B – possibly carcinogenic to humans – based on chronic high-concentration inhalation studies in rats (a species-specific lung-overload response); this IARC classification is separate from, and not affected by, the EU CLP status discussed in Section 15
- Prolonged inhalation of high concentrations of respirable dust (of any poorly-soluble low-toxicity particulate, not specific to TiO₂) may cause lung irritation – standard dust exposure controls are recommended as good practice
- Not classified as mutagenic or toxic to reproduction based on available information

SECTION 12: Ecological Information

- Not classified as hazardous to aquatic organisms; titanium dioxide is chemically inert and insoluble in water
- No significant bioaccumulation potential due to insolubility and chemical inertness
- Avoid unnecessary large-scale release of bulk powder to waterways as general environmental good practice

SECTION 13: Disposal Considerations

- Dispose of product and packaging in accordance with local, state and national regulations
- Not classified as hazardous waste under standard criteria; confirm local requirements before disposal
- Empty bags may retain residual dust – handle and dispose of per label and local regulations

SECTION 14: Transport Information

UN Number	Not applicable – not classified as Dangerous Goods
Proper Shipping Name	Not regulated for transport (IMDG / ADR / IATA / RID)
Transport Hazard Class	Not classified
Packing Group	Not applicable
Environmental Hazards	None identified – inert, insoluble solid

SECTION 15: Regulatory Information

- EU CLP: titanium dioxide powder ($\geq 1\%$ particles $\leq 10\mu\text{m}$) was classified as a Category 2 carcinogen by inhalation (H351i) under Commission Delegated Regulation (EU)

2020/217; this classification was annulled by the EU General Court (Nov 2022), and the annulment was upheld by the Court of Justice of the EU on 1 August 2025, with formal removal from the CLP harmonised classification published in the Official Journal on 10 December 2025. As of this SDS revision date, titanium dioxide does not carry the harmonised H351i carcinogen classification in the EU

- IARC continues to classify titanium dioxide as Group 2B (possibly carcinogenic to humans) – this is a hazard-identification classification under a separate framework from EU CLP and remains current; it does not by itself require hazard labelling
- Titanium dioxide is widely listed on major chemical inventories (TSCA, REACH, ECL, etc.) as an existing/registered substance
- Buyers/importers should confirm current labelling requirements for their specific destination market, as this classification has been subject to active litigation and may be revisited

SECTION 16: Other Information

Revision Date: 16 July 2026

This SDS has been compiled based on general industry data and knowledge for rutile titanium dioxide pigment products of this type as commercially supplied, and reflects the EU regulatory status as of the revision date above. It is intended as a general handling and safety guide and does not replace a batch-specific SDS from the manufacturing mill, which should be obtained and reviewed for each shipment where regulatory submission is required.

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