

Safety Data Sheet

Titanium Dioxide Pigment

Section 1: Identification

Product identifier	Titanium Dioxide Pigment
Product code	Not assigned
Chemical name	Titanium dioxide (TiO ₂)
CAS number	13463-67-7
Recommended use	Industrial white pigment/colorant for paints, coatings, plastics, inks, paper, rubber, ceramics, construction materials, and other industrial applications.
Use restrictions	Not intended or represented for direct use in food, pharmaceuticals, medical implantation, or other applications requiring a specifically approved or qualified grade.
Supplier / Distributor	Chemical Store Inc.
Address	1059 Main Avenue, Clifton, NJ 07011, United States
Telephone / Website / Email	+1 (973) 405-6248 ChemicalStore.com info@ChemicalStore.com
Emergency telephone	+1 (973) 420-4972 (United States)

Section 2: Hazards Identification

United States (US) - prepared in accordance with OSHA 29 CFR 1910.1200 Hazard Communication Standard.

OSHA HCS classification	Not classified as a hazardous chemical under the OSHA HCS classification criteria based on the information used to prepare this SDS.
Signal word	None required.
Hazard pictograms	None required under OSHA HCS for this product as classified.
Hazard statements	None required under OSHA HCS for this product as classified.
Hazards not otherwise classified	Airborne dust may cause mechanical irritation of the eyes and respiratory tract. Repeated or prolonged inhalation of high concentrations of respirable dust should be avoided.
Carcinogenicity information	IARC classifies titanium dioxide as Group 2B, possibly carcinogenic to humans, based on sufficient evidence in experimental animals and inadequate evidence in humans. The concern is principally associated with inhalation of respirable particles at sufficiently high exposures. NIOSH has particle-size-specific occupational recommendations; see Sections 8 and 11.
California Proposition 65	Titanium dioxide (airborne, unbound particles of respirable size) is listed by California as a chemical known to the State to cause cancer. This listing does not apply to all forms of titanium dioxide; it concerns airborne, unbound respirable-size particles.

Precautionary practices:

- Avoid generating and breathing dust.
- Use local exhaust ventilation or other engineering controls where dust may be generated.
- Wear appropriate eye protection and work gloves; use respiratory protection when exposure cannot otherwise be adequately controlled.
- Wash hands after handling and before eating, drinking, smoking, or leaving the work area.

Section 3: Composition / Information on Ingredients

Substance / industrial pigment. The Chemical Store product listing used as the product basis identifies titanium dioxide at 99% minimum. Minor impurities or surface-treatment residues, if present, are not expected to change the classification unless product-specific supplier information indicates otherwise.

Chemical Name	CAS Number	% by Weight	Classification / Comments
Titanium dioxide	13463-67-7	99-100%	IARC Group 2B. California Proposition 65 listing applies to airborne, unbound particles of respirable size.

Note: Verify the composition against the current supplier specification/COA before issuing this SDS for a grade containing surface treatments or additives.

Section 4: First Aid Measures

Inhalation	Move person to fresh air. Keep at rest in a position comfortable for breathing. If coughing, breathing difficulty, or other symptoms persist, obtain medical attention.
Skin contact	Wash with soap and water. Remove contaminated clothing and wash before reuse. Obtain medical advice if irritation develops or persists.
Eye contact	Rinse cautiously with clean water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.
Ingestion	Rinse mouth. Do not induce vomiting unless directed by medical personnel. Obtain medical advice if a large amount is swallowed or symptoms occur.
Most important symptoms/effects	Dust may cause mechanical irritation of eyes, nose, throat, and respiratory tract. Excessive or prolonged inhalation of respirable dust may adversely affect the lungs.
Notes to physician	Treat symptomatically. Consider the circumstances and extent of dust exposure.

Section 5: Fire Fighting Measures

Suitable extinguishing media	Titanium dioxide is noncombustible. Use extinguishing media appropriate for the surrounding fire.
Unsuitable extinguishing media	No specific restriction for titanium dioxide itself; select media based on surrounding materials.
Specific hazards	Product does not burn. Containers or packaging may burn or decompose in a surrounding fire.
Hazardous combustion products	Titanium dioxide itself is noncombustible. Hazardous products may arise from burning packaging or other materials present.
Firefighter protection	Wear standard protective equipment and positive-pressure self-contained breathing apparatus when required by conditions of the surrounding fire. Avoid generating airborne dust during cleanup.

Section 6: Accidental Release Measures

Personal precautions	Avoid breathing dust and avoid contact with eyes. Keep unnecessary personnel away. Wear appropriate PPE as described in Section 8.
Emergency procedures	Prevent dust from becoming airborne. Ventilate enclosed areas. Avoid dry sweeping or compressed-air cleaning where it would disperse dust.
Environmental precautions	Prevent large releases from entering drains, sewers, or waterways. Titanium dioxide is an insoluble inorganic solid.

Containment / cleanup	Carefully scoop or shovel material into suitable containers. Prefer HEPA-filtered vacuuming or wet cleanup methods when practical. Minimize dust generation. Clean residual material with damp wiping or an appropriate industrial vacuum. Dispose in accordance with Section 13.
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Section 7: Handling and Storage

Handling	Avoid creating or breathing airborne dust. Provide adequate ventilation. Avoid contact with eyes. Keep work areas clean. Do not eat, drink, or smoke in handling areas. Wash thoroughly after handling.
Storage	Store in a cool, dry, well-ventilated area in tightly closed, properly labeled containers. Protect from moisture and contamination.
Incompatible materials	No significant incompatibilities are reported by NIOSH for titanium dioxide. As a good industrial practice, segregate from materials that could contaminate the product or react with product-specific surface treatments.
Specific end use	Industrial pigment/colorant. Not intended for food or pharmaceutical applications.

Section 8: Exposure Controls / Personal Protection

Substance / Fraction	Limit	Authority / Basis
Titanium dioxide - total dust	15 mg/m ³ , 8-hour TWA	OSHA PEL (29 CFR 1910.1000 / NIOSH Pocket Guide)
Titanium dioxide - fine (respirable fraction)	2.4 mg/m ³ TWA, up to 10 h/day, 40 h/week	NIOSH REL, CIB 63
Titanium dioxide - ultrafine / engineered nanoscale	0.3 mg/m ³ TWA, up to 10 h/day, 40 h/week	NIOSH REL, CIB 63

Engineering controls: Use process enclosure, local exhaust ventilation, dust collection, or other engineering controls to keep airborne concentrations below applicable occupational exposure limits. Avoid operations that unnecessarily disperse fine powder.

Eye / face protection	Safety glasses with side shields. Use chemical/dust goggles where airborne powder may cause significant eye exposure.
Skin protection	Work gloves and protective clothing appropriate to the task and workplace conditions.
Respiratory protection	When engineering controls cannot maintain exposure below applicable limits, use a NIOSH-approved particulate respirator selected under a written respiratory protection program meeting 29 CFR 1910.134. Respirator selection must consider measured concentration, particle size, assigned protection factor, and workplace conditions.
Hygiene measures	Wash hands and exposed skin after handling. Remove contaminated clothing before leaving the work area. Do not eat, drink, or smoke where dust is handled.

Section 9: Physical and Chemical Properties

Property	Value	Property	Value
Physical state	Solid powder	Color	White
Odor	Odorless	Odor threshold	Not applicable
Chemical formula	TiO ₂	Molecular weight	79.87 g/mol
Melting point	Approx. 1830-1850 °C	Boiling point	Approx. 2500-3000 °C
Flammability	Noncombustible solid	Flash point	Not applicable
Lower / upper explosive limits	Not applicable	Autoignition temperature	Not applicable
pH	Not applicable to dry solid; suspension pH is grade-dependent	Decomposition temperature	No applicable value established for normal handling

Solubility in water	Insoluble	Vapor pressure	Approx. 0 mmHg
Relative vapor density	Not applicable	Evaporation rate	Not applicable
Relative density / specific gravity	Approx. 3.9-4.3, depending on crystalline form/grade	Bulk density	Grade- and packing-dependent
Viscosity	Not applicable	Partition coefficient (log Kow)	Not applicable for inorganic solid
Particle characteristics	Fine pigment powder; particle/agglomerate distribution is grade-specific	Explosive properties	Not explosive
Oxidizing properties	Not classified as oxidizing	VOC	Not applicable / essentially none

Section 10: Stability and Reactivity

Reactivity	No dangerous reaction is expected under normal conditions of industrial use.
Chemical stability	Stable under normal ambient and anticipated storage conditions.
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Avoid unnecessary dust generation and contamination. No special thermal ignition hazard for titanium dioxide itself.
Incompatible materials	None specifically reported by NIOSH for titanium dioxide; consider product-specific surface treatments and process chemicals.
Hazardous decomposition products	None expected from titanium dioxide under normal conditions. Products from burning packaging or surrounding materials may be hazardous.

Section 11: Toxicological Information

Likely routes of exposure	Inhalation of airborne dust; eye contact; skin contact; incidental ingestion.
Acute effects	Low acute toxicity is generally reported. Dust may mechanically irritate eyes and respiratory tract.
Skin corrosion / irritation	Not classified based on available information. Prolonged dusty contact may dry or mechanically irritate skin.
Serious eye damage / irritation	Not classified; dust may cause mechanical irritation.
Respiratory / skin sensitization	Not classified based on available information.
Germ cell mutagenicity	Not classified based on available information.
Carcinogenicity	IARC: Group 2B (possibly carcinogenic to humans). IARC reported inadequate evidence in humans and sufficient evidence in experimental animals. NIOSH CIB 63 concluded there was insufficient evidence to classify fine TiO ₂ as a potential occupational carcinogen, while expressing concern for ultrafine/engineered nanoscale TiO ₂ and recommending particle-size-specific RELs.
Reproductive toxicity	Not classified based on available information.
STOT - single exposure	Not classified. High airborne dust concentrations may cause transient respiratory irritation.
STOT - repeated exposure	Not classified under OSHA HCS based on information used here; repeated excessive inhalation of poorly soluble respirable particles may cause pulmonary effects.
Aspiration hazard	Not applicable to a solid powder.

California: Titanium dioxide (airborne, unbound particles of respirable size) has been listed under Proposition 65 for cancer since September 2, 2011.

Section 12: Ecological Information

Ecotoxicity	Titanium dioxide is a poorly soluble inorganic material. Available information does not support classification as an aquatic environmental hazard for this industrial pigment.
Persistence / degradability	Not applicable in the conventional biodegradation sense for an inorganic substance.
Bioaccumulative potential	Not expected to bioaccumulate in the conventional organic-chemical sense.
Mobility in soil	Expected to have low mobility as an insoluble particulate; behavior depends on particle size, surface treatment, and environmental conditions.
Other adverse effects	No specific adverse environmental effects are expected from normal industrial use. Avoid uncontrolled large releases.

Section 13: Disposal Considerations

Product waste	Recover or recycle where practical. Dispose of unused material and contaminated cleanup material in accordance with applicable federal, state, and local regulations. Waste classification may depend on contamination and the process in which the product was used.
Packaging waste	Empty containers may retain dust. Completely empty and clean containers before recycling or disposal. Do not reuse contaminated packaging for food, pharmaceutical, or household purposes.

Section 14: Transport Information

Mode	UN number	Proper shipping name	Hazard class	Packing group	Environmental hazard
U.S. DOT	Not regulated	Not applicable	Not applicable	Not applicable	No
TDG (Canada)	Not regulated	Not applicable	Not applicable	Not applicable	No
IMDG	Not regulated	Not applicable	Not applicable	Not applicable	No
IATA/ICAO	Not regulated	Not applicable	Not applicable	Not applicable	No

Special precautions: Protect containers from damage and moisture. Prevent release of dust during loading, unloading, and transport.

Section 15: Regulatory Information

OSHA Hazard Communication	This product is not classified as hazardous under OSHA HCS criteria based on the information used to prepare this SDS. OSHA requires carcinogen listings by IARC and NTP to be identified on SDSs; the IARC Group 2B evaluation is therefore reported in this SDS.
TSCA	Titanium dioxide is listed on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
SARA 302 / CERCLA	Titanium dioxide is not identified here as an Extremely Hazardous Substance under SARA 302 or as a CERCLA hazardous substance. Site-specific waste or mixture constituents may have separate requirements.
SARA 311/312	Determine reporting obligations from the product's OSHA hazard classification and facility-specific inventory thresholds.
California Proposition 65	Titanium dioxide (airborne, unbound particles of respirable size) is listed for cancer. Evaluate workplace/product exposure conditions to determine warning obligations.
International / local requirements	Users are responsible for determining applicability of state, local, and non-U.S. requirements for their specific product grade and use.

Section 16: Other Information

Revision date		2026-09-30
Initial preparation date		2026-09-30
SDS version		1.0
Supersedes		No previous version
Version	Date	Description of Change
1.0	2026-09-30	Initial SDS creation for Titanium Dioxide Pigment - industrial applications.

Abbreviations and acronyms

Term	Meaning
ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
HCS	Hazard Communication Standard
IARC	International Agency for Research on Cancer
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
REL	Recommended Exposure Limit
TWA	Time-Weighted Average
TSCA	Toxic Substances Control Act

Key literature and data sources

- OSHA, 29 CFR 1910.1200 and Appendix D - Safety Data Sheets.
- NIOSH Pocket Guide to Chemical Hazards: Titanium dioxide, CAS 13463-67-7.
- NIOSH Current Intelligence Bulletin 63: Occupational Exposure to Titanium Dioxide, DHHS (NIOSH) Publication No. 2011-160.
- International Agency for Research on Cancer (IARC), Monographs Volume 93: Carbon Black, Titanium Dioxide, and Talc (2010).
- PubChem, Titanium dioxide (CID 26042), National Library of Medicine.
- U.S. EPA Substance Registry / TSCA Inventory information for titanium dioxide.
- California OEHHA Proposition 65: Titanium dioxide (airborne, unbound particles of respirable size), updated fact sheet.
- ChemicalStore.com product listing: Titanium Dioxide, FCC, 99% minimum (used only as the composition basis; this SDS restricts recommended use to industrial applications).

Hazard classification method

Literature review and regulatory-source review. Classification is based on the substance information and product basis described in Sections 1 and 3. Product-specific supplier data should be reviewed if the industrial pigment grade contains coatings, additives, or a materially different particle-size distribution.

Training advice

- Chemical hazard communication and SDS use.
- Dust-control practices and housekeeping.
- Selection and use of personal protective equipment.
- Respiratory protection where required.
- Spill response and waste handling.

Disclaimer

The information provided in this Safety Data Sheet is believed to be accurate and represents the best information currently available from the sources identified above. However, no warranty, express or implied, is made regarding its accuracy, completeness, or suitability for any particular purpose. The user is responsible for determining the applicability of this information to the specific product grade, workplace, process, and use, and for compliance with all applicable laws and

regulations. This SDS should be reviewed against the current supplier specification and certificate of analysis before commercial release if the pigment contains surface treatments, additives, or composition differing from Section 3.

Prepared by

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Reference URLs (accessed September 30, 2026)

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200AppD>

<https://www.cdc.gov/niosh/npg/npgd0617.html>

<https://www.cdc.gov/niosh/docs/2011-160/default.html>

<https://publications.iarc.who.int/Book-And-Report-Series/Iarc-Monographs-On-The-Identification-Of-Carcinogenic-Hazards-To-Humans/Carbon-Black-Titanium-Dioxide-And-Talc-2010>

<https://pubchem.ncbi.nlm.nih.gov/compound/Titanium-dioxide>

<https://www.p65warnings.ca.gov/fact-sheets/titanium-dioxide-airborne-unbound-particles-respirable-size>

<https://chemicalstore.com/products-2/>