

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Trade Name:** Titanium Dioxide

**Chemical Formula:** TiO<sub>2</sub>

**Manufacturer Item Number:** TI-5460

**Manufacturer:** Lorad Chemical Corporation  
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Saint Petersburg, Florida, 33713  
United States of America

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**2. HAZARD IDENTIFICATION**

**Signal Word:** Warning

**Pictograms:**



**Hazard Statements:** H351 Suspected of causing cancer.

**Precautionary Statements:** P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust / fumes / gas / mist / vapors / spray.  
P270 Do not eat, drink, or smoke when using this product.  
P280 Wear protective gloves / protective clothing / eye protection / face protection.  
P284 In case of inadequate ventilation wear respiratory protection.  
P303+264+353 IF ON SKIN (or hair): Wash thoroughly after handling. Rinse skin with water / shower.  
P308+313 If exposed or concerned: Get medical advice / attention.  
P405 Store locked up.  
P501 Dispose of contents / container in accordance with local / regional / national / international regulations.

**HMIS Health Ratings (0-4)**

- Health: 1  
- Flammability: 0  
- Physical: 0

**3. COMPOSITION**

**Additional Names:** Titanium(IV) Oxide; Titania

**Percentage:** 100 wt%

**CAS #:** 13463-67-7

**EC #:** 236-675-5

**SAFETY DATA SHEET**
**4. FIRST AID PROCEDURES**

<b>General Treatment</b>	Consult a physician. Show this SDS to the doctor in attendance. Move out of dangerous area.
<b>Special Treatment:</b>	No Data Available.
<b>Important Symptoms:</b>	Irritation, nausea, headache, shortness of breath
<b>Inhalation:</b>	If breathed in, move person to fresh air. If not breathing give artificial respiration. Consult a physician.
<b>Ingestion:</b>	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
<b>Skin:</b>	Wash off with soap and plenty of water. Consult a physician.
<b>Eyes:</b>	Flush eyes with water as a precaution.

**5. FIREFIGHTING MEASURES**

<b>Flammability:</b>	Not Flammable.
<b>Special Hazards from Substance:</b>	Not Data Available.
<b>Extinguishing Media:</b>	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
<b>Special Fire Fighting Procedures:</b>	Wear self-contained breathing apparatus for firefighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

<b>If Material is Released / Spilled:</b>	Wear appropriate personal protective equipment. Avoid dust formation. Avoid breathing dust. Isolate spill area and provide ventilation. Evacuate personnel to safe areas. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable closed containers for disposal.
<b>Environmental Precautions:</b>	Prevent further leakage or spills if safe to do so. Do not allow to enter drains, sewers, or watercourses.

**7. HANDLING AND STORAGE**

<b>Handling Conditions:</b>	Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
<b>Storage Conditions:</b>	Keep container tightly closed in a dry and well-ventilated place.
<b>Work / Hygienic Maintenance:</b>	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
<b>Ventilation:</b>	Provide appropriate exhaust ventilation at places where dust is formed.

**8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**

Permissible Exposure Limits:	Authority	Basis	Limit	Remarks
	OSHA	PEL	15.0 mg/m <sup>3</sup>	Titanium Dioxide total dust - USA Occupational Exposure Limit (air contaminant) (Table Z-1)
	California	PEL	10.0 mg/m <sup>3</sup>	Total dust - California permissible exposure limit for chemical contaminants (Title 8, Article 107)

**SAFETY DATA SHEET**

<b>Threshold Limit Value:</b>	California	PEL	5.0 mg/m <sup>3</sup>	Respirable fraction - California permissible exposure limit for chemical contaminants (Title 8, Article 107)
	<b>Authority</b>	<b>Basis</b>	<b>Limit</b>	<b>Remarks</b>
	ACGIH	TLV	10.0 mg/m <sup>3</sup>	total dust, 8-hour total weighted average. Lower respiratory tract irritation. Not classifiable as a human carcinogen.
	NOISH	STEL	0.3 mg/m <sup>3</sup>	total dust (ultra-fine particles), up to 10-hour total weighted average. (potential occupational carcinogen)
	NOISH	STEL	2.4 mg/m <sup>3</sup>	total dust (fine particles), up to 10-hour total weighted average.
<b>Special Equipment:</b>	No Data Available.			
<b>Respiratory Protection:</b>	Respiratory protection is not required but is recommended. Wear respirator if there is dust formation or high concentrations of material present. In case of inadequate ventilation or risk of inhalation of dust, use suitable respirator equipment. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).			
<b>Protective Gloves:</b>	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching the glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.			
<b>Eye Protection:</b>	Safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).			
<b>Body Protection:</b>	Wear appropriate protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.			

**9. PHYSICAL AND CHEMICAL CHARACTERISTICS**

<b>Color:</b>	White	<b>Molecular Weight:</b>	79.87 g/mol
<b>Forms:</b>	Powder, Tablets	<b>Density:</b>	4.26 g/cm <sup>3</sup> at 25°C (77°F)
<b>Odor:</b>	Odorless	<b>pH:</b>	No Data Available.
<b>Water Solubility:</b>	Insoluble	<b>Auto-Ignition Temperature:</b>	No Data Available.
<b>Boiling Point:</b>	> 2,900°C (> 5,252°F)	<b>Evaporation Rate:</b>	No Data Available.
<b>Melting Point / Freezing Point:</b>	> 1,855°C (> 3,371°F)	<b>Flammability or Explosive Limits:</b>	No Data Available.
<b>Vapor Pressure:</b>	No Data Available.	<b>Partition Coefficient: n-octanol/ water</b>	No Data Available.
<b>Vapor Density:</b>	No Data Available.	<b>Decomposition Temperature:</b>	No Data Available.
<b>Flash Point:</b>	No Data Available.	<b>Viscosity:</b>	No Data Available.

**10. REACTIVITY**

<b>Stability:</b>	Stable under recommended storage conditions.
<b>Reacts with:</b>	Strong Oxidizing Agents, Strong Acids
<b>Incompatible Conditions:</b>	Excessive heat

**Hazardous Decomposition Products:** No Data Available.

## 11. TOXICOLOGICAL INFORMATION

**Potential Health Effects:**

Eyes: No Data Available.

Skin: Titanium Dioxide does not penetrate either intact or abraded human skin.

Ingestion: No Data Available.

Inhalation: As a nuisance dust, prolonged exposure above recommended levels may cause adverse effects on the lungs.

Chronic: Potential human carcinogen (lung) based on evidence from experimental animals.

**Signs and Symptoms:** No Data Available.

**Aggravate Medical Conditions:** No Data Available.

**Median Lethal Dose:** No Data Available.

**Carcinogen:**

Carcinogenicity - Rat - Inhalation  
Tumorigenic: Carcinogenic by RTECS criteria. Lungs, Throat, or Respiration: Tumors.

Carcinogenicity - Rat - Intramuscular  
Tumorigenic: Neoplastic by RTECS criteria. Blood Lymphomas including Hodgkin's disease.  
Tumorigenic: Tumors at site of application.

IARC: Titanium Dioxide is listed by IARC as possibly carcinogenic to humans (Group 2B). This listing is based on inadequate evidence of carcinogenicity in humans and sufficient evidence in experimental animals. In lifetime inhalation studies of rats, airborne respirable-sized titanium dioxide particles have been shown to cause lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

## 12. ECOLOGICAL INFORMATION

**Aquatic Toxicity:**

Toxicity to fish:  
LC50 - other fish -> 1,000 mg/l - 96h

Toxicity to daphnia and other aquatic invertebrates:  
EC50 - Daphnia magna (water flea) -> 1,000 mg/l - 48h  
EC0 - Daphnia magna (water flea) -> 1,000 mg/l - 48h

**Persistence and degradability:** No Data Available.

**Bioaccumulative potential:** No Data Available.

**Notes:** No Data Available.

**13. DISPOSAL CONSIDERATIONS**

**Disposal:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Empty containers should be taken to an appropriate waste handling site for recycling or disposal. Dispose of in accordance with local, state, or national regulations.

**14. TRANSPORTATION DATA**

**Hazardous:** **DoT:** Not Dangerous Goods.  
**IMDG:** Not Dangerous Goods.  
**IATA:** Not Dangerous Goods.

**Pictogram:** N/A

**Hazard Class:** N/A

**Packing Group:** N/A

**UN Number:** N/A

**Proper Shipping Name:** **DoT:** N/A

**IMDG:** N/A

**IATA:** N/A

**15. REGULATORY INFORMATION**

**SARA 302 Components** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components** This material does not contain any chemical component with known CAS numbers that exceed the threshold (de minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards** No SARA Hazards.

**Massachusetts Right to Know Components** No components are subject to the Ma. Right to Know Act.

**Pennsylvania Right to Know Components** Titanium Dioxide (CAS No. 13463-67-7).

**New Jersey Right to Know Components** Titanium Dioxide (CAS No. 13463-67-7).

**California Prop. 65 Components** WARNING! This product contains a chemical known to the State of California to cause cancer. (Titanium dioxide (airborne, unbound particles of respirable size))

**16. OTHER INFORMATION**

Copyright 2018 Lorad Chemical Corporation. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation. The information in this sheet does not represent a guarantee of the properties of the product. Lorad Chemical Corporation and its Affiliates make no warranty with respect to the accuracy of the information or the suitability of this product for any particular application, and shall not be held liable for any damage resulting from handling or from contact with the above product.

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