LTS Research Laboratories, Inc.
Safety Data Sheet
Titanium Oxide, Manganese Doped

1. Product and Company Identification

Trade Name:	Titanium oxide
Chemical Formula:	TiO_2-Mn
Recommended Use:	Scientific research and development
Manufacturer/Supplier:	LTS Research Laboratories, Inc.
Street:	37 Ramland Road
City:	Orangeburg
State:	New York
Zip Code:	10962
Country:	USA
Tel #:	845-587-2436 / 845-lts-chem
Emergency Contact (ChemTrec) Tel #:	800-424-9300 (US & Canada) +1-703-527-3887 (International)

2. Hazards Identification

Signal Word: Warning

Hazard Statements:	H351 Suspected of causing cancer
Precautionary Statements:	P281 Use personal protective equipment as required P201 Obtain special instructions before use P308+P313 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
Reactivity:	0

3. Composition

Chemical Family:	Ceramic
Additional Names:	Titania, Titanium dioxide, Titanium(IV) oxide, Rutile, Anatase
Titanium oxide (TiO_2):	
Percentage:	90-100 wt%
CAS #:	13463-67-7 (General) 7440-70-2 (Anatase) 7440-80-0 (Rutile)
EC #:	236-675-5 (General) 215-280-1 (Anatase) 215-282-2 (Rutile)
Manganese (MnO_2):	
Percentage:	0-10 wt%
CAS #:	1313-13-9
EC #:	215-202-6

4. First Aid Procedures

General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:	Give one to two glasses of water and induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person.
Skin:	Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes:	Flush eyes with water, blinking often for ten minutes.

5. Fire and explosion hazards data

Flammability:	Non-flammable, except as powder
Flash Point:	N/A
Autoignition Temperature:	N/A
Extinguishing Media:	Use suitable extinguishing agent for surrounding material and type of fire.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes.

6. Accidental release measures

If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

7. Handling and storage

Handling Conditions:	Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container.
Work/Hygienic Maintenance:	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.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below TLV.

8. Exposure Controls / Personal Protection

Permissible Exposure Limits:	None
Threshold Limit Value:	None
Special Equipment:	None
Respiratory Protection:	Dust Respirator, NIOSH approved
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses / goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

Color	White or off-white
Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	2972 °C
Melting Point:	1843 °C
Density:	4.23 g/cc (Rutile), 3.78 g/cc (Anatase)
Molecular weight:	79.90 g/mol

10. Reactivity

Stability:	Stable under recommended storage conditions
Reacts With:	Oxidizing agents
Incompatible Conditions:	None
Haz. Decomposition Products:	Metal oxide fume

11. Toxicological Information

Potential Health Effects:

Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	Low toxicity by ingestion
Inhalation:	May cause irritation
Chronic:	N/A

Routes of Entry:	None
Target Organs:	N/A
Signs & Symptoms of Exposure:	N/A
Medical Conditions Aggravated by Exposure:	N/A
Median Lethal Dose:	None
Carcinogen:	Suspected of causing cancer

12. Ecological Information

Ecological data is not available.

13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

14. Transportation Data

Hazardous:	Not hazardous for transportation
Hazard Class:	N/A
Packing Group:	N/A
UN Number:	N/A
Proper Shipping Name:	N/A

15. Regulatory Information

Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	No

16. Other information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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