1. Product and Company Identification

Trade Name: Titanium oxide  
Chemical Formula: Ti₂O₅, Ti₃O₇, TiO, Ti₂O₇, TiO₃, Ti₅O₇, TiOₓ  
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 #: 855-587-2436 / 855-lts-chem  
Emergency Contact: 800-424-9300 (US & Canada)  
(ChemTrec) Tel #: +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: Titanium suboxide, Titanium sesquioxide, Titanium monoxide, Titania, Titanium(III) oxide, Titanium(II) oxide  

Titanium oxide (TiO₂):  
Percentage: 100 wt%  
CAS #: 13463-67-7  
EC #: 236-675-5  

Titanium oxide (Ti₂O₅):  
CAS #: 1344-54-3  

Titanium oxide (Ti₃O₇):  
CAS#: 12065-65-5  

Titanium oxide (Ti₅O₇, TiOₓ):  
CAS#: 107372-98-5
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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>White or golden or black or purple/blue</td>
</tr>
<tr>
<td>Form</td>
<td>Powder, Granules, Pellets, Sputtering target, Custom parts</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Density</td>
<td>N/A</td>
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<tr>
<td>Molecular weight</td>
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</table>

10. Reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable under recommended storage conditions</td>
</tr>
<tr>
<td>Reacts With</td>
<td>Oxidizing agents</td>
</tr>
<tr>
<td>Incompatible Conditions</td>
<td>None</td>
</tr>
<tr>
<td>Haz. Decomposition Products</td>
<td>Metal oxide fume</td>
</tr>
</tbody>
</table>

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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