



Super Conductor Materials, Inc.

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Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revision Date: January 8th, 2019

SAFETY DATA SHEET

Identity: Lithium Titanate

Formula: Li₂TiO₃

SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 109.78

CAS #	OSHA PEL	ACGIH TLV	%
12031-82-2	NE	NE	0.0-100.0%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: 1520.00°C – 1564.00°C

Specific Gravity (Water=1): N/A

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble

Appearance and odor: White-tan powder and pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown

Explosive Limits: LEL: N/A

UEL: N/A

Extinguishing Media: Use suitable extinguishing agent for surrounding material and type of fire

Special Fire Fighting Procedures:

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards:

In involved in a fire, lithium titanate may emit toxic fumes

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (instability): None



Incompatibility (Materials to avoid): None recorded

Hazardous Decomposition or Byproducts: None recorded

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Other? No

To the best of our knowledge, the chemical, physical and toxicological properties of lithium titanate have not been thoroughly investigated and recorded.

The toxicity of lithium compounds is a function of their solubility in water.

Lithium ions have central nervous system toxicity. The initial effects of lithium exposure are tremors of the hands, nausea, micturition, slurred speech, sluggishness, sleepiness, vertigo, thirst, and increased urine volume. Effects from continued exposure are apathy, anorexia, fatigue, lethargy, muscular weakness, and changes in ECG. Long-term exposure leads to hypothyroidism, leukocytosis, edema, weight gain, polydipsia/polyurea (increased water intake leading to increased urinary output), memory impairment, seizures, kidney damage, shock, hypotension, cardiac arrhythmias, coma, and death. (Sax, *Dangerous Properties of Industrial Materials*, eighth edition).

Titanium is generally considered to be physiologically inert. There are no reported cases in the literature where titanium as such has caused human intoxication. The dusts of titanium or most titanium compounds, such as titanium oxide, may be placed in the nuisance category. (Sax, *Dangerous Properties of Industrial Materials*, eighth edition).

Signs and Symptoms of Overexposure:

Inhalation: May cause a red, dry, burning throat, inflammation to the respiratory tract.

Ingestion: May cause irritation to the esophagus, nausea, muscular twitches and mental confusion.

Skin: May cause redness, itching, and inflammation

Eye: May cause redness, itching, aching and inflammation

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause irritation to the respiratory tract and mucus membrane

Chronic: May cause pulmonary edema and lung damage

Ingestion:

Acute: May cause central nervous system effects, circulatory failure and cardiovascular collapse.

Chronic: May cause gastrointestinal irritation, renal dysfunction, derangement of neuromuscular activity, diabetes and kidney damage.

Skin:

Acute: May cause irritation

Chronic: No chronic health effects recorded



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Eye:

Acute: May cause irritation

Chronic: May cause blurred vision

Target Organs: May effect respiratory system, skin, and eyes.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Medical Conditions Aggravated by Exposure: Pre-existing respiratory and skin disorder.

Emergency and First Aid Procedures:

Inhalation: Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

Ingestion: Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person

Skin: Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

Waste disposal method:

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

Hazard Label Information:

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

Ventilation:

Local Exhaust: To maintain concentration at or below the PEL, TLV

Mechanical (Gen): Recommended

Work/Hygienic/Maintenance Practices:

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established