



Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · www.scm-inc.com

Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revision Date: January 8th, 2019

SAFETY DATA SHEET

Identity: Titanium

Formula: Ti

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: 47.87

CAS #	OSHA PEL	ACGIH TLV	%
7440-32-6	NE	NE	0.0 -100.0 %

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 3277°C

Melting Point: 1668°C

Evaporation Rate: N/A

Solubility in water: Insoluble/

Decomposes to stem at 700-800°C

Vapor Pressure (vs. air or mmHg): 0 at 20.0°C

Specific Gravity (Water=1): 4.506 g/cm³ at 20.0°C

Flash Point: N/A

Appearance and odor: Dark gray powder or silver-gray pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Unknown

Explosive Limits: LEL: N/A

UEL: N/A

Extinguishing Media:

AUTOIGNITION POINT: 1200C for solid metal in air

250C for powder in air

USE: Class D, inert gas (argon or helium) or other metal extinguishing agent.

DO NOT USE: Water or carbon dioxide. Water applied to hot titanium may evolve hydrogen, causing an explosion.

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:

- May burn in an atmosphere of carbon dioxide, nitrogen or air.
- May react violently with BrF₃; CuO; PbO; (Ni + KClO₃), metaloxy salts; halocarbons; halogens; CO₂ metal carbonates; Al; AgF; O₂; nitril fluoride; HNO₃; O₂; KClO₃; KNO₃; KMnO₄; steam at 704F; trichloroethylene; trichlorotri-fluoroethane. Titanium, in the absence of moisture, burns slowly, but evolves much heat.
- Water applied to hot titanium may evolve hydrogen, causing an explosion.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (instability): Dispersion in air

Incompatibility (Materials to avoid):

TITANIUM: Air, BrF₃, CuO, PbO, (Ni + KClO₃), metaloxy salts, halocarbons, halogens. CO₂, metal carbonates, Al, AgF, O₂ nitril fluoride, HNO₃, KClO₃, KNO₃, KMnO₄, steam (>700C), trichloroethylene, trichlorotri-fluoroethane, oxygen, carbon black, carbon dioxide and nitrogen, sodium chlorate.

Water applied to hot titanium may evolve hydrogen, causing an explosion.

Hazardous Decomposition or Byproducts: Metal fumes and titanium oxides

Hazardous Polymerization: Will not occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

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

THIS MATERIAL IS CONSIDERED TO BE PHYSIOLOGICALLY INERT.

TITANIUM: This material 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: Prolonged exposure may cause a red, dry throat, coughing and shortness of breath.

Ingestion: No chronic or acute health effects recorded

Skin: May cause redness and itching

Eye: May cause redness, itching and watering

Health Hazards (Acute and Chronic):

Inhalation:

Acute: Prolonged inhalation may cause mild irritation to the lungs and respiratory tract.

Chronic: May cause fibrotic lung changes.

Ingestion:

Acute: Relatively non-toxic, poorly absorbed from the ailmentary tract.

Chronic: No chronic health effects recorded.

Skin:

Acute: May cause abbrasive irritation.



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Chronic: No chronic health effects recorded.

Eye:

Acute: May cause abbrasive irritation.

Chronic: No chronic health effects recorded.

Target Organs: No target organ recorded

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

Medical Conditions Aggravated by Exposure: None recorded

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.

Precautions: Do not disperse powder or dust in air.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

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

Ventilation:

Local Exhaust: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels.

Mechanical (General): Recommended



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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
