



# Super Conductor Materials, Inc.

391 Spook Rock Industrial Park, Suffern, NY 10901 · 845.368.0240 · Fax 845.368.0250 · www.scm-inc.com

Chemtrec: (800) 424-9300

Poison Center: (800) 562-8236

Revision Date: January 8<sup>th</sup>, 2019

## SAFETY DATA SHEET

Identity: Molybdenum Telluride

Formula: MoTe<sub>2</sub>

### 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: 315.14

CAS #	OSHA PEL	ACGIH TLV	%
12058-20-7	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	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: N/A

Density: N/A g/cm<sup>3</sup>

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: N/A

*Appearance and odor:* 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:* When heated to decomposition, molybdenum telluride may emit toxic fumes of tellurium.



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## SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (stability):* None

*Incompatibility:* None recorded

*Hazardous Decomposition or Byproducts:* Fumes of tellurium

*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 molybdenum telluride have not been thoroughly investigated and recorded.

Molybdenum compounds are poison by subcutaneous and intraperitoneal routes. Molybdenum and its compounds are highly toxic based upon animal experiments. Symptoms of acute poisoning include severe gastrointestinal irritation with diarrhea, coma and deaths from heart failure. Experimental animals exposed to high levels accumulated Mo in the lungs spleen, and heart, and showed a decrease of DNA and RNA in the liver, kidneys and spleen. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Elemental tellurium has relatively low toxicity. It is converted in the body to dimethyl telluride which imparts a garlic-like odor to the breath and sweat. Heavy exposures may, in addition, result in headache, drowsiness, metallic taste, loss of appetite, nausea, tremors, convulsions, and respiratory arrest. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

### Signs and Symptoms of Overexposure:

*Inhalation:* May cause a red, dry throat, coughing, garlic-like odor to breath, sweat and urine, loss of appetite, sleepiness and nausea.

*Ingestion:* May cause a dry mouth, garlic-like odor to breath and urine, loss of appetite, sleepiness and nausea. Acute molybdenum poisoning may cause severe gastrointestinal irritation, diarrhea, coma, and death from cardiac failure. Chronic molybdenum poisoning as seen in animals may cause: loss of weight, anorexia, anemia, deficient lactation, male sterility, osteoporosis and bone-joint abnormalities.

*Skin:* May cause redness, burning, and itching.

*Eye:* May cause redness, burning, itching and watering.

### Health Hazards (Acute and Chronic):

#### *Inhalation:*

Acute: DANGER-POISON. May cause irritation to the upper respiratory system, dry mouth, garlic odor to breath and urine.

Chronic: May cause pneumoconiosis, anorexia, nausea, depression to the central nervous system and somnolence.

#### *Ingestion:*

Acute: DANGER-POISON. May cause a dry mouth, suppression of sweat, garlic odor to breath and urine and acute molybdenum poisoning.



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Chronic: May cause anorexia, nausea, depression to the central nervous system, somnolence and chronic molybdenum poisoning.

*Skin:*

Acute: May cause irritation.

Chronic: May cause dermatitis.

*Eye:*

Acute: May cause irritation.

Chronic: No chronic health effects recorded.

*Target Organs:* May affect the lungs, bones, spleen and heart.

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

*Medical Conditions Aggravated by Exposure:* Pre-existing respiratory disorders.

*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 low exposure 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