



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: Samarium

Formula: Sm

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: 150.36

CAS #	OSHA PEL	ACGIH TLV	%
7440-19-9	NE	NE	100.0%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 1794.00°C

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

Melting Point: 1072.00°C

Specific Gravity (Water=1): 7.52 gm/cc

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble/

Soluble in acids

Appearance and odor: White-gray 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:

- May be flammable by spontaneous chemical reaction with oxidizers.
- Samarium metal is an active reducing agent.
- Reacts with water to form explosive hydrogen gas.



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- May react violently with halogens.
- Potentially explosive reaction with 1,1,2-trichlorotrifluoroethane.
- Flammable in the form of dust when exposed to flame or other ignition sources.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (instability): None

Incompatibility (Materials to avoid): Water, steam, moisture, oxidizing agents, halogens, 1,1,2-trichlorotrifluoroethane and strong acids.

Hazardous Decomposition or Byproducts: Hydrogen gas

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 samarium metal have not been thoroughly investigated and recorded.

Samarium is considered a rare earth metal. These metals are moderately to highly toxic. The symptoms of toxicity of the rare earth elements include writhing, ataxia, labored respiration, walking on the toes with arched back and sedation. The rare earth elements exhibit low toxicity by ingestion exposure. However, the intraperitoneal route is highly toxic while the subcutaneous route is poison to moderately toxic. The production of skin and lung granulomas after exposure to them requires extensive protection to prevent such exposure. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Signs and Symptoms of Overexposure:

Inhalation: May cause a red, fry throat and coughing

Ingestion: May effect the coagulation time of the blood

Skin: May cause redness, burning, and itching

Eye: May cause redness, burning, itching and watering

Health Hazards (Acute and Chronic):

Inhalation:

Acute: May cause irritation to the upper respiratory system.

Chronic: May cause writhing, ataxia, labored respiration, walking on toes with arched back, sedation, pulmonary edema and lung granuloma.

Ingestion:

Acute: Considered to have low toxicity by ingestion.

Chronic: May act as a blood anticoagulant.

Skin:

Acute: May cause irritation.

Chronic: No chronic health effects recorded.



Eye:

Acute: May cause moderate irritation.

Chronic: No chronic health effects recorded.

Target Organs: May affect the blood.

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

Medical Conditions Aggravated by Exposure: Pre-existing lung 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.

Precautions: Samarium metal is air and moisture sensitive, handle and store under argon or other inert gas.

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

Special: Handle in a controlled atmosphere

Mechanical (General): Not recommended

Other: Handle in an inert gas such as argon



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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
