



# 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: Nickel disilicide

Formula: NiSi<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 – INGREDIENTS/SUMMARY OF HAZARDS

Molecular Weight: 114.88

CAS #	OSHA/PEL	ACGIH TLV	%
12201-89-7	1mg (Ni)/m <sup>3</sup>	0.2mg (Ni)/m <sup>3</sup>	0.0-100.0%

### SECTION III – PHYSICAL DATA

Physical State: Solid

Boiling Point: N/A

Specific Gravity (H<sub>2</sub>O=1): N/A

Melting Point: N/A

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

Evaporation Rate: N/A

Flash Point: N/A

Solubility in water: Insoluble

*Appearance and Odor:* Gray powder and pieces, no odor

### SECTION IV – FIRE AND EXPLOSION HAZARD DATA

*Method Used:* Non-Flammable

*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 nickel silicide may emit toxic metal oxide fumes.

### SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (instability):* None



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*Incompatibility:* None recorded

*Hazardous Decomposition or Byproducts:* Metal oxide fume

*Hazardous Polymerization:* Will not occur

*Conditions to avoid (hazardous polymerization):* None

## SECTION VI – HEALTH HAZARDS

*Route of entry:* Inhalation? Yes      Ingestion? Yes      Skin? Yes      Eyes? Yes      Other? No

To the best of our knowledge, the chemical, physical, and toxicological properties of nickel silicide have not been thoroughly investigated.

Nickel is a confirmed carcinogen with experimental carcinogenic, neoplastigenic, tumorigenic and teratogenic data, and is a poison by ingestion, intratracheal, intraperitoneal, subcutaneous and intravenous routes. An experimental teratogen. Ingestion of soluble salts causes nausea, vomiting and diarrhea. Hypersensitivity to nickel is common and can cause allergic contact dermatitis, pulmonary asthma, conjunctivitis and inflammatory reactions around nickel-containing medical implants and prosthesis. Cancer develops in rodents after administration of Ni<sub>3</sub>S<sub>2</sub>, NiO or Ni (Co<sub>4</sub>). Pulmonary damage develops in rodents chronically exposed to aerosols of nickel dust, NiO<sub>2</sub> or NiO. (Sax, Dangerous Properties of Industrial Materials, eighth edition.)

Inorganic silicon compounds may be acute inhalation irritants. Prolonged inhalation may cause pulmonary fibrosis known as silicosis.

### Signs and Symptoms of Exposure:

*Inhalation:* May cause a red, dry, sore nose and throat, coughing and shortness of breath.

*Ingestion:* May cause gastritis, convulsions, asphyxia, giddiness, nausea, diarrhea and vomiting. Nickel toxicity may cause: gastroenteritis; Nervous symptoms such as tremor, chorea-like movements and paralysis occur prior to death, which occurs mostly from heart failure.

*Skin:* May cause red, itching, swelling, burning and ulcers.

*Eye:* May cause red, itching and watering.

### Health Hazards (Acute and Chronic):

#### *Inhalation:*

Acute: May cause irritation to the upper respiratory tract, mucous membranes and nasal cavities. May cause pulmonary asthma attacks.

Chronic: Prolonged or repeated inhalation may cause pneumonitis.

#### *Ingestion:*

Acute: Nickel is poison by ingestion. Large doses may cause intestinal disorders, convulsions and asphyxia.

Chronic: May cause nickel toxicity.

#### *Skin:*

Acute: May cause irritation.

Chronic: May sensitize the skin (nickel itch). May cause allergic dermatitis, eczematous dermatitis and may be accompanied a week later with superficial skin ulcers, which may discharge and become crusted.

#### *Eye:*

Acute: May cause irritation.

Chronic: May cause conjunctivitis.

*Target Organs:* May affect the nasal cavity, respiratory system, lungs, blood and skin.

*Carcinogenicity:* NTP? Yes

IARC Monographs? Yes

OSHA Regulated? Yes



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*Medical Conditions Aggravated by Exposure:* Pre-existing respiratory disorders, pulmonary functions, asthma, 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 skin contact.

*Ventilation:*

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

Special: Handle in a controlled environment when in dust or powder form.

Mechanical (General): 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