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 8th, 2019

SAFETY DATA SHEET

Identity: Nickel Formula: Ni

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: 58.71

CAS #	OSHA/PEL	ACGIH TLV	%
7440-02-0	1.0 mg/m^3	1.5 mg/m^3	0.0-100.0

SECTION III – PHYSICAL DATA

Physical State: Solid

Boiling Point: 2730.00°C
Melting Point: 1455.00ºC
Evaporation Rate: N/A
Solubility in water: Insoluble / Soluble in dilute HNO3

Specific Gravity (H_2O=1): 8.90 g/cm^3
Vapor Pressure (vs. air or mmHg): 1mm at 1810.0°C
Vapor Density (vs. air=1): N/A
Flash point: N/A

Appearance and Odor: Silvery-white, metallic powder, odorless

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Method Used: Flammable Solid *Explosive Limits*: LEL: N/A UEL: N/A
Extinguishing Media: Use Class D or other suitable extinguishing agent for metal fires

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:

Contact with strong acids may form flammable and explosive hydrogen gas.
Contact with sulfur may cause evolution of heat.
Nickel reacts violently with fluorine, ammonium nitrate, hydrazine, ammonia, (H_2 + dioxane), per formic acid, phosphorous, selenium, sulfur and (Ti + $KClO_3$)
Powder may ignite spontaneously in air.

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SECTION V – HEALTH HAZARDS

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

Nickel is a confirmed carcinogen with experimental carcinogenic, neoplastigenic, tumorigenic and teratogenic data. 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. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

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. Nervous symptoms include tremors, chorea-like movements and paralysis occurs prior to death, which occurs mostly from heart failure.
Skin: May cause redness, itching, swelling, burning and ulcers
Eye: May cause redness, 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, metal fume fever and non-infectious pneumonia
Chronic: Prolonged or repeated inhalation may cause pneumatic

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 with skin, 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 cavities, respiratory system, lungs, blood, mucous membranes, gastrointestinal system, eyes and skin.
Carcinogenicity: NTP? Yes IARC Monographs? Yes OSHA Regulated? Yes
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

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SECTION VI - REACTIVITY DATA

Stability: Stable
Conditions to Avoid (stability): None
Incompatibility:

Oxidizing agents, sulfur compounds, hydrogen oxygen, magnesium silicate, methanol, organic solvents, aluminum, aluminum chloride, ethylene, p-dioxan, strong acids, fluorine, ammonium nitrate, per formic acid, selenium, ammonia, hydrazine, phosphorous, titanium chlorate, potassium chlorate, wood and other combustibles

Hazardous Decomposition or Byproducts: Nickel carbonyl, oxides of nitrogen, hydrogen gas
Hazardous Polymerization: Will not occur
Conditions to avoid (hazardous polymerization): None

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Precautions to be taken in handling:

Store and handle in a controlled environment under and inert gas such as Argon (Ar)

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. Use non-sparking tools

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 exposure levels.
Special: Handle in a controlled environment in an inert gas such as Argon (Ar)
Mechanical (General): NOT 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