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INTRAMICRON

MATERIAL SAFETY DATA SHEET - MSDS

PRODUCT IDENTIFICATION

Date Prepared: April 14th, 2011

24 Hour Emergency #: (334) 740-8310

Chemical Name: **Nickel Fiber**
Chemical Family: **Nickel (Solid Metal)**
Formula: **Nickel, Ni**

HAZARDOUS INGREDIENTS

Alloys & Metallic Coatings [OSHA]

Component	CAS #	Weight%	ACGIH TLV (mg/m^3)
Nickel, Ni (BASE METAL)	**7440-02-0**	96-100%	[1.0 (metal)] 1.5 (metal) 0.1 Soluble, 0.2 insoluble
Iron, Fe	7439-89-6	0-4%	[10 (Oxide)] 5 (oxide fume)

% of allowable alloy varies with grade of Nickel
TLV (2003 ACGIH **T**hreshold **L**imit **V**alue)
*All components of this product are listed on the Toxic Substance Control Act (TSCA) inventory of chemical substances.

PHYSICAL PROPERTIES

Appearance:	Metallic fiber
Odor:	None
Melting Point:	2648°F (1453°C)
Boiling Point:	4946°F (2730°C)
Vapor Pressure:	Not Applicable
Specific Gravity:	8.5 – 8.9 grams / cubic centimeter
Vapor Density:	Not applicable
% Volitile (By Vol.):	Not applicable
Evaporation Rate:	0
Solubility In Water:	None

HEALTH & HAZARD INFORMATION

THRESHOLD LIMIT VALUE: 1 mg / $meter^3$ dust

EFFECTS OF OVEREXPOSURE: Short term exposure to fumes / dust may produce irritation of eyes and respiratory system.

Chronic overexposure to small airborne fibers may cause lung injury and chronic inhalation overexposure to nickel dust has produced cancer in laboratory animals.

Exposure to high concentrations of dust and fumes can cause sensitization, dermatitis, inflammation and / or ulceration of upper respiratory tract and possibly cancer of nasal passages and lungs.

Phosgene can be produced if chlorinated solvent vapors are present in user operations.

The U.S. National Toxicology Program (NTP) 10th Report on Carcinogens has listed "metallic nickel" as "reasonably anticipated to be a human carcinogen" and "nickel compounds" as "known human carcinogens". "Nickel Alloys" were reviewed but not listed. The International Agency for Research on Cancer (IARC) concluded that nickel compounds were carcinogenic to humans and that metallic nickel is possibly carcinogenic to humans. Epidemiological studies of workers exposed to nickel powder and to dust and fume generated in the production of nickel alloys have not indicated the presence of a significant respiratory cancer hazard. The inhalation of nickel powder has not resulted in an increased incidence of malignant tumors in rodents. Repeated intratracheal instillation of nickel powder produced an increased incidence of malignant lung tumors in rats, but did not produce an increased incidence in hamsters when administered at

the maximum tolerated dose. However, single intratracheal instillations of nickel powder in hamsters at doses near the LD50 have produced an increased incidence of fibrosarcomas, mesotheliomas and rhabdomyosarcomas. Inhalation of nickel powder at concentrations 15 times the PEL irritated the respiratory tract in rodents. Nickel is a known sensitizer and may produce allergic reactions.

HEALTH & HAZARD INFORMATION (Continued)

Recent epidemiological studies of workers melting and working alloys containing nickel have found an associated increased risk of cancer.

FIRST AID: In case of skin contact, wash affected areas of skin with soap and water. In case of eye contact, immediately irrigate with plenty of water for fifteen (15) minutes.

FIRE AND EXPLOSION HAZARD INFORMATION

Flash Point:	Not Applicable
Flammable Limits:	Not Applicable
Extinguishing Media:	Water, carbon dioxide or dry chemical
Special Fire Fighting Procedures:	Wear self-contained, positive pressure breathing apparatus and full fire fighting protective clothing

REACTIVITY DATA

Stability:	Stable
Conditions To Avoid:	None known
Polymerization:	Will not occur
Incompatible Materials:	Strong acids to produce hydrogen gas
Hazardous Decomposition Products:	Thermal decomposition or combustion may produce oxides of Nickel

SPECIAL PROTECTION INFORMATION

Fiber may penetrate unprotected skin so gloves should be work when handling (disposable latex or heavier). Like wood splinters, metal fibers are a skin irritant.

Engineering controls are not usually necessary, if good hygiene practices are strictly followed. For fiber less than 2.0 mm long extra precautions should be taken, due to its tendency to become airborne, especially as the supplied diameter drops below 20 micron. Respiratory protection is generally not required during normal operations, but should be used if the fiber is "opened" (separated in air). Approved dust and fume respirators should be used to avoid excessive inhalation of particulate when exposure exceeds TLVs.

SPILL OR LEAK PROCEDURES

Steps To Be Taken In Case Material Is Released Or Spilled:	Sweep up spills and place in a waste disposal container, dispose of only according to EPA regulations. Flush area with water. Material may be recovered by use of a magnet inside a plastic bag, then remove magnet from bag to release fiber.

SPECIAL PRECAUTIONS

Handling and Storage / Other:	Avoid use of compressed air for clean-up