Nickel

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Manufacturer/Supplier:

ESPI Metals

1050 Benson Way, Ashland, OR 97520

Toll Free (800) 638-2581 * Fax (541) 488-8313

E-Mail: sales@espimetals.com

Product Name: Nickel

Formula: Ni

CAS Percent: 7440-02-0

II. HAZARDOUS INGREDIENTS

Hazardous Component: Nickel

Percent (%): 0-100

OSHA/PEL: 1.0 mg/m^3

ACGIH/TLV: 1.5 mg/m^3

HMIS Ratings (Solid):

Health: 0

Flammability: 0

Reactivity: 0

HMIS Ratings (Powder):

Health: 1

Flammability: 3

Reactivity: 1

III. PHYSICAL DATA

Boiling Point: 2730 ^oC

Melting Point: 1453 ^oC

Specific Gravity: 8.9 g/cm^3

Solubility in H_2O: Insoluble

Appearance and Odor: Silvery grey metal, no odor.

IV. FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/A

Autoignition Temperature: N/A

Flammable Limits: **Upper**: N/A **Lower**: N/A

Extinguishing Media: Non-flammable in form of metal pieces, wire or foil. If involved in a fire use dry sand, dry ground Dolomite, dry powder extinguishing agents.

Special Fire Fighting Procedures: If involved in a fire wear NIOSH/MSHA approved self-contained breathing apparatus, flame and chemical resistant protective clothing, hat, gloves and boots. If without risk move material out of fire area.

Unusual Fire & Explosion Hazard: Flammable only in dust or powder form.

V. HEALTH HAZARD INFORMATION

Effects of Exposure:

Under normal handling and use, exposure to massive forms of nickel presents few health hazards. If, however, massive forms are converted to particulates, then both acute and chronic health hazards are possible. 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).

Acute Effects:

Inhalation: Rare cases of asthma have been reported in individuals exposed to some forms of particulates containing nickel, particularly in the nickel sulfate form. Respiratory sensitization is possible in susceptible individuals.

Ingestion: This is not a normal route of entry. Nickel has a low oral toxicity.

Skin: Prolonged exposure to nickel may cause contact dermatitis or other allergic reactions, especially in sensitive individuals. Although contact with massive forms of nickel could cause dermatitis it is the finer powders which are the main hazard, especially in association with a moist environment.

Eye: Particulates containing nickel may cause irritation due to mechanical effects.

Carcinogenicity: **NTP**: Yes **IARC**: Yes **OSHA**: Yes **NIOSH**: No

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove to fresh air. If breathing does not improve, administer oxygen and contact a physician.

INGESTION: If large amounts are ingested, induce vomiting only if conscious and contact a physician.

SKIN: Wash off contaminated areas with water or remove contaminated clothing and shower. Contaminated clothing should be washed before reuse. Avoid prolonged or repeated contact with the skin.

EYE: Irrigate with copious amounts of water for at least 15 minutes.

VI. REACTIVITY DATA

Stability: Stable

Conditions to Avoid: None

Incompatibility (Material to Avoid): Reacts with strong acids to produce hydrogen gas.

Hazardous Decomposition Procedures: Nickel will dissolve in mineral acids and strong oxidizers. Contact with acids will release hydrogen gas which is flammable and explosive.

Hazardous Polymerization: Will not occur

VII. SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled: Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area and provide ventilation. Scoop up or 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: In accordance with all applicable Federal, State, and Local regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection: NIOSH approved dust and fume respirator should be used when exposure exceeds TLV's.

Ventilation: Local exhaust ventilation should be utilized when welding, burning, sawing, brazing, grinding or machining when exposure exceeds TLV's.

Protective Gloves: Leather or rubber gloves

Eye Protection: Safety goggles

Other Protective Equipment: Lab coats and aprons or coveralls. Coveralls should be used preferably for one day if exposed to particulates, then washed before reuse.

IX. SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Nickel metal should be stored in covered containers to avoid contamination because of dampness and dust. Partly used containers should be recovered. In welding, precautions should be taken for airborne contaminants which may originate from components of the welding rod. Arc or spark generated when welding or burning could be a source of ignition for combustible and flammable materials.

Work Practices: Always use gloves to avoid prolonged or repeated direct skin contact. If particulates containing nickel are encountered, then approved respirators with a HEPA filter are recommended. Wash in soap and water after exposure to any particulates. Do not eat or drink in work area. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and facilities for washing.

TSCA Listed: Yes

DOT Regulations:

Solid Forms:

Hazard Class: None

Powders:

Hazard Class: 4.1

Identification Number: 3089

Packing Group: III

Proper Shipping Name: Metal powder, flammable, n.o.s. (nickel powder)

The above information is believed to be correct, but does not purport to be all inclusive and shall only be used as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

Issued by: S. Dierks

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