

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product Name	Nickel Metal Powder, Enriched Nickel
Chemical Formula	Ni
Molecular Weight	58.71 amu
CAS No.	7440-02-0
Supplier Address*	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac/ +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION**Emergency Overview:**

Harmful. Flammable (USA) Highly Flammable (EU).
 Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
 Possible Carcinogen (US). Target organ(s): Lungs. Nose. California Prop. 65 carcinogen.

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 3 Flammability = 2 Reactivity = 1



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 3 Flammability = 2 Physical Hazard = 1

HEALTH HAZARD	3
FLAMMABILITY	2
PHYSICAL HAZARD	1

For additional information on toxicity, please refer to Section 10.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	Nickel Metal Powder, Enriched Nickel
CAS No.:	7440-02-0
Chemical Formula:	Ni
Molecular Weight:	58.71 amu

4. FIRST AID MEASURES

<i>Oral Exposure</i>	If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
<i>Inhalation</i>	If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
<i>Dermal Exposure</i>	In case of contact, immediately wash skin with soap and copious amounts of water.
<i>Eye Exposure</i>	In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

5. FIREFIGHTING MEASURES

<i>Flammable Hazard</i>	Yes
<i>Pyrophoric/Autoignition</i>	Yes
<i>Explosion Data</i>	This material, like most materials in powder form, is capable of creating a dust explosion.
<i>Conditions of Flammability</i>	Catches fire if exposed to air
<i>Flash Point</i>	Not available
<i>Autoignition Temperature</i>	Not available
<i>Suitable Extinguishing Media</i>	Dry chemical powder
Firefighting	
<i>Protective Equipment</i>	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
<i>Specific Hazards</i>	Emits toxic fumes under fire conditions. Flammable solid.

6. ACCIDENTAL RELEASE MEASURES

<i>In Case of Leak or Spill</i>	Evacuate area. Shut off all sources of ignition. Use non-sparking tools.
<i>Personal Precautions</i>	Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Wear disposable coveralls and discard them after use.
<i>Methods for Cleaning Up</i>	Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

<i>Handling</i>	Avoid breathing dust. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Handle under nitrogen.
<i>Storage</i>	Suitable: Keep tightly closed. Keep away from heat, sparks and open flame. Store in a cool, dry place. Store under nitrogen.
<i>Special Requirements</i>	Handle and store under inert gas.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls Mechanical exhaust required. Safety shower and eye bath. Use non-sparking tools.

Personal Protective Equipment

Respirators Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate, use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Other Wear appropriate government-approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

General Hygiene Measures Wash thoroughly after handling. Discard contaminated clothing and shoes.

Exposure Limits - RTECS

Country	Source	Type	Value
USA	MSHA Standard-air	TWA	1 mg/m ³
USA	OSHA	PEL	8H TWA 1 mg (Ni)/m ³
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	0.015 mg (Ni)/m ³

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Physical State	Solid
Color	Grey
Form	Powder

Safety Data

Molecular Weight:	58.71 amu	pH:	N/A
BP/BP Range:	2732 °C	MP/MP Range:	1453 °C
Freezing Point:	N/A	Vapor Pressure:	N/A
Vapor Density:	N/A	Saturated Vapor Concentration:	N/A
SG/Density:	8.9 g/cm ³	Bulk Density:	N/A
Odor Threshold:	N/A	Volatile%:	N/A
VOC Content:	N/A	Water Content:	N/A
Solvent Content:	N/A	Evaporation Rate:	N/A
Viscosity:	N/A	Surface Tension:	N/A
Partition Coefficient:	N/A	Decomposition Temperature:	N/A
Flash Point:	N/A	Explosion Limits:	N/A
Flammability:	N/A	Autoignition Temperature:	N/A
Refractive Index:	N/A	Optical Rotation:	N/A
Miscellaneous Data:	N/A	Solubility:	N/A

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Stable
<i>Conditions to Avoid</i>	Moisture
<i>Materials to Avoid</i>	Acids, oxidizing agents, sulfur
<i>Hazardous Decomposition Products</i>	Nickel/nickel oxides
<i>Hazardous Polymerization</i>	Will not occur

11. TOXICOLOGICAL INFORMATION**Route of Exposure**

<i>Skin Contact</i>	May cause skin irritation
<i>Skin Absorption</i>	May be harmful if absorbed through the skin
<i>Eye Contact</i>	May cause eye irritation
<i>Inhalation</i>	Material may be irritating to mucous membranes and upper respiratory tract; may be harmful if inhaled
<i>Ingestion</i>	May be harmful if swallowed

Potential Health Effects

<i>Signs and Symptoms of Exposure</i>	Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals. May include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting.
<i>Target Organs or Systems</i>	Nose, lungs

Toxicity Data

<i>Intraperitoneal</i>	Rat 250 mg/kg LD50
<i>Remarks</i>	Vascular: Regional or general arteriolar or venous dilation. Liver: Other changes. Blood: Other changes.

Chronic Exposure – Carcinogen

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

12. ECOLOGICAL INFORMATION

<i>Toxicity</i>	No data available
<i>Persistence and Degradability</i>	No data available
<i>Bioaccumulative Potential</i>	No data available
<i>Mobility in Soil</i>	No data available
<i>PBT and vPvB Assessment</i>	No data available
<i>Other Adverse Effects</i>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life, with long-lasting effects.

13. DISPOSAL CONSIDERATIONS

<i>Products</i>	Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations.
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14. TRANSPORT INFORMATION**DOT**

<i>Proper Shipping Name</i>	Metal powders, flammable, n.o.s.
<i>UN No.</i>	3089
<i>Class</i>	4.1
<i>Packing Group</i>	II
<i>Hazard Label</i>	Flammable solid
<i>PIH</i>	Not PIH

IATA

<i>Proper Shipping Name</i>	Metal powder, flammable, n.o.s.
<i>UN No.</i>	3089
<i>Hazard Class</i>	4.1
<i>Packing Group</i>	II

15. REGULATORY INFORMATION

EU Additional Classification

Symbol of Danger	F-Xn
Indication of Danger	Highly Flammable. Harmful.
R	10-40-43
Risk Statements	Flammable. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
S	16-36/37
Safety Statements	Keep away from sources of ignition - no smoking. Wear suitable protective clothing and gloves.

US Classification and Label Text

Indication of Danger	Harmful. Flammable (USA) Highly Flammable (EU).
Risk Statements	Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.
Safety Statements	Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.
US Statements	Possible Carcinogen (US). Target organ(s): Lungs, nose. California Prop. 65 carcinogen.

United States Regulatory Information

SARA Listed	Yes
De minimis	0.1%
Notes	This product is subject to SARA section 313 reporting requirements.
TSCA Inventory Item	Yes

California Prop. 65 Components

This product is or contains chemical(s) known to the state of California to cause cancer. This product is or contains chemical(s) known to the state of California to cause cancer.

Canada Regulatory Information

WHMIS Classification	This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.
DSL	Yes
NDSL	No

16. OTHER INFORMATION

<i>Prepared By</i>	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
<i>Issuing Date</i>	September 15, 2014
<i>Revision Date</i>	October 17, 2024
<i>Revision Number</i>	3
<i>Revision Note</i>	Update supplier address

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration

N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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