

**MATERIAL SAFETY DATA SHEET  
FOR  
THORN SMITH LABORATORIES  
ANALYZED QUANTITATIVE UNKNOWNNS**

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Monel Metal for Si, Cu, Ni  
Catalog Number 80-1375

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Manufacturer: Auric Enterprises, Inc.  
d/b/a Thorn Smith Laboratories  
Address: 7755 Narrow Gauge Road  
Beulah, MI 49617  
Phone Number: 231-882-4672  
MSDS Number: TSL-024  
Date Prepared: February 9, 1994  
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**SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION**

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COMPONENTS - Chemical Name & Common Name  
(Hazardous Components 1% or greater; Carcinogens 0.1% or greater)

Nickel

Formula: Ni  
CAS No.: 7440-02-0  
OSHA PEL: 1 mg/m<sup>3</sup>  
ACGIH TLV: 1 mg/m<sup>3</sup>  
OTHER LIMITS: N/A

Copper

Formula: Cu  
CAS No.: 7440-50-8  
OSHA PEL: 1 mg/m<sup>3</sup>  
ACGIH TLV: 1 mg/m<sup>3</sup>  
OTHER LIMITS: N/A

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**SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS**

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Boiling Point: N/A  
Specific Gravity (H<sub>2</sub>O=1): 7.5 gm/m<sup>3</sup>  
Vapor Pressure (mm Hg and Temperature): N/A  
Melting Point: 2795° F  
Vapor Density (Air-1): N/A  
Evaporation Rate ( -1): N/A

Solubility in Water: N/A  
Water Reactive: No  
Appearance and Odor: Light to dark gray color. Fine powder. Odorless.

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### SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

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Flash Point and Method Used: N/A  
Auto-Ignition Temperature: N/A  
Flammability Limits in Air (% by Volume): N/A  
LEL: N/A UEL: N/A  
Extinguisher Media: Dry chemical, sand, graphite to smother fire. Use water only in mist/fog application to avoid spreading powder/accumulated dust in surrounding area.  
Special Fire Fighting Procedures: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode.  
Unusual Fire and Explosion Hazards: Iron is not considered flammable under most conditions. Avoid airborne dispersion of any finely divided powder in an enclosed industrial area to reduce potential for dust ignition.

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### SECTION 4 - REACTIVITY HAZARD DATA

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STABILITY:  Stable  Unstable  
Conditions to Avoid: Generation of airborne dust.  
Incompatibility (Materials to Avoid): Pure oxygen or other strong oxidizers.  
Hazardous Decomposition Products: None  
HAZARDOUS POLYMERIZATION:  May Occur  Will Not Occur

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### SECTION 5 - HEALTH HAZARD DATA

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PRIMARY ROUTES OF ENTRY:  
 Inhalation  Ingestion  Skin Contact  Eye Contact  Not Hazardous  
CARCINOGEN LISTED IN:  
 NTP  OSHA  IARC Monograph  Not Listed

**NOTE: The National Toxicology Program has listed nickel and nickel oxide as possible cancer hazards. The International Agency for Research on Cancer concluded there was sufficient evidence that nickel refining was carcinogenic to humans and limited evidence that nickel and certain nickel compounds were carcinogenic to humans. IARC could not state with certainty which forms of nickel are carcinogens to humans but said, "...metallic nickel seems less likely to be so than nickel subsulphide or nickel oxides." The inhalation of nickel oxide, even at high concentrations, and of nickel powder has not resulted in an increased incidence of malignant tumors in rodents. Studies of workers exposed to nickel powder and to dust and fumes generated in the production of nickel alloys and of stainless steels have not indicated a respiratory cancer hazard.**

**HEALTH HAZARDS - Acute:**

Inhalation: No information found.

Ingestion: Unlikely. Low oral toxicity. No acute or chronic health effects known.

Skin Contact: May cause mild irritation. Wash with soap and water. Seek medical attention if irritation persists.

Eye Contact: Flush thoroughly with water for at least 15 minutes to avoid abrasive damage to outer surfaces of eye. Seek medical attention if irritation persists.

**HEALTH HAZARDS - Chronic:**

Inhalation: Prolonged overexposure to iron dusts may cause siderosis which is a benign pneumoconiosis with few or no symptoms.

Signs and Symptoms of Exposure: No information found.

Medical Conditions Generally Aggravated by Exposure: High Blood Pressure.

**EMERGENCY FIRST AID PROCEDURES -** Seek medical assistance for further treatment, observation, and support if necessary.

**SARA/TITLE III HAZARD CATEGORIES & LISTS**

Acute: No    Chronic: No    Flammability: No    Pressure: No    Reactivity: Yes

Extremely Hazardous Substance: No

CERCLA Hazardous Substance: Yes

SARA 313 Toxic Chemicals: Yes

TSCA Inventory: No

**SECTION 6 - CONTROL AND PROTECTIVE MEASURES**

**Respiratory Protection (Specify Type):**    Use adequate ventilation to maintain airborne particle levels below the recommended exposure limits. Use NIOSH approved respirators in accordance with 29 CFR 1910.134 where levels exceed exposure limits.

**Protective Gloves:** Wear rubber gloves.

**Eye Protection:** Wear chemical safety goggles. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

**VENTILATION TO BE USED:**    A local exhaust system which captures the contaminant at its source is recommended to prevent dispersion of the contaminant in the workroom air.

Local Exhaust             Mechanical (General)             Special

Other (Specify)

**Other Protective Clothing and Equipment:**    Wear clean body-covering clothing.

**Hygienic Work Practices:**    Keep container closed when not in use. Do not store near strong oxidizers. Use good housekeeping practices to prevent accumulation of dust.

**SECTION 7 - PRECAUTIONS FOR SAFE HANDLING & USE/LEAK PROCEDURES**

**Steps to be taken if material is spilled or released:**    Recommend use of a vacuum with a HEPA filter; use dust suppressant when sweeping.

**Waste Disposal Methods:**    Dispose in accordance with all applicable local, state, and federal environmental regulations.

Precautions to be taken in handling and storage: Keep in a tightly closed container, stored in a cool, dry ventilated area. Protect against damage. Do not store near strong oxidizers. Store in accordance with all applicable local, state, and federal environmental regulations.

Other precautions and/or special hazards: No information available.

NFPA Rating: Mixture not rated.

HMIS Rating: No information available.

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## SECTION 8 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

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### Domestic (D.O.T.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)

### International (T.M.O.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)

### AIR (I.C.A.O.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)

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