

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

Steel "G" Stainless for Ni, Cr, Si
Catalog Number 80-1685

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-031
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SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

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

Base Metal:

Iron 60-88%

CAS No.: 7439-89-6
Synonyms: Iron filings, iron shavings, iron powdered, iron reduced.
OSHA PEL: 10
ACGIH TLV: 5 mg/m³ (as Iron Oxide)
OTHER LIMITS: N/A

Alloying Elements:

Chromium 10-30%

CAS No.: 7440-47-3
OSHA PEL: 1
ACGIH TLV: .5 mg/m³
OTHER LIMITS: N/A

Nickel 0-27%

CAS No.: 7440-02-0
OSHA PEL: 1
ACGIH TLV: 1 mg/m³
OTHER LIMITS: N/A

Manganese <6%
Molybdenum <6%
Phosphorus <2%
Titanium <6%

Sulfur <2%
Carbon <2%
Copper <6%

Silicon <2%
Cobalt <2%
Niobium <2%
Tin <2%

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: N/A
Specific Gravity (H₂O=1): Approximately 7.
Vapor Pressure (mm Hg and Temperature): No information found.
Melting Point: >2500° F
Vapor Density (Air-1): N/A
Evaporation Rate (-1): N/A
Solubility in water: N/A
Water Reactive: N/A
Appearance and Odor: Gray-black. Odorless.

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

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: DO NOT USE WATER OR CARBON DIOXIDE. Dry chemical, powdered graphite, dolomite, or sodium chloride.
Special Fire Fighting Procedures: Steel products in a solid state present no fire or explosion hazard.
Unusual Fire and Explosion Hazards: N/A

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: Stable Unstable
Stable in dry air but readily oxidizes in moist air forming rust.
Conditions to Avoid: Stable under ordinary conditions of use and storage.
Incompatibility (Materials to Avoid): Reacts with strong acids to product hydrogen gas.
Hazardous Decomposition Products: Metallic dust or fumes may be produced during welding, burning, grinding, and possibly machining.
HAZARDOUS POLYMERIZATION: May Occur Will Not Occur

SECTION 5 - HEALTH HAZARD DATA

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

HEALTH HAZARDS - Acute:

Inhalation: Short term exposure to fumes/dust may product irritation of respiratory system. Inhalation of high concentrations of freshly formed oxide fumes of iron, manganese and copper may cause metal fume fever characterized by a metallic taste in the mouth, dryness and irritation of the throat and influenza-like symptoms.

Eye Contact: Short term exposure to fumes/dust may produce irritation.

HEALTH HAZARDS - Chronic: Inhalation of high concentrations of iron oxide fumes or dust may lead to benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Chromium and nickel and their compounds are listed in the 3rd Annual Report on Carcinogens, as prepared by the National Toxicology Program (NTP). Exposure to high concentrations of dust or fumes can cause sensitization dermatitis, inflammation and/or ulceration of upper respiratory tract and possibly cancer of nasal passages and lungs.

Recent expidemiological studies of workers melting and working alloys containing nickel/ chromium have found no increased risk of cancer.

Signs and Symptoms of Exposure: No information found.

Medical Conditions Generally Aggravated by Exposure: No information found.

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

Inhalation: If exposed to excessive levels of metal fumes, remove to fresh air, seek medical attention immediately.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

Acute: Yes Chronic: Yes Flammability: No Pressure: No Reactivity: No
Extremely Hazardous Substance: No
CERCLA Hazardous Substance: No
SARA 313 Toxic Chemicals: No
TSCA Inventory: Yes

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (Specify Type): NIOSH/MSHA-Approved dust and fume respirator should be used to avoid excessive inhalation of particulates when exposure exceeds TLV's.

Protective Gloves: Not required.

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

Local Exhaust Mechanical (General) _____ Special
_____ Other (Specify)

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

Hygienic Work Practices: Keep in a tightly closed container. Store away from incompatibilities.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/LEAK PROCEDURES

Steps to be taken if material is spilled or released: N/A

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 away from sources of incompatibilities. Store in accordance with all applicable local, state, and federal environmental regulations.

Other precautions and/or special hazards:

NFPA Rating: Health: **1** Flammability: **0** Reactivity: **0**.

HMIS Rating: No information available.

SECTION 8 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

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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