SAFETY DATA SHEET
FOR
THORN SMITH LABORATORIES

SECTION 1 - IDENTIFICATION

Trade Name:	**Steel "A" & "H"**
Catalog Number:	80-1680 Vials / 80-1681 (100g), 80-1700 (Vials) / 80-1701 (100g)
Product Description:	Analyzed Quantitative Unknowns
Manufacturer:	Auric Enterprises, Inc.
	d/b/a Thorn Smith Laboratories
Address:	7755 Narrow Gauge Road
	Beulah, MI 49617
Phone Number:	231-882-4672
SDS Number:	TSL-027

SECTION 2 – HAZARDS IDENTIFICATION

Classification of Substance or Mixture: Not a hazardous substance or mixture as packaged in 10g student vials or 100g containers.

GHS Label Elements, including precautionary statements: Not a hazardous substance or mixture as packaged in 10g student vials or 100g containers.

Hazards not otherwise classified (HNOC) or not covered by GHS: None

Potential Health Effects:

Eye Contact: Dusts or particulates may cause mechanical irritation including pain, tearing and redness. Scratching of the cornea can occur if eye is rubbed. Fumes may be irritating. Contact with the heated material may cause thermal burns.

Skin Contact: Dusts or particulates may cause mechanical irritation due to abrasion. Coated steel may cause skin irritation in sensitive individuals. Some components in this product are capable of causing allergic reaction, possibly resulting in burning, itching and skin eruptions. Contact with heated material may cause thermal burns.

Inhalation: Dusts may cause irritation of the nose, throat, and lungs. Excessive inhalation of metallic fumes and dusts may result in metal fume fever, an influenza-like illness. It is characterized by a sweet or metallic taste in the mouth, accompanied by dryness and irritation of the throat, cough, shortness of breath, pulmonary edema, general malaise, weakness, fatigue, muscle and joint pains, blurred vision, fever and chills. Typical symptoms last from 12 to 48 hours.

Ingestion: Not expected to be acutely toxic via ingestion based on the physical and chemical properties of the product. Swallowing of excessive amounts of the dust may cause irritation, nausea and diarrhea.

Chronic or Special Toxic Effects:

Repeated exposure to fine dusts may inflame the nasal mucosa and cause changes of the lung. In addition, a red-brown pigmentation of the eye and/or skin may occur. Welding fumes have been associated with adverse health effects. Contains components that may cause cancer or reproductive effects.

Target Organs:
Over exposure to specific components of this product that are generated in dusts or fumes may cause adverse effects to the following organs or systems: eyes, skin, liver, kidney, central nervous system, cardiovascular system, respiratory system.

Medical Conditions Aggravated by Exposure:
Diseases of the skin such as eczema may be aggravated by exposure. Also, disorders of the respiratory system including asthma, bronchitis, and emphysema. Long-term inhalation exposure to agents that cause pneumonconiosis (e.g. dust) may act synergistically with inhalation of oxide fumes or dusts of this product.

SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Steel Composition:	CAS No. 7440-44-0	Carbon	0.01-1.03%
	CAS No. 7439-96-5	Manganese	0.15-0.95%
	CAS No. 7440-21-3	Silicon	0.01-1.00%
	CAS No. 7423-14-0	Phosphorus	0.01-0.02%
	CAS No. 7446-09-05	Sulfur	0.01-0.03%
	CAS No. 7440-02-0	Nickel	0.07-10.30%
	CAS No. 7440-47-3	Chromium	0.03-18.40%
	CAS No. 7439-98-7	Molybdenum	0.01-0.75%

Synonym: Iron filings, iron shavings, iron powdered, iron reduced.

SECTION 4 – FIRST AID MEASURES

Eye Contact: Do not rub eye(s). Flush with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Obtain medical attention if irritation persists. Thermal burns should be treated as medical emergencies.

Skin Contact: In case of overexposure to dusts of fumes, wipe off excess from skin. Immediately wash skin with soap and water for at least 15 minutes. Obtain medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

Inhalation: If a person breathes in large amounts, move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention if symptoms described in this SDS develop.

Ingestion: Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention.

Note to Physician: Inhalation of metal fume or metal oxides may result in an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable leukocytosis. Treatment is symptomatic and condition itself limited to 12 to 48 hours. Chronic exposure to dusts may result in pneumoconiosis of mixed type.

SECTION 5 – FIRE FIGHTING MEASURES

Flammability: Non-Flammable
Flash Points: Not Applicable
Auto-Iginition: Not Applicable
Flammable Limits: Not Applicable
Extinguishing Media: For molten metal, use dry powder or sand. For steel dust use dry sand, water, foam, argon or nitrogen.

Special Fire Fighting Procedures: Do not use water on molten metal. Do not use Carbon Dioxide (CO_2). Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.
Unusual Fire/Explosion Hazards: Steel products do not present fire or explosion hazards under normal conditions.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Utilize recommended protective clothing and equipment. Clean spills in a manner that does not disperse dust into the air. Sweep or vacuum up spillage and collect in a suitable container for disposal.

SECTION 7 – HANDLING AND STORAGE

Storage Temperatures: Stable under normal temperatures and pressures.
Shelf Life: Unlimited in tightly closed container.
Precautions to be taken in handling and storage: Store away from strong oxidizers. Avoid breathing dust/fumes. Store in accordance with all local, state, and federal environmental regulations.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Operations with potential for generating high concentrations of airborne particles or fumes should evaluated and controlled as necessary.
Respiratory Protection (Specify Type): NIOSH?MSHA approved dust/fume/mist respirator should be used to avoid excessive exposure.
Protective Gloves: Wear protective gloves.
Eye Protection: Wear chemical safety glasses.
Skin – Appropriate protective gloves should be worn as necessary. Good personal hygiene practices should be followed including cleansing exposed skin several times daily with soap and water, and laundering or dry cleaning soiled work clothing.
Ventilation To Be Used: Use adequate general or local exhaust ventilation to keep fume or dust levels as low as possible.
__X__ Local Exhaust __X__ Mechanical (General) _____ Special
_____ Other (Specify)
Other Protective Clothing and Equipment: Wear clean body-covering clothing.
Hygienic Work Practices: Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Fine shavings, filings, powder.
Color: Silver gray to gray black with metallic luster.
Odor: Odorless
Boiling Point: 3000°C (5432°F)
Specific Gravity (H_2O=1)**:** 7.88
Melting Point: 1535°C (2795°F)
Solubility in Water: Insoluble, can react with water.
Water Reactive: Yes
Vapor Pressure (mm Hg and Temperature): No information found.
Vapor Density (Air-1): N/A
Evaporation Rate (-1): N/A

SECTION 10 – STABILITY AND REACTIVITY

STABILITY: __X__ Stable _____ Unstable
Conditions to Avoid: Steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fumes.
Incompatibility (Materials to avoid): Reacts with strong acids to form Hydrogen gas. Do not store near strong oxidizers.
Hazardous Decomposition Products: Metallic fumes may be produced during any situation with the potential for thermal decomposition.

HAZARDOUS POLYMERIZATION: _____ May Occur __X__ Will Not Occur

SECTION 11 – TOXICOLOGICAL INFORMATION

Routes of Exposure: Eye Contact. Inhalation.
Toxicity Data: Oral-rat LD50; 30 mg/kg ingested as a tumorigen.
Chronic Toxic Effects: Long term inhalation exposure to iron has resulted in mottling of the lungs, a condition referred to as siderosis. This is considered a benign pneumoconiosis and does not ordinarily cause significant physiological impairment.
Acute Toxic Effects:

Inhalation: Granules or shavings are not expected to have adverse effects. Excessive inhalation of dust may be irritating to the respiratory tract.
Ingestion: Extremely large oral dosages may produce gastrointestinal disturbances.
Skin Contact: No adverse health effects expected.
Eye Contact: No adverse effects expected but dust may cause mechanical irritation. If dust particles remain in eye, it may produce "rust ring" or yellow-brown staining with irritation.

Extremely Hazardous Substance: No
CERCLA Hazardous Substance: No
SARA 313 Toxic Chemicals: No
TSCA Inventory: Yes
IARC: Not Listed
NTP: Not Listed
ACGIH: Not Listed
OSHA: Not Listed

SECTION 12 – ECOLOGICAL INFORMATION

No specific information available for this product.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable local, state and federal environmental regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Domestic (D.O.T.)
Proper Shipping Name: Chemicals, n.o.s.

International (T.M.O.)
Proper Shipping Name: Chemicals, n.o.s.

Air (I.C.A.O.)
Proper Shipping Name: Chemicals, n.o.s.

SECTION 15 – REGULATORY INFORMATION

No specific information available for this product.

SECTION 16 – OTHER INFORMATION

SARA TITLE III HAZARD CATEGORIES AND LISTS

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

Date Prepared: November 18, 1990
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