Iron

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: Iron

Formula: Fe

CAS Number: 7439-89-6

II. HAZARDOUS INGREDIENTS

Hazardous Components: Iron

Percent (%): 0-100

OSHA/PEL: N/E

ACGIH/TLV: N/E

HMIS Ratings (Solid):

Health: 0

Flammability: 0

Reactivity: 0

HMIS Ratings (Powder):

Health: 2

Flammability: 3

Reactivity: 1

III. PHYSICAL DATA

Boiling Point: 2750 ºC

Melting Point: 1535 ºC

Specific Gravity: 7.86 g/cc

Solubility in H_2O: Insoluble

Appearance and Odor: Silver-white solid, grey-black powder, no odor.

IV. FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/A

Flammability: Powder is highly flammable

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

Extinguishing Media: For powder, granule, and very thin foils, do not use water, use special powder for metal fires. For larger solid forms of the metal use extinguishing media appropriate for surrounding fire.

Special Firefighting Procedures: Firefighters must wear full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire & Explosion Hazard: Iron becomes more reactive as it is more finely divided. May have an explosive or violent reaction with ammonium nitrate + heat, ammonium peroxodisulfate, chloric acid, chlorine trifluoride, chloroformadinium nitrate. Reduced iron reacts with water to produce explosive hydrogen gas.

V. HEALTH HAZARD INFORMATION

Effects of Exposure:

Iron compounds have varying toxicity. Some iron compounds are suspected carcinogens. In general, ferrous compounds are more toxic than ferric compounds. Acute exposure to excessive levels of ferrous compounds can cause liver and kidney damage, altered respiratory rates and convulsions. (Sax, Dangerous Properties of

Industrial Materials, eighth edition)

Iron compounds may cause vomiting, diarrhea, pink urine, black stool, and liver damage. Iron compounds may also cause damage to the kidneys. Irritating to the respiratory tract, iron compounds may cause pulmonary fibrosis if dusts are inhaled.

Acute Effects:

Inhalation: Inhalation of dust or powder may cause irritation to the respiratory system and possibly acute iron poisoning. Large amounts of iron may cause iron pneumoconiosis.

Ingestion: No acute health effects recorded.

Skin: May cause irritation.

Eye: May cause irritation.

Chronic Effects:

Inhalation: Inhalation of finely divided powder may cause pulmonary fibrosis. May cause chronic iron poisoning and pathological deposition of iron in the body tissue.

Ingestion: May cause damage to the liver.

Skin: No chronic health effects recorded.

Eye: No chronic health effects recorded._

Target Organs: May affect the liver and kidney.

Medical Conditions Generally Aggravated by Exposure: Pre-existing respiratory disorders._

Carcinogenicity: **NTP**: No **IARC**: No **OSHA**: No

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove victim to fresh air, keep warm and quiet, give oxygen if breathing is difficult, seek medical attention.

INGESTION: Give 1-2 glasses of water or milk and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Flush with water and wash with mild soap and water. Seek medical attention if symptoms persist.

EYE: Flush with water, including under upper and lower eyelid, for at least 15 minutes. Seek medical attention if symptoms persist.

VI. REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Water/moisture

Incompatibility (Material to Avoid): Acids, halogens, oxidizing agents, air, water/moisture.

Hazardous Decomposition Products: Metal oxide fume, hydrogen gas.

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. Provide adequate ventilation. Carefully vacuum up using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust. Keep away from ignition sources.

Waste Disposal Method: Dispose of in accordance with Local, State and Federal Regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection: None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask. When working with finely divided powders, wear a NIOSH-approved dust-mist-vapor respirator.

Ventilation: Use general or local exhaust to maintain concentration at or below the PEL, TLV. When working with finely divided powders, handle under argon in a controlled, enclosed environment.

Protective Gloves: Rubber

Eye Protection: Safety Glasses

Other Protective Clothing or Equipment: Protective gear suitable to prevent contamination.

IX. SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Keep containers tightly closed. Suitable for any general chemical storage area.

Other Precautions: Powders should be handled and stored under a dry, inert gas such as argon. Keep container tightly sealed. Store in a cool, dry place in tightly closed containers. Do not store together with oxidizing and acidic materials. Store away from halogens. Store away from air. Store away from water/moisture. Use non-sparking tools.

Work Practices: Implement engineering and work practice controls to reduce and maintain concentration of exposure. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. 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. (iron)

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only 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

Revised/Verified: January 2009