

# MATERIAL SAFETY DATA SHEET

## **I PRODUCT IDENTIFICATION**

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<b>Trade Name:</b> Iron Phosphide	<b>Chemical Family:</b> Metal phosphide
<b>Synonyms:</b> Iron phosphide, iron monophosphide	<b>CAS #:</b> 26508-33-8
<b>Formula:</b> FeP	<b>Molecular Weight:</b> 86.82

## **II HAZARDOUS INGREDIENTS**

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<u>Hazardous Components:</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>	<u>Other</u>	<u>Percent:</u>
Iron Phosphide	.1 mg P/m <sup>3</sup>	.1 mg P/m <sup>3</sup>	N/E	0.0-100.0

Sec.302: No    Sec.304: No    Sec.313: No

## **III PHYSICAL DATA**

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<b>Boiling Point 760 mm Hg:</b> N/A	<b>Melting Point:</b> N/A
<b>Freezing Point:</b> N/A	<b>Solubility in H<sub>2</sub>O (%):</b> N/E
<b>Appearance and Odor:</b> Powder, no odor	<b>Specific Gravity:</b> 6.07 gm/cc

## **IV FIRE AND EXPLOSION HAZARDS DATA**

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**Flash Point (Method):** N/E or N/A (Non-flammable)                      **Explosive Limits: LEL:** N/A    **UEL:** N/A

**Extinguishing Media:** Use: not applicable. Use suitable extinguishing agent for surrounding materials and type of fire.

**Unusual Fire & Explosion Hazards:** When heated to decomposition, iron phosphide may emit toxic fumes of POx.

## **V HEALTH HAZARD INFORMATION**

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**Routes of Entry:** Inhalation, Skin, Eyes, and Ingestion

**Health Hazards (Acute and Chronic):**

To the best of our knowledge the chemical, physical and toxicological properties of iron phosphide have not been thoroughly investigated and recorded.

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).

**Inhalation: Acute:** 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.

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

**Ingestion: Acute:** No acute health effects recorded.

**Chronic:** May cause damage to the liver.

**Skin: Acute:** May cause irritation.

**Chronic:** No chronic health effects recorded.

**Eyes: Acute:** May cause irritation.

**Chronic:** No chronic health effects recorded.

**Target Organs:** May affect the liver and kidney.

**Carcinogenicity:** NTP? No, IARC? No, OSHA Regulated? No

**Recommended Exposure Limits:** See Section II

**LD50/LC50:** No toxicity data recorded.

#### **Signs and Symptoms of Exposure:**

**Inhalation:** May cause a red, dry throat and coughing. Acute iron poisoning may cause: biphasic shock, rapid increase in respiration and pulse rate, congestion of blood vessels which may lead to hypotension, pallor and drowsiness. Chronic iron poisoning may cause: hemorrhagic necrosis of the gastrointestinal tract, hepatotoxicity, metabolic acidosis, prolonged blood clotting time, elevation of plasma levels of serotonin and histamine. Symptoms of pathological deposition or fibrosis of the pancreas, diabetes, mellitus and liver cirrhosis.

**Ingestion:** No acute or chronic health effects recorded.

**Skin:** May cause redness and itching.

**Eye:** May cause redness, itching and watering.

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

#### **EMERGENCY AND FIRST AID PROCEDURES:**

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

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

**SKIN:** Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water. Seek medical attention if symptoms persist.

**EYES:** Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

#### **VI REACTIVITY DATA**

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**Stability:** Stable

**Conditions to Avoid:** None

**Incompatibilities (Materials to Avoid):** None recorded

**Hazardous Decomposition Products:** Oxides of Phosphorus

**Conditions to Avoid:** None

#### **VII SPILL OR LEAK PROCEDURES**

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**Steps to Be Taken in Case Material Is Released or Spilled:** Wear appropriate respiratory and protective equipment specified in Section VIII. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

**Waste Disposal Method:** Disposal must be made in accordance with Federal, State and Local regulations.

## VIII SPECIAL PROTECTION INFORMATION

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**Respiratory Protection (Specify Type):** NIOSH approved Dust, mist, vapor respirator

**Ventilation: Local Exhaust:** To maintain concentration at or below the PEL, TLV.

**Mechanical:** Recommended.

**Special:** None

**Other:** None

**Protective Gloves:** Rubber Gloves

**Eye Protection:** Safety Goggles

**Other Equipment:** Normal lab wear suitable to prevent contamination.

**Work/Hygienic/Maintenance Practices:** Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. do not blow dust off clothing or skin with compressed air.

## IX SPECIAL PRECAUTIONS

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Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulation and the Toxic Substances Control Act (TSCA), these materials should only be handled by, or under the direct supervision of, a "technically qualified individual", as defined in 40 CFR 710.2(aa).

Issued By: S. Dierks

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