

Iron Oxide MSDS

1. Product Name and Identification

Product Name: [Iron Oxide](#)

Synonyms: Ferric Oxide, Hematite, Ferric Iron, Red Iron Oxide (depending on form)

CAS Number: 1309-37-1

Recommended Uses: Pigments, Coatings, Polishing Compounds, Ceramic Glazes, Construction Materials

Manufacturer/Distributor Details:

- **Name:** [Insert Manufacturer/Distributor Name]
 - **Address:** [Insert Address]
 - **Emergency Contact Number:** [Insert Contact Number]
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2. Composition/Ingredients

Substance/Preparation: Substance

Chemical Name: Iron Oxide

CAS Number: 1309-37-1

Percent Composition: 100%

3. Hazards Identification

Classification of the Substance or Mixture:

- **Eye Irritation:** Category 2B
- **Specific Target Organ Toxicity (Repeated Exposure):** Category 1 (Respiratory system)

Hazard Statements:

- May cause eye irritation.
- Prolonged inhalation of fine dust may damage lung function.

Precautionary Statements:

- Avoid creating dust and breathing it in.
- Use suitable personal protective equipment (PPE).
- Wash thoroughly after handling.

Pictograms:

- [Insert placeholder for health hazard symbol]

Additional Notes: Iron oxide is considered relatively non-toxic under normal conditions of use but requires precautions when in fine powdered form due to inhalation risks.

4. First Aid Measures

General Information: Prompt medical attention is recommended for prolonged or severe exposure symptoms.

Eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing and seek medical advice if irritation persists.

Skin: Wash exposed skin with soap and water. If irritation occurs, seek medical advice.

Inhalation: Move to fresh air immediately. If breathing difficulties persist, seek medical attention.

Ingestion: Rinse mouth with water and drink small amounts of water. Seek medical advice if large quantities are ingested or if symptoms occur.

5. Handling and Storage

Handling:

- Avoid creating and inhaling dust.
- Use in well-ventilated areas.
- Handle using recommended personal protective equipment.

Storage:

- Store in a cool, dry area away from incompatible materials like strong acids.
 - Keep container tightly sealed when not in use to prevent contamination and moisture absorption.
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6. Exposure Controls/Personal Protection

Engineering Controls:

- Provide adequate ventilation or exhaust systems to limit dust accumulation and inhalation risks.

Personal Protection Equipment (PPE):

- **Eye Protection:** Safety goggles in dusty environments.
- **Skin Protection:** Gloves to prevent prolonged or repeated contact.
- **Respiratory Protection:** Dust mask or respirator (NIOSH-approved) when airborne particles may be inhaled.
- **Other:** Wear protective clothing minimizing skin exposure.

Hygiene Measures:

- Wash hands and any exposed areas after handling. Do not eat, drink, or smoke while using.

Recommended Workplace Exposure Limits:

- OSHA PEL (Permissible Exposure Limit): 10 mg/m³ (total dust).
 - ACGIH TLV (Threshold Limit Value): 5 mg/m³ (respirable fraction).
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7. Physical and Chemical Properties

- **Appearance:** Red, brown, or black powder (based on form)
 - **Odor:** Odorless
 - **Melting Point:** 1565°C
 - **Boiling Point:** Not applicable (decomposes upon extreme heating)
 - **Density:** Approximately 5 g/cm³ (varies slightly by type)
 - **Solubility:** Insoluble in water
 - **pH:** Not applicable (solid form)
 - **Flash Point:** Non-flammable
 - **Molecular Formula:** Fe₂O₃ (for ferric oxide)
 - **Vapor Pressure:** Not applicable
 - **Auto-Ignition Temperature:** Non-combustible
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8. Stability and Reactivity

Chemical Stability: Stable under normal conditions of use and storage.

Conditions to Avoid: Prevent contact with strong acids or extreme heat, which might cause decomposition or react to form gaseous by-products.

Materials to Avoid: Strong acids (may produce hydrogen gas), oxidizing agents.

Hazardous Decomposition Products: Combustion or decomposition in reducing environments may produce iron fumes or iron oxides in fine particulate forms.

9. Toxicological Information

Acute Toxicity:

- Generally considered non-toxic for oral, dermal, and inhalation exposures in low concentrations.
- **Oral LD50 (Rat):** >10,000 mg/kg

Skin Irritation: Not classified as a skin irritant.

Eye Irritation: May cause mechanical irritation or redness due to particulate matter.

Respiratory Effects:

- Prolonged inhalation of ferrosferric oxide particles (or certain forms of iron compounds) may cause siderosis (a benign pneumoconiosis).

Chronic Effects:

- Prolonged exposures to fine particle forms may result in chronic respiratory irritation or damage.

Carcinogenicity: No indication of carcinogenicity by IARC or NTP.

Other Information: Non-toxic under normal usage conditions but requires precautionary measures in fine particle form.

10. Disposal Considerations

Waste Disposal Methods:

- Dispose of in accordance with local, state, and federal environmental regulations.
- Avoid release into water systems, soil, or drains.

Packaging Disposal:

- Containers should be emptied, cleaned, and disposed of or recycled according to local regulations.

Environmental Precautions: While iron oxide is not classified as hazardous to the environment, fine particulates should be contained to prevent dispersal into natural water systems where sediment impacts may occur.
