Iron Oxide Fe₂O₃

SAFETY DATA SHEET

1 PRODUCT AND SUPPLIER IDENTIFICATION
Product Name: Iron Oxide Fe₂O₃
Formula: Fe₂O₃
Supplier:ESPI Metals
1050 Benson Way
Ashland, OR 97520
Telephone: 800-638-2581
Fax: 541-488-8313
Email: sales@espimetals.com
Emergency: Infotrac 800-535-5053 (US) or 352-323-3500 (24 hour)
Recommended Uses: Scientific Research

2 HAZARDS IDENTIFICATION
GHS Classification (29 CFR 1910.1200): Not classified as hazardous
GHS Label Elements:
Signal Word: N/A
Hazard Statements: N/A
Precautionary Statements: N/A

3 COMPOSITION/INFORMATION ON INGREDIENTS
Ingredient: Iron (III) Oxide
CAS#: 1309-37-1
%: ≥98
EC#: 215-168-2
Common Names and Synonyms: Red iron oxide, ferric oxide.

4 FIRST AID MEASURES
General Measures: Remove patient from area of exposure.
INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.
INGESTION: Rinse mouth with water. Do not 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 soap and water. Seek medical attention if symptoms persist.
EYES: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.
Most Important Symptoms/Effects, Acute and Delayed: May cause irritation. See section 11 for more information.
Indication of Immediate Medical Attention and Special Treatment: No other relevant information available.

5 FIREFIGHTING MEASURES
Extinguishing Media: Use suitable extinguishing agent for surrounding materials and type of fire.
Unsuitable Extinguishing Media: No information available.
Specific Hazards Arising from the Material: May release iron oxide fumes if involved in a fire.
Special Protective Equipment and Precautions for Firefighters: Wear full face, self-contained breathing apparatus and full protective clothing.

6 ACCIDENTAL RELEASE MEASURES
Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate respiratory and protective equipment specified in section 8. Isolate spill area and provide ventilation. Avoid breathing dust or fume. Avoid contact with skin and eyes. Eliminate all sources of ignition.
Methods and Materials for Containment and Cleaning Up: Avoid raising dust. Scoop or vacuum up using a vacuum system equipped with a HEPA filter. Place in properly labeled closed containers.
Environmental Precautions: Do not allow to enter drains or to be released to the environment.

7 HANDLING AND STORAGE
Precautions for Safe Handling: Handle in an enclosed, controlled process. Avoid contact with skin and eyes. Do not breath dust or fumes. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated. Do not create a dust cloud by using a brush or compressed air. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. See section 8 for information on personal protection equipment.
Conditions for Safe Storage: Store in a cool, dry area. Store material tightly sealed in properly labeled containers. Protect from moisture. Store away from oxidizers or acids. See section 10 for more information on incompatible materials.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION
Exposure Limits: OSHA/PEL: ACGIH/TLV:
Iron (III) Oxide 10 mg/m³ (fume) 5 mg/m³ (respirable)
Engineering Controls: Ensure adequate ventilation to maintain exposures below occupational limits. Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. 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.
Individual Protection Measures, Such as Personal Protective Equipment:
  Respiratory Protection: Use suitable respirator when high concentrations are present.
  Eye Protection: Safety glasses
  Skin Protection: Impermeable gloves, protective work clothing as necessary.

9 PHYSICAL AND CHEMICAL PROPERTIES
Appearance:
Form: Powder
Color: Red brown
Odor: Odorless
Odor Threshold: Not determined
pH: No data
Melting Point: 1565 °C
Boiling Point: No data
Flash Point: N/A
Evaporation Rate: N/A
Flammability: N/A
Upper Flammable Limit: N/A
Lower Flammable Limit: N/A
Vapor Pressure: No data
Vapor Density: N/A
Relative Density (Specific Gravity): 5.24 g/cc
Solubility in H₂O: Insoluble
Partition Coefficient (n-octanol/water): Not determined
Autoignition Temperature: No data
 Decomposition Temperature: No data
Viscosity: N/A

10 STABILITY AND REACTIVITY
Reactivity: No specific test data available.
Chemical Stability: Stable under recommended storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: No data
Incompatible Materials: Acids, oxidizing agents, water/moisture.
Hazardous Decomposition Products: Iron oxide fume.

11 TOXICOLOGICAL INFORMATION
Likely Routes of Exposure: Inhalation, skin and eyes.
Symptoms of Exposure: May cause irritation to lungs, skin and eyes.
Acute and Chronic Effects:
Iron Oxide: Inhalation of nanoparticles: No adverse effects were reported in all of the reviewed clinical studies using iron oxide tracer aerosols. Although most were designed to determine deposition and clearance of particles in the lungs versus toxicological endpoints, the few that did assess biomarkers of exposure did not report acute effects from inhalation. Acute effects are also not associated with workplace exposure to dusts and fumes primarily composed of iron oxide. While increased risk of developing lung disease has been correlated with iron oxide exposure, co-exposure to other known carcinogens present in the dusts and fumes as well as smoking confound the relationship.¹
Iron Compounds/Iron Salts: Irritating to the respiratory tract, iron compounds may cause pulmonary fibrosis if dusts are inhaled. Inhalation of large amounts may cause iron pneumoconiosis. Inhalation of ferric salts as dusts & mists is irritating to the respiratory tract. Ferric salts are regarded as skin irritants.
Acute Toxicity: No data
Carcinogenicity: NTP: Not identified as carcinogenic IARC: Not identified as carcinogenic
To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

12 ECOLOGICAL INFORMATION
Ecotoxicity: No data
Persistence and Degradability: No data
Bioaccumulative Potential: No data
Mobility in Soil: No data
Other Adverse Effects: No further relevant information available.

13 DISPOSAL CONSIDERATIONS
Waste Disposal Method:
Product: Dispose of in accordance with Federal, State and Local regulations.
Packaging: Dispose of in accordance with Federal, State and Local regulations.
14 TRANSPORT INFORMATION
Shipping Regulations: Not regulated
UN Number: N/A
UN Proper Shipping Name: N/A
Transport Hazard Class: N/A
Packing Group: N/A
Marine Pollutant: No

15 REGULATORY INFORMATION
TSCA Listed: Yes
DSL Listed: Yes
Regulation (EC) No 1272/2008 (CLP): N/A
WHMIS 2015 Classification: N/A
HMIS Ratings: Health: 1  Flammability: 0  Physical: 0
NFPA Ratings: Health: 1  Flammability: 0  Instability: 0
Chemical Safety Assessment: A chemical safety assessment has not been carried out.

16 OTHER INFORMATION
1Lewinski, et al. (2013) Human inhalation exposure to iron oxide particles.
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Prepared by: ESPI Metals
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