

Material Safety Data Sheet

Identity: Iron Oxide

Formula: Fe₂O₃

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 159.69

CAS #	OSHA PEL	ACGIH TLV	Other Limits	%
1309-37-1	10 mg(Fe)/m ³	5mg(Fe)/m ³	NE	0.0-100.0%

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N.A.	Vapor Pressure: (vs. Air or mm Hg): NE or NA
Melting Point: 1565.00C (2849.0 F)	Vapor Density: (Air=1): NE or NA Evaporation
Rate (vs Butyl Acetate=1) NE or NA	Percent Volatile: N.A.
Solubility in water: Insoluble	Specific Gravity (water=1): 5.24 gm/cc
Other solubility Notes: Soluble in HCl and H ₂ S ₀₄	
<i>Appearance and odor:</i> Red-Brown to black powder pieces. No odor.	

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Flash Point: N.A.

Method Used: NON-FLAMMABLE

Explosive Limits: LEL: NA

UEL: NA

Extinguishing Media:

USE: Not applicable. Use suitable extinguishing media for surround materials and type of fire.

Special Fire Fighting 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 and Explosion Hazards:

May have a violent reaction when heated with powdered aluminum, calcium disilicide, magnesium, metalacetylide, cesium actelyde rubidium and possibly have an explosive reaction when heated with guanidinium perchlorate.

Iron oxide has the potential to react violently with hydrogen peroxide. Reaction with carbon monoxide may form an explosive product.

The wet oxide may react explosively with molten aluminum-magnesium alloys.

May catalyze the potentially explosive polymerization of ethylene oxide.

SECTION V - REACTIVITY DATA

Stability: Stable

Conditions to Avoid (stability) : None

Incompatibility-Materials to Avoid: Hydrogen peroxide, magnesium, metal acetylides, aluminum, calcium disilicide, carbon monoxide, ethylene oxide, guanidinium perchlorate and aluminum-magnesium alloys.

Hazardous Decomposition or Byproducts: No data

Hazardous Polymerization: Will occur

Conditions to avoid (hazardous polymerization): None

SECTION VI - HEALTH HAZARD DATA

Health Hazards (Acute and Chronic):

Iron oxide is a poison by subcutaneous route. Questionable carcinogen with experimental tumorigenic data. (Sax, Dangerous Properties of Industrial Materials, Ninth edition).

Iron compounds have toxicity. Exposure to iron oxides is potentially a serious risk in all industrial settings. Some iron compounds are suspected carcinogens. In general, ferrous compounds are more toxic than ferric compounds. (Sax, Dangerous Properties of Industrial Materials, ninth edition).

Inhalation:

Acute: . May cause irritation of the upper respiratory tract and possibly acute iron poisoning.

Chronic: May cause chronic iron poisoning.

Ingestion:

Acute: No acute health effects recorded.

Chronic: No chronic health effects recorded.

Skin:

Acute: No acute health effects recorded.

Chronic: Repeated or prolonged contact may cause irritation.

Eye:

Acute: . May cause irritation.

Chronic: . No chronic health effect recorded.

Target Organs : May effect the blood.

Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No

Recommended Exposure Limits: See section II

LD 50/LC 50: See "Carcinogenicity/Other Information"

Signs and symptoms of Exposure:

INHALATION:

May cause a red, dry throat. Acute iron poisoning may cause biphasic shock, a 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.

INGESTION: No acute or chronic health effects recorded.

SKIN: May cause redness, itching and burning.

EYE: May cause redness, itching, burning 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, and 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 if symptoms persist. 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, and seek medical attention if symptoms persist.

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention immediately.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII-Control Measures. Isolate spill area, 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:

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

Hazard Label Information:

Store in cool, dry area. Store in tightly sealed container. Wash thoroughly after handling.

Precautions To Be Taken in Handling:

None

Other Precautions:

None

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

Respiratory Equipment (Specify Type)

NIOSH/MSHA approved respirator.

Eye Protection:

Safety Glasses.

Protective Gloves:

Impervious Gloves.

Other Protective Clothing:

Protection gear suitable to prevent contamination.

Ventilation:

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

Special: None

Mechanical (General): Good general ventilation is recommended.

Other: None

IX – Additional Comments

Additional Information About This Product:

Control of Substances Hazardous to Health Regulations

EH40 Occupational Exposure Limits

Maximum Exposure Limit: NE Occupational

Exposure Standard: 5 mg/n3

10 mg/m3 Short-term Exposure Limit

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 or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established