



Safety Data Sheet

According to 29 CFR 1910.1200 (OSHA HCS)

SDS No. 275

Review date: July 11, 2019

1 Identification of substance and company

Product details

Product name: *Iron (II,III) Oxide*
Product code: 15969
Relevant identified uses of the substance: Research and product development
Manufacturer/Supplier: Noah Technologies Corporation
1 Noah Park
San Antonio, Texas 78249-3419
Phone: 210-691-2000
Fax: 210-691-2600
Web site: www.noahtech.com

Emergency information: CHEMTREC
800-424-9300

2 Hazards identification

Hazard designation: None
Information pertaining to particular dangers for man and environment: Not applicable
HMIS ratings (scale 0-4): Health: 1
Flammability: 0
Physical hazard: 0

3 Composition/Information on ingredients

Chemical name: Iron (II,III) oxide
Designation: (CAS#): 1317-61-9
EC Number: 215-277-5
Formula: Fe₃O₄
Synonyms: Ferrosoferric oxide, black iron oxide, magnetite
Ingredients of known acute toxicity: None

4 First aid measures

After inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration.
After skin contact: Instantly wash with water and soap and rinse thoroughly
If irritation persists, consult a physician
After eye contact: Rinse opened eye for at least 15 minutes under running water. Assure adequate flushing by separating the eyelids with fingers. If irritation persists, seek medical attention.
After ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water
Information for doctor: Show this safety data sheet to the doctor in attendance
Immediate medical attention and special treatment needed: None

5 Fire-fighting measures

Suitable extinguishing agents: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Special hazards caused by the material, its products of combustion or resulting gases: Oxides of iron
Special fire fighting procedures: Wear self-contained breathing apparatus
Wear fully protective fire fighting equipment/clothing in fire situations
Unusual fire and explosion hazard: Heating in air may cause the black iron oxide to oxidize, generating heat which could cause surrounding combustion.

6 Accidental release measures

Person-related safety precautions: Avoid dust formation. Avoid breathing vapors, mist or gas.
Measures for environmental protection: Do not let product enter drains.
Measures for cleaning/collecting: Sweep up and shove. Keep in suitable, closed containers for proper disposal.

Additional information: See Section 7 for information on safe handling
See Section 8 for information on personal protective equipment
See Section 13 for information on disposal

7 Handling and storage

Information for safe handling: Keep containers tightly sealed
Store in cool, dry place in tightly closed containers
Ensure good ventilation/exhaustion at the workplace

Information about protection against explosions and fires: This product is not flammable

Storage requirements to be met by storerooms and containers: No special requirements

Incompatibility (avoid contact with): Strong acids. Strong oxidizers. Peroxides and chloroformates. Mixtures with aluminum + calcium silicide + sodium nitrate may explode if ignited. Mixtures with aluminum + sulfur react violently if heated. Ignites on contact with hydrogen trisulfide.

Further information about storage conditions: None

8 Exposure controls/personal protection

Ventilation requirements: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute

Components with critical values that require monitoring at the workplace: ACGIH TLV: TWA 5 mg (Fe)/m³ (vapor, dust)]

Additional information: None

Personal protective equipment:

General protective and hygienic measures: The usual precautionary measures should be adhered to in handling the chemicals
Keep away from foodstuffs, beverages and food
Instantly remove any soiled and impregnated garments
Wash hands during breaks and at the end of the work
Avoid contact with the eyes and skin

Personal protective equipment:

Respiratory protection: Filter, dust, fume, mist
(Use only NIOSH or CEN approved Equipment) Use only NIOSH/MESA or CEN approved dust mask type N95 or TYPE P1 (EN 143)

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact.

Eye protection: Safety glasses

Skin protection: Protective work clothing

Additional protective equipment: Sufficient to prevent contact
Emergency eyewash and safety shower

Precautionary labeling: Wash thoroughly after handling
Do not get in eyes, on skin or on clothing
Do not breathe dust, vapor, mist, gas
Store in tightly closed containers
Store in a cool, dry place

9 Physical and chemical properties

General Information:

Physical state: Powder, granules or pieces

Color: Black

Odor: Odorless

Odor threshold: No data available

Molecular Weight (Calculated): 231.54

pH (5% solution) No data available

Melting point/freezing point/range: 1538 C (decomposes)

Boiling point/range: No data available

Sublimation temperature/start: No data available

Decomposition temperature: No data available

Flammability (solid, gas):

Flash point: Non-flammable

Autoignition temperature: No data available

Danger of explosion: No data available

Flammable limits:

Lower: No data available

Upper: No data available

Evaporation rate: No data available

Vapor pressure (mm Hg): No data available

Vapor density: No data available

Specific gravity: 4.8 - 5.1 g/cm³ @ 25 C

Bulk density: No data available

Solubility in/Miscibility with water:	Insoluble
Partition coefficient n-octanol/water:	No data available
Viscosity:	No data available
Other information:	No additional information

10 Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Heating in air may cause the black iron oxide to oxidize, generating heat which could cause surrounding combustion.
Conditions to be avoided:	Heat. Contact with incompatibles. See section 7 for information on proper handling and storage
Materials to be avoided:	Strong acids and oxidizers. Peroxides and chloroformates. Mixtures with aluminum + calcium silicide + sodium nitrate may explode if ignited. Mixtures with aluminum + sulfur react violently if heated. Ignites on contact with hydrogen trisulfide.
Dangerous reactions:	No data available
Hazardous decomposition products: (thermal and other)	Oxides of iron

11 Toxicological information

Acute toxicity:	
LD/LC50 values that are relevant for classification:	oral-rat LD ₅₀ : > 5000 g/kg
Primary irritant or corrosive effect:	
on the skin:	Mild
on the eye:	Mild
Sensitization:	No sensitizing effect known
Potential health effects:	No data available
Inhalation:	Material may be irritating to mucous membranes and upper respiratory tract. The inhalation of large amounts of iron dust results in iron pneumoconiosis (arc welders lung).
Ingestion:	No data available
Skin:	Mild irritation
Eyes:	Mild irritation
Signs and symptoms of exposure:	Iron compounds are of varying toxicity. Exposure to iron oxides is potentially serious risk in all industrial settings. Some iron compounds are suspected carcinogens. In general, ferrous 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. Prolonged inhalation of iron oxide dust is known to product a condition as siderosis. On X-rays it appears to be a benign pneumoconiosis and is not associated with pulmonary fibrosis or disability unless there is concurrent exposure to other fibrosis-producing materials such as silica. The TLV is set to protect against siderosis.
Carcinogenicity:	No classification data on carcinogenic properties of this material is available from the IARC, NTP, ACGIH or OSHA
Additional information:	To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

12 Ecological information

Toxicity:	
Toxicity to fish:	No data available
Toxicity to daphnia and other aquatic invertebrates:	No data available
Toxicity to algae:	No data available
Biodegradability:	No data available
Bioaccumulation:	No data available
Mobility in soil:	No data available
Other adverse effects:	No data available

13 Disposal considerations

Recommendation:	Consult state, local or national regulation for proper disposal Allow professional disposal company to handle waste Must be specially treated under adherence to official regulations
Unclean packaging recommendation:	Disposal must be made according to official regulations

14 Transport information

Land transport DOT

Proper shipping name:	Chemicals Non-Hazardous
Technical name:	Iron (II,III) oxide

Air transport ICAO-TI and IATA-DGR:

Proper shipping name: Chemicals Non-Hazardous
Technical name: Iron (II,III) oxide

UPS Ground / FedEx Ground

Proper shipping name: Chemicals Non-Hazardous
Technical name: Iron (II,III) oxide

UPS Air

Proper shipping name: Chemicals Non-Hazardous
Technical name: Iron (II,III) oxide

15 Regulatory information

SARA Section 302 Extremely Hazardous components and corresponding TPQs: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA Section 311 / 312 hazards: No SARA hazards
SARA Section 313 components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313
California Proposition 65 components: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.
TSCA: This product is listed in the TSCA inventory

16 Other information

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulation are subject to change and the conditions of handling and use, or misuse are beyond our control. NOAH MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.