1 Identification

Product identifier

Product name: Iron(II,III) oxide

Stock number: 12374

CAS Number: 1317-61-9

EC number: 215-277-5

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-9660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

Hazards not otherwise classified

No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

GHS07

Signal word Warning

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P280 Wear protective gloves / eye protection / face protection.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

Health (acute effects) = 1
Flammability = 0
Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:
1317-61-9 Iron(II,III) oxide

Concentration: ≥100%

Identification number(s):
EC number: 215-277-5

4 First-aid measures

Description of first aid measures

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

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44.0

After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact
Rinse opened eye for several minutes under running water.
Then consult a doctor.

After swallowing
Seek medical treatment.

Most important symptoms and effects, both acute and delayed
Causes skin irritation.
Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures
Extinguishing media
Suitable extinguishing agents
Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Iron oxides

Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures
Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

Environmental precautions:
Do not allow product to reach sewage system or any water course.

Methods and material for containment and cleaning up:
Ensure adequate ventilation.

Prevention of secondary hazards:
No special measures required.

Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Protective Action Criteria for Chemicals

PAC-1: 21 mg/m³
PAC-2: 230 mg/m³
PAC-3: 1,400 mg/m³

7 Handling and storage
Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

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

Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles:
No special requirements.

Information about storage in one common storage facility:
Store away from oxidizing agents.

Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

Specific end use(s)
No further relevant information available.

8 Exposure controls/personal protection
Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information:
No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment:
Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:
Use a respirator with type N95 (USA) or P2 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:
Impervious gloves:
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:
Safety glasses with side shields / NIOSH (US) or EN 166 (EU)

Body protection:
Protective work clothing.

9 Physical and chemical properties
Information on basic physical and chemical properties
General information
Appearance:
Form: Powder
Odor: Odorless
### 4. Odor threshold

**Odor threshold:** Not determined.

### 5. pH-value

**pH-value:** Not applicable.

### 6. Change in condition

**Change in condition:**
- **Melting point/Melting range:** 1538 °C (2800 °F)
- **Boiling point/Boiling range:** Not determined
- **Sublimation temperature / start:** Not determined
- **Flammability (solid, gaseous):** Not determined
- **Ignition temperature:** Not determined
- **Decomposition temperature:** Not determined
- **Auto igniting:** Not determined

### 7. Danger of explosion

**Danger of explosion:** Not determined.

**Explosion limits:**
- **Lower:** Not determined
- **Upper:** Not determined

**Vapor pressure:**
- **Dynamic:** Not applicable
- **Kinematic:** Not applicable

**Density at 20 °C (68 °F):**
5.2 g/cm³ (43.394 lbs/gal)

**Relative density:** Not determined.

**Vapor density:** Not applicable.

**Evaporation rate:**
- **Dynamic:** Not applicable
- **Kinematic:** Not applicable

### 8. Flammability (solid, gaseous)

**Flammability (solid, gaseous):** Not determined.

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

### 9. Auto igniting

**Auto igniting:** Not determined

**Danger of explosion:** Not determined.

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

**Auto igniting:** Not determined

### 11. Toxicological information

**Acute toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** Causes skin irritation.

**Eye irritation or corrosion:** Causes serious eye irritation.

**Sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:** No effects known.

**Carcinogenicity:** No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** May cause respiratory irritation.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:** No effects known.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

### 12. Ecological information

**Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.

**Additional ecological information:**
- **General notes:** Avoid transfer into the environment.
- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.

**Other adverse effects:**
- No further relevant information available.

### 13. Disposal considerations

**Waste treatment methods**
- **Recommendation:** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14. Transport information

**UN-Number**
- **DOT, ADR, IMDG, IATA:** Not applicable

**UN proper shipping name**
- **DOT, ADR, IMDG, IATA:** Not applicable

**Transport hazard class(es)***
- **DOT, ADR, IMDG, IATA:** Not applicable

**Class**
- Not applicable
15 Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

**GHS label elements**
The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS).

**Hazard pictograms**

- GHS07

### Signal word

**Warning**

### Hazard statements

- **H315**: Causes skin irritation.
- **H319**: Causes serious eye irritation.
- **H335**: May cause respiratory irritation.

### Precautionary statements

- **P261**: Avoid breathing dust/fume/gas/mist/vapors/spray
- **P338**: Wear protective gloves / eye protection / face protection.
- **P305+P351+P338**: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P304+P340**: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- **P405**: Store locked up.
- **P501**: Dispose of contents/container in accordance with local/regional/national/international regulations.

### National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)**

- Substance is not listed.

**California Proposition 65**

- **Prop 65 - Chemicals known to cause cancer**: Substance is not listed.
- **Prop 65 - Developmental toxicity**: Substance is not listed.
- **Prop 65 - Developmental toxicity, female**: Substance is not listed.
- **Prop 65 - Developmental toxicity, male**: Substance is not listed.

**Information about limitation of use:**

For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

- **SVHC**: Substance is not listed.
- **Chemical safety assessment**: A Chemical Safety Assessment has not been carried out.

### Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS**: Global Marketing Department

**Date of preparation/Revision**: Print date, revision date and version number are in the header of each page.

**Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- AITF: International Air Transport Association
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- HMIS: Hazardous Materials Identification System (USA)
- WHMIS: Workplace Hazardous Materials Information System (Canada)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- SVHC: Substances of Very High Concern
- vPvB: very Persistent and very Bioaccumulative
- ACGIH: American Conference of Governmental Industrial Hygienists (USA)
- OSHA: Occupational Safety and Health Administration (USA)
- NTP: National Toxicology Program (USA)
- IARC: International Agency for Research on Cancer
- IARC: International Agency for Research (USA)
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

USA