

## SAFETY DATA SHEET

Creation Date 12-Apr-2010

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Revision Number 4

### 1. Identification

**Product Name** Iron(III) oxide

**Cat No. :** 12375

**CAS No** 1309-37-1  
**Synonyms** Ferric oxide

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

#### Details of the supplier of the safety data sheet

##### Company

Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757

##### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### **Classification**

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

#### **Label Elements**

None required

#### **Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

| Component  | CAS No    | Weight % |
|------------|-----------|----------|
| Iron oxide | 1309-37-1 | <=100    |

#### 4. First-aid measures

|                                            |                                                                                                                                                                    |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.                                                    |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.                                            |
| <b>Inhalation</b>                          | Remove from exposure, lie down. Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention. |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Get medical attention.                                                                                                                     |
| <b>Most important symptoms and effects</b> | No information available.                                                                                                                                          |
| <b>Notes to Physician</b>                  | Treat symptomatically                                                                                                                                              |

#### 5. Fire-fighting measures

|                                         |                                                                                       |
|-----------------------------------------|---------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>     | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. |
| <b>Unsuitable Extinguishing Media</b>   | No information available                                                              |
| <b>Flash Point</b>                      | No information available                                                              |
| <b>Method -</b>                         | No information available                                                              |
| <b>Autoignition Temperature</b>         | No information available                                                              |
| <b>Explosion Limits</b>                 |                                                                                       |
| <b>Upper</b>                            | No data available                                                                     |
| <b>Lower</b>                            | No data available                                                                     |
| <b>Sensitivity to Mechanical Impact</b> | No information available                                                              |
| <b>Sensitivity to Static Discharge</b>  | No information available                                                              |

#### Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

#### Hazardous Combustion Products

None.

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### NFPA

Health  
0

Flammability  
0

Instability  
0

Physical hazards  
N/A

#### 6. Accidental release measures

|                                             |                                                                                                                                               |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>                 | Avoid dust formation. Use personal protective equipment as required. Ensure adequate ventilation.                                             |
| <b>Environmental Precautions</b>            | See Section 12 for additional Ecological Information.                                                                                         |
| <b>Methods for Containment and Clean Up</b> | Avoid dust formation. Wear self-contained breathing apparatus and protective suit. Sweep up and shovel into suitable containers for disposal. |

## 7. Handling and storage

**Handling** Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or mists. Do not ingest. If swallowed then seek immediate medical assistance. Use only in well-ventilated areas. Minimize dust generation and accumulation. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

**Storage.** Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Incompatible Materials. Strong oxidizing agents.

## 8. Exposure controls / personal protection

### Exposure Guidelines

| Component  | ACGIH TLV                | OSHA PEL                                                                                                                                                        | NIOSH                                                    | Mexico OEL (TWA)         |
|------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------|
| Iron oxide | TWA: 5 mg/m <sup>3</sup> | (Vacated) TWA: 10 mg/m <sup>3</sup><br>(Vacated) TWA: 5 mg/m <sup>3</sup><br>TWA: 10 mg/m <sup>3</sup><br>TWA: 15 mg/m <sup>3</sup><br>TWA: 5 mg/m <sup>3</sup> | IDLH: 2500 mg/m <sup>3</sup><br>TWA: 5 mg/m <sup>3</sup> | TWA: 5 mg/m <sup>3</sup> |

### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures** Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

|                                 |                                                                                                                                                                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye/face Protection</b>      | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.                                                                       |
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure.                                                                                                                                                                         |
| <b>Respiratory Protection</b>   | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| <b>Recommended Filter type:</b> | Particle filter.                                                                                                                                                                                                                                  |
| <b>Hygiene Measures</b>         | Handle in accordance with good industrial hygiene and safety practice.                                                                                                                                                                            |

## 9. Physical and chemical properties

|                                         |                          |
|-----------------------------------------|--------------------------|
| <b>Physical State</b>                   | Powder Solid             |
| <b>Appearance</b>                       | Red                      |
| <b>Odor</b>                             | Odorless                 |
| <b>Odor Threshold</b>                   | No information available |
| <b>pH</b>                               | No information available |
| <b>Melting Point/Range</b>              | 1538 °C / 2800.4 °F      |
| <b>Boiling Point/Range</b>              | No information available |
| <b>Flash Point</b>                      | No information available |
| <b>Evaporation Rate</b>                 | Not applicable           |
| <b>Flammability (solid,gas)</b>         | No information available |
| <b>Flammability or explosive limits</b> |                          |
| <b>Upper</b>                            | No data available        |
| <b>Lower</b>                            | No data available        |

|                                        |                                |
|----------------------------------------|--------------------------------|
| Vapor Pressure                         | No information available       |
| Vapor Density                          | Not applicable                 |
| Specific Gravity                       | 5.240                          |
| Solubility                             | insoluble                      |
| Partition coefficient; n-octanol/water | No data available              |
| Autoignition Temperature               | No information available       |
| Decomposition Temperature              | No information available       |
| Viscosity                              | Not applicable                 |
| Molecular Formula                      | Fe <sub>2</sub> O <sub>3</sub> |
| Molecular Weight                       | 159.69                         |

## 10. Stability and reactivity

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Reactive Hazard                  | None known, based on information available   |
| Stability                        | Stable under recommended storage conditions. |
| Conditions to Avoid              | Avoid dust formation. Incompatible products. |
| Incompatible Materials           | Strong oxidizing agents                      |
| Hazardous Decomposition Products | None                                         |
| Hazardous Polymerization         | No information available.                    |
| Hazardous Reactions              | None under normal processing.                |

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

| Component  | LD50 Oral           | LD50 Dermal | LC50 Inhalation |
|------------|---------------------|-------------|-----------------|
| Iron oxide | > 10000 mg/kg (Rat) | Not listed  | Not listed      |

Toxicologically Synergistic Products No information available

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|                 |                                                                                          |
|-----------------|------------------------------------------------------------------------------------------|
| Irritation      | No information available                                                                 |
| Sensitization   | No information available                                                                 |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component  | CAS No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|------------|-----------|------------|------------|------------|------------|------------|
| Iron oxide | 1309-37-1 | Not listed | Not listed | Not listed | Not listed | Not listed |

|                                    |                           |
|------------------------------------|---------------------------|
| Mutagenic Effects                  | No information available  |
| Reproductive Effects               | No information available. |
| Developmental Effects              | No information available. |
| Teratogenicity                     | No information available. |
| STOT - single exposure             | None known                |
| STOT - repeated exposure           | None known                |
| Aspiration hazard                  | No information available  |
| Symptoms / effects, both acute and | No information available  |

delayed

**Endocrine Disruptor Information** No information available**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

Do not empty into drains.

| Component  | Freshwater Algae | Freshwater Fish                       | Microtox   | Water Flea         |
|------------|------------------|---------------------------------------|------------|--------------------|
| Iron oxide | Not listed       | LC0 > 50000 mg/l/96h<br>(Danio rerio) | Not listed | EC50 >100 mg/l/48h |

**Persistence and Degradability** Insoluble in water**Bioaccumulation/ Accumulation** No information available.**Mobility** Is not likely mobile in the environment due its low water solubility.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT** Not regulated**TDG** Not regulated**IATA** Not regulated**IMDG/IMO** Not regulated

## 15. Regulatory information

**United States of America Inventory**

| Component  | CAS No    | TSCA | TSCA Inventory notification -<br>Active-Inactive | TSCA - EPA Regulatory<br>Flags |
|------------|-----------|------|--------------------------------------------------|--------------------------------|
| Iron oxide | 1309-37-1 | X    | ACTIVE                                           | -                              |

**Legend:****TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

**International Inventories**

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component  | CAS No    | DSL | NDL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|------------|-----------|-----|-----|-----------|-------|------|------|------|-------|----------|
| Iron oxide | 1309-37-1 | X   | -   | 215-168-2 | X     | X    | X    | X    | X     | KE-10897 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component  | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|------------|---------------|------------|--------------|----------|--------------|
| Iron oxide | X             | X          | X            | -        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH**

| Component  | CAS No    | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|------------|-----------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Iron oxide | 1309-37-1 | -                                                                   | Use restricted. See item 75.<br>(see link for restriction details)            | -                                                                                                     |

**REACH links**

<https://echa.europa.eu/substances-restricted-under-reach>

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

| Component  | CAS No    | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|------------|-----------|----------|------------------------------|---------------------------|--------------------------------------------|
| Iron oxide | 1309-37-1 | Listed   | Not applicable               | Not applicable            | Not applicable                             |

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

#### Other International Regulations

| Component  | CAS No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|------------|-----------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| Iron oxide | 1309-37-1 | Not applicable                                                                            | Not applicable                                                                           | Not applicable             | Not applicable                     |

## 16. Other information

#### Prepared By

Health, Safety and Environmental Department  
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www.thermofisher.com

#### Creation Date

12-Apr-2010

#### Revision Date

29-Mar-2024

#### Print Date

29-Mar-2024

#### Revision Summary

New emergency telephone response service provider.

#### Disclaimer

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**End of SDS**