

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**Product Identifier**

Perihalan Produk: **Iron single crystal**  
Product Description: **Iron single crystal**  
Cat No. : 40612  
Synonyms Iron Metal  
CAS No 7439-89-6  
Molecular Formula Fe

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

Recommended Use Laboratory chemicals.  
Uses advised against No Information available

**Company** Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd  
Hap Seng Business Park, Lot 01-03, 01-04 Aras 1 Unity Square,  
No 12, Persiaran Perusahaan, Seksyen 23, 40300 Shah Alam,  
Selangor Darul Ehsan, Malaysia.  
Main line: +60 3-5525 7888

**Supplier**

**E-mail address** Enquiry.my@thermofisher.com

**Emergency Telephone Number** Tel: +03-5525 7888  
CHEMTREC Malaysia **1-800-815-308** (Malay)  
CHEMTREC Malaysia (Kuala Lumpur) **+(60)-327884561** (Malay)

**SECTION 2: HAZARDS IDENTIFICATION**

**Classification of the substance or mixture**

**Label Elements**

**Hazard Statements**

**Other Hazards**

May form combustible dust concentrations in air  
  
Powdered material may form explosive dust-air mixtures  
May form explosive dust-air mixture if dispersed  
This product does not contain any known or suspected endocrine disruptors

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS No    | Weight % |
|-----------|-----------|----------|
| Iron      | 7439-89-6 | >95      |

## SECTION 4: FIRST AID MEASURES

### Description of first aid measures

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

**Ingestion** Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Inhalation** Remove to fresh air. Get medical attention immediately if symptoms occur.

**Self-Protection of the First Aider** No special precautions required.

### Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

### Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### Extinguishing media

#### **Suitable Extinguishing Media**

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

#### **Extinguishing media which must not be used for safety reasons**

Water. Foam. Carbon dioxide (CO<sub>2</sub>).

### Special hazards arising from the substance or mixture

Combustible material. Fine dust dispersed in air may ignite.

### **Hazardous Combustion Products**

None under normal use conditions.

### Advice for fire-fighters

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

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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## Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

## Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

## Methods and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

### Exposure Controls

#### **Engineering Measures**

None under normal use conditions.

### Personal protective equipment

#### **Eye Protection**

Wear safety glasses with side shields (or goggles)

#### **Hand Protection**

Protective gloves

#### **Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

#### **Respiratory Protection**

No protective equipment is needed under normal use conditions

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Recommended Filter type: Particle filter

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls Prevent product from entering drains

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                              |                          |  |
|------------------------------|--------------------------|--|
| Appearance                   | Dark grey                |  |
| Physical State               | Solid                    |  |
| Odor                         | Odorless                 |  |
| Odor Threshold               | No data available        |  |
| pH                           | No data available        |  |
| Melting Point/Range          | 1535 °C / 2795 °F        |  |
| Softening Point              | No data available        |  |
| Boiling Point/Range          | 2750 °C / 4982 °F        | @ 760 mmHg                               |
| Flash Point                  | Not applicable           | <b>Method -</b> No information available |
| Evaporation Rate             | Not applicable           | Solid                                    |
| Flammability (solid,gas)     | No information available |  |
| Explosion Limits             | No data available        |  |
| Vapor Pressure               | 1 mmHg @ 1787 °C         |  |
| Vapor Density                | Not applicable           | Solid                                    |
| Specific Gravity / Density   | 7.86 @ 20°C              |  |
| Bulk Density                 | No data available        |  |
| Water Solubility             | 0.015 mg/l @22 °C        | practically insoluble                    |
| Solubility in other solvents | No information available |  |

### Partition Coefficient (n-octanol/water)

|                           |                          |       |
|---------------------------|--------------------------|-------|
| Autoignition Temperature  | No data available        |       |
| Decomposition Temperature | No data available        |       |
| Viscosity                 | Not applicable           | Solid |
| Explosive Properties      | No information available |       |
| Oxidizing Properties      | No information available |       |

|                   |       |
|-------------------|-------|
| Molecular Formula | Fe    |
| Molecular Weight  | 55.84 |

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

None known, based on information available.

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## Chemical Stability

Stable under normal conditions. Moisture sensitive.

## Possibility of Hazardous Reactions

### **Hazardous Polymerization Hazardous Reactions**

Hazardous polymerization does not occur.  
None under normal processing.

## Conditions to Avoid

Avoid dust formation. Incompatible products. Exposure to moisture.

## Incompatible Materials

Strong acids. Strong oxidizing agents.

## Hazardous Decomposition Products

None under normal use conditions.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### **Product Information**

##### **(a) acute toxicity;**

**Oral**

Based on available data, the classification criteria are not met

**Dermal**

Based on available data, the classification criteria are not met

**Inhalation**

Based on available data, the classification criteria are not met

| Component | LD50 Oral          | LD50 Dermal | LC50 Inhalation |
|-----------|--------------------|-------------|-----------------|
| Iron      | 7500 mg/kg ( Rat ) | -           | -               |

##### **(b) skin corrosion/irritation;**

Based on available data, the classification criteria are not met

##### **(c) serious eye damage/irritation;**

Based on available data, the classification criteria are not met

##### **(d) respiratory or skin sensitization;**

**Respiratory**

Based on available data, the classification criteria are not met

**Skin**

Based on available data, the classification criteria are not met

##### **(e) germ cell mutagenicity;**

Based on available data, the classification criteria are not met

##### **(f) carcinogenicity;**

Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

##### **(g) reproductive toxicity;**

Based on available data, the classification criteria are not met

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(h) STOT-single exposure; Based on available data, the classification criteria are not met

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs None known.

(j) aspiration hazard; Not applicable  
Solid

Symptoms / effects, both acute and delayed No information available.

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

### Persistence and degradability

Persistence Insoluble in water.  
Degradability Not relevant for inorganic substances.  
Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative potential May have some potential to bioaccumulate

Mobility in soil The product is insoluble and sinks in water. Spillage unlikely to penetrate soil. Is not likely mobile in the environment due its low water solubility.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

Other adverse effects No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

### Waste treatment methods

Waste from Residues/Unused Products Dispose of in accordance with local regulations

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal

Other Information Do not flush to sewer

## SECTION 14: TRANSPORT INFORMATION

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|                                     |                                 |
|-------------------------------------|---------------------------------|
| <b>IMDG/IMO</b>                     | Not regulated                   |
| <b>Road and Rail Transport</b>      | Not regulated                   |
| <b>IATA</b>                         | Not regulated                   |
| <b>Special Precautions for User</b> | No special precautions required |

## SECTION 15: REGULATORY INFORMATION

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

**International Inventories** X = listed

| Component | EINECS    | TSCA | DSL | PICCS | ENCS | ISHL | IECSC | AICS | KECL     |
|-----------|-----------|------|-----|-------|------|------|-------|------|----------|
| Iron      | 231-096-4 | X    | X   | X     | X    |      | X     | X    | KE-21059 |

### National Regulations

**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 16: OTHER INFORMATION

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

### **Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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Prepared By  
Revision Date  
Revision Summary

Health, Safety and Environmental Department  
26-Mar-2025  
Not applicable.

**In accordance with local and national regulations: Occupational Safety and Health  
(Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013**

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**