

SAFETY DATA SHEET

Section 1: Identification

Product name: Iron(III) oxide
Product use: For laboratory research purposes.
Supplier: Trace Sciences International
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Richmond Hill, ON L4B 3N6
CANADA
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Section 2: Hazard(s) Identification

2.1 GHS Classification

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

Section 3: Composition/ Information on Ingredients

Formula : Fe₂O₃
Molecular Weight : 159.69 g/mol

| Material | CAS-No. | EC-No. | Index-No. | Concentration |
|------------|-----------|-----------|-----------|---------------|
| Iron oxide | 1309-37-1 | 215-168-2 | - | <=100% |

Section 4: First-Aid Measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move person out of dangerous area if safe to do so.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water for at least 15 minutes. Use chemical shower if available. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Remove contacts if possible.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5: Fire-Fighting Measures

5.1 Conditions of flammability

No data available

5.2 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.3 Hazardous combustion products

Hazardous decomposition products formed under fire conditions: Iron oxides

5.4 Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.5 Further information

No data available

Section 6: Accidental Release Measures

6.1 Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Section 8: Exposure Controls/Personal Protection

8.1 Components with workplace control parameters

| Components | CAS-No. | Value | Control parameters | Basis |
|-----------------|-----------|-------|----------------------|---|
| Diiron trioxide | 1309-37-1 | TWA | 10 mg/m ³ | Canada. British Columbia OEL |
| | | TWAEV | 5 mg/m ³ | Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants |

Remarks

The value is for particulate matter containing no asbestos and less than 1% crystalline silica.

8.2 Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Specific engineering controls

Use mechanical exhaust or laboratory fume hood to avoid exposure.

Section 9: Physical and Chemical Properties

Appearance

| | |
|--------|--------|
| Form | Powder |
| Colour | Red |

Safety Data

| | |
|--|----------------------------------|
| pH | No data available |
| Melting point/freezing point | 1,565 °C (2,849 °F) at 1,013 hPa |
| Boiling point | No data available |
| Flash point | Not applicable |
| Flammability (solid, gas) | No data available |
| Ignition temperature | No data available |
| Auto-ignition temperature | No data available |
| Lower explosion limit | No data available |
| Upper explosion limit | No data available |
| Vapour pressure | No data available |
| Density | 5.25 g/mL at 25 °C (77 °F) |
| Water solubility | Insoluble |
| Partition coefficient: n-octanol/water | No data available |
| Relative vapour density | No data available |
| Odour | No data available |
| Odour Threshold | No data available |
| Evaporation rate | No data available |

Section 10: Stability and Reactivity

10.1 Chemical stability

Stable under recommended storage conditions

10.2 Possibility of hazardous reactions

Risk of explosion with:

Aluminum, calcium silicide, ethylene oxide, polymerization, carbon monoxide, magnesium, perchlorates

Risk of ignition or formation of inflammable gases or vapours with:

Carbides, hydrogen sulphide, hydrogen peroxide

Exothermic reaction with:

Hydrazine hydrate, calcium hypochlorite

10.3 Conditions to avoid

No data available

10.4 Materials to avoid

Chloroformates, peroxides, strong acids

10.5 Hazardous decomposition products

See section 5

Section 11: Toxicological Information

Acute toxicity

Oral

LD50 Oral - Rat - male and female - > 5,000 mg/kg
(EC Directive 92/69/EEC B.1 Acute Toxicity (Oral))
Remarks: (ECHA)

Inhalation

LC50 Inhalation - Rat - male and female - 4 h - > 5.05 mg/l - dust/mist
(OECD Test Guideline 403)

Dermal

No data available

Other information on acute toxicity

Acute toxicity estimate Inhalation - 4 h - > 5 mg/l - dust/mist(Calculation method)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization

Maurer optimisation test - Guinea pig
Result: negative

Remarks: (ECHA)

Germ cell mutagenicity

Test Type: Ames test
Test system: S. typhimurium
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)

Test Type: in vitro test
Test system: Chinese hamster fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: comet assay
Species: Rat
Cell type: Bone marrow
Application Route: Oral
Result: negative
Remarks: (ECHA)

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Diron trioxide)

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available

Aspiration hazard

No data available

Signs and Symptoms of Exposure

Long term inhalation exposure to iron (oxide fume or dust) can cause siderosis. Siderosis is considered to be a benign pneumoconiosis and does not normally cause significant physiologic impairment. Siderosis can be observed on x-rays with the lungs having a mottled appearance. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS: NO7400000

Section 12: Ecological Information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

Section 13: Disposal Considerations

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

Section 14: Transport Information

IATA

Not dangerous good

Section 15: Regulatory Information

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR

Section 16: Other Information

Further information

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