Material Safety Data Sheet

Iron(III) Oxide

Version: 2.0 EN

Revision Date: 2025-1

SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 Product identifiers

Product Name	Iron(III) Oxide
CAS No	1309-37-1
Synonyms	Ferric Oxide, Red Iron Oxide, Diiron trioxide

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

Recommended Use	Chemical intermediate,For research and industrial use only

1.3 Details of the supplier of the safety data sheet

Company	China lithium Products technology Company Limited
	9 HG, No.99 LuJiang Road, Xiamen city, China
Telephone	+86 592 2687860
Email	info@lithium-chemical.com

1.4 Emergency telephone number

Emergency phone #	+86 592 2687860

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture

2.2 GHS Label elements, including precautionary statements

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

Hazard Statements

No data available

Precautionary Statements

No data available

Supplemental Hazard Statements

Referring to current information, no physical or chemical hazard

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Referring to current information, no physical or chemical hazard

2.4 Other hazards

None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Substance name	Iron Oxide
Formula	Fe_2O_3
CAS No	1309-37-1
EC No	215-168-2

Hazardous ingredients: Iron(III) oxide, Concentration: <= 100 %

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled

If breathed in, move person into fresh air

In case of skin contact

Take off immediately all contaminated clothing. Rinse skin with water/ shower

In case of eye contact

Rinse out with plenty of water. Remove contact lenses

If swallowed

Make victim drink water (two glasses at most). Consult doctor if feeling unwell

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given

5.2 Special hazards arising from the substance or mixture

Iron oxides

Not combustible

Ambient fire may liberate hazardous vapours

5.3 Advice for firefighters www.lithium-chemical.com

Wear self-contained breathing apparatus for firefighting if necessary

5.4 Further information

None

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert

For personal protection see section 8

6.2 Environmental precautions

No special precautionary measures necessary

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal

6.4 Reference to other sections

For disposal see section 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling

For precautions see section 2.2

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry

Storage class

Storage class (TRGS 510): 13: Non Combustible Solids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	CAS-No.	Value	Control parameters	Basis
Iron(III) oxide	1309-37-1	TWA	5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Not classifiable as a human carcinogen		
		TWA	5 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	10 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air

			Contaminants
	PEL	10 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
	PEL	5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2 Exposure controls

Appropriate engineering controls: Change contaminated clothing. Wash hands after working with substance

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin and body protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves

Respiratory protection

required when dusts are generated

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system

Control of environmental exposure

No special precautionary measures necessary

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Form: powder Colour: red brown
Odour	odorless
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	1,565 °C at ca.1,013 hPa
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	The product is not flammable
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Density	5.25 g/cm3 at 25 °C

Water solubility	0.001 g/l at 20 °C - OECD Test Guideline 105
Partition coefficient: n- octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other safety information

None

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No additional information available

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature)

10.3 Possibility of hazardous reactions

Risk of explosion with:

Aluminums

Aalcium silicide

Ethylene oxide

Polymerization

Carbon monoxide

Magnesium

Perchlorate

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

Carbides

Hydrogen sulphide

Hydrogen peroxide

Exothermic reaction with:

Hydrazine hydrate

Calcium hypochlorite

10.4 Conditions to avoid

No information available

10.5 Incompatible materials

Strong reducing agents

10.6 **Hazardous decomposition products**

In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:	LD50 Oral - Rat - male and female - > 5,000 mg/kg (EC Directive 92/69/EEC B.1 Acute Toxicity (Oral)) Remarks: (ECHA) LC50 Inhalation - Rat - male and female - 4 h - > 5.05 mg/l - dust/mist (OECD Test Guideline 403) Dermal: No data available
Skin corrosion/irritation:	Skin - Rabbit Result: No skin irritation - 4 h (OECD Test Guideline 404)
Serious eye damage/eye irritation:	Eyes - Rabbit Result: No eye irritation (OECD Test Guideline 405)
Germ cell mutagenicity:	No data available 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)

Respiratory or skin sensitization:

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification

Germ cell mutagenicity:

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	Static test EC50 - Daphnia magna (Water flea) - > 100 mg/l (OECD Test Guideline 202) Remarks: (ECHA)	- 48 h
Toxicity to bacteria	Static test EC50 - activated sludge - > 10,000 mg/l (ISO 8192)	- 3 h

12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of 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

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company

Remarks

Dispose of as unused product

SECTION 14: TRANSPORT INFORMATION

ADR/RID

UN number： No	Packing group: No	Environmental hazards： No
Proper shipping name： No	Transport hazard class(es)： No	

IMDG

IMDG UN number： No	Packing group: NoI	Environmental hazards： No
Proper shipping name： No	Transport hazard class(es):No	

IATA

UN number： No	Packing group: No	Environmental hazards： No

Proper shipping name: No Transport hazard class(es)： No

SECTION 15: REGULATORY INFORMATION

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

National regulatory information

None

Other regulations

Please pay attention on the waste treatment should also comply with local regulations requirement

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. China Lithium Product Technology Co., Ltd.(CLPC) and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.lithium-chemical.com for additional terms and conditions of sale.