

Material Safety Data Sheet (MSDS)

LIQUIDS RESEARCH LTD

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1 Product and Company Information

Product: Iron oxide powder dispersed with chitosan (from crab shell). Autoclaved for 20 minutes at 121°C.

Catalogue designation: n/a

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2 Composition and Description

Magnetic iron oxide: ~1% by weight.

Chitosan: <1% by weight

Water: > 98% by weight

CAS: 1309-37-1 (magnetite)

CAS: 9012-76-4 (chitosan)

EC No: 215-168-2 (magnetite)

3 Hazards Identification

Harmful by inhalation of dry powder. Affects respirator system. May cause irritation to eyes and respiratory tract.

4 First Aid

Eyes: Irrigate thoroughly with clean water or an eye wash solution for at least 15 minutes lifting upper and lower eyelids occasionally. Seek medical attention.

Inhalation: Remove patient to fresh air. Obtain medical attention

Skin: Wash with soap and water. Remove contaminated clothing.

Ingestion: Wash out mouth with water and give several glasses of water or milk to drink. Never give an unconscious person anything to drink. Obtain medical attention.

5 Fire Fighting Measures

Not a fire hazard

6 Accidental Release Measures

(As appropriate to quantity handled.)

Ventilate area of spillage if in dry powder form.

Wear appropriate personal protective equipment as specified in Section 8.

Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

7 Handling and Storage

Maintain in a tightly closed container. Protect against physical damage. Containers of this material may be hazardous when empty since they may retain product residues (dust, solids); observe all warnings and precautions listed for the product. Do not eat or drink in handling area.

8 Exposure Controls / Personal Protection (applies to dry powder form magnetite)

Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL) -

Iron oxide fume: 10 mg/m³

- ACGIH Threshold Limit Value (TLV) -

Iron oxide (Fe₂O₃): 5 mg/m³ (TWA) respirable fraction.

Personal Protective Equipment

The selection of personal protective equipment varies, depending upon conditions of use. Wear appropriate respiratory protection for dust/mist when ventilation is inadequate. A filtering face piece dust mask is suitable for most applications, if necessary. Where skin and eye contact may occur as a result of brief periodic exposures, wear long sleeved clothing, coveralls, chemical resistant gloves, and safety glasses with side shields.

9 Physical Data for magnetite only

Appearance: Red / brown dispersion

Melting Point: 1565°C (2849F)

Flash Point: N/a

Boiling Point : Not applicable

Specific gravity: 5.24

Ignition temperature : No data

Solubility in water: Insoluble

Viscosity at 20°C: No data

Vapour pressure of water (20°C): Not applicable

Volatile content (20°C): Water

Saturation magnetisation: No data

Mean magnetic particle diameter: 20 nm

10 Stability and Reactivity

Stability

Stable.

Incompatibilities:

Incompatible with carbon monoxide, hydrazine, calcium hypochloride, performic acid, bromine pentafluoride.

Hazardous decomposition and by-products

No information.

Hazardous Polymerisation

No data

11 Toxicity data (dry form magnetite):

Sensitisation

Respiratory: Affects respirator system.

Skin: May cause allergic skin reaction.

Eye: May cause irritation.

Routes to exposure

Skin contact: Possible irritant.

Eye contact: Irritation.

Inhalation: Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

Chronic exposure

No information.

LD50 ipr (rat) : >5000mg/kg

LD50 ipr (mus): >5000mg/kg

12 Ecological Data

No data

13 Disposal Considerations

Contact a licensed professional waste disposal service. Observe all local environmental regulations.

14 Transport Information

Not regulated.

15 Regulatory Information

No data

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For further information please contact our technical department at the address given below.

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