

Material Safety Data Sheet (MSDS)

LIQUIDS RESEARCH LTD

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1 Product and Company Information

Product: Magnetite particles dispersed in water with transferrin human partially iron-saturated. Ferrofluid.

IN VITRO USE ONLY

Catalogue designation: BKS32

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2 Composition and Description

Magnetite: <10% by weight.

Water: >90% by weight

Additives: <30% by weight

CAS: 7732-18-5 (water component only),

CAS: 11096-37-0 (transferrin)

EC no. 234-318-8 (transferrin)

EINECS/ELINCS: No data

3 Hazards Identification

This product is not classified as dangerous. This product does not require any hazard warning on the label under established regulatory criteria. May be harmful if ingested in quantity. May be irritating to eyes and may irritate skin. Repeated or prolonged skin contact may result in severe irritation.

4 First Aid

Eyes: Irrigate thoroughly with clean water or an eye wash solution for at least 15 minutes. Call a physician.

Inhalation of smoke or mist: Remove from exposure, and seek medical attention.

Skin: Wash with soap and water. In severe cases obtain medical attention.

Ingestion: Keep at rest and seek medical attention. Wash out mouth with water provided person is conscious. Call a physician.

Effects of overexposure: No experience of overexposure.

5 Fire Fighting Measures

Emits toxic fumes under fire conditions
Unusual fire and explosion hazards: No data.

6 Accidental Release Measures

(As appropriate to quantity handled.)
Prevent spreading by diking, ditching, or absorbing on inert materials. Keep out of sewers and waterways.

7 Handling and Storage

Avoid contact with eyes and skin.
Long term storage temperature: -20°C
Special requirements: light sensitive
Electrostatic accumulation hazard: No data.

8 Exposure Controls / Personal Protection

Engineering Controls

Local exhaust ventilation required
Exposure Limits: No data

Personal Protective Equipment

Avoid breathing vapour if heated.
Hand: Gloves
Eye: Safety goggles.
Wash thoroughly after handling.

9 Physical Data

Appearance: Low viscosity brown liquid.
Melting Point: Not determined
Flash Point (carrier): Not applicable.
Boiling Point : 100°C (free form water)
Specific gravity: 0.8 to 1.1
Ignition temperature: Not applicable
Solubility in water: Soluble
Viscosity at 27°C: <5 cp
Vapor Pressure (mm Hg): 17.5 @ 20C (68F)
Volatile content: Water
Saturation magnetisation in Gauss: ~1
Mean magnetic particle diameter: 10nm (100Å)
Magnetite concentration (approximate): 5 mg magnetite / mL of ferrofluid

10 Stability and Reactivity

Stability

Stable.
Incompatibility: Strong oxidising agents

Hazardous decomposition and by-products

Not known

Hazardous Polymerisation

Will not occur.

11 Toxicity data (free form transferrin only):

To the best of our knowledge the chemical, physical and toxicological properties have not been investigated. Potential biohazardous material.

Sensitisation

Respiratory: May be irritating to mucous membranes and upper respiratory tract.

Skin: May cause allergic skin reaction.

Eye: Irritating.

Routes to exposure

Skin contact: Possible irritant.

Eye contact: Possible irritant.

Inhalation: May be irritating to mucous membranes and upper respiratory tract.

May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

Chronic exposure

No data

12 Ecological Data

No data

13 Disposal Considerations

Contact a licensed professional waste disposal service. Observe all local environmental regulations. Not suitable for disposal by either landfill or via municipal sewers, drains, natural stream or rivers.

14 Transport Information

Not classed as hazardous for transport by RID/ADR, IATA AND/R.

15 Regulatory Information

Not hazardous according to directive 67/548/EEC.

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For further information please contact our technical department at the address given on page one.