

Material Safety Data Sheet (MSDS)

LIQUIDS RESEARCH LTD

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1 Product and Company Information

Product: Magnetite particles dispersed in water with polyethylenimine. Ferrofluid.

IN VITRO USE ONLY

Catalogue designation: BKS29

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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: 9002-98-6 (polyethyleneimine)

EINECS/ELINCS: No data

3 Hazards Identification

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 10 minutes. Seek medical attention immediately.

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: Seek medical advice.

Effects of overexposure: No experience of overexposure.

5 Fire Fighting Measures

Unusual fire and explosion hazards: No data.

6 Accidental Release Measures

(As appropriate to quantity handled.)

Wear protective clothing. 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. Store in glass or HDPE bottles.

Storage temperature: Ambient

Transport temperature: Ambient

Electrostatic accumulation hazard: No data.

Store away from oxidising agents.

8 Exposure Controls / Personal Protection

Engineering Controls

Local exhaust ventilation: Not required

Exposure Limits: No data

Personal Protective Equipment

Avoid breathing vapour. Handle in a fume hood.

Hand: Gloves

Eye: Safety goggles.

Wash thoroughly after handling.

9 Physical Data

Appearance: Dark brown liquid.

Melting Point: Not determined

Flash Point (carrier): Not applicable.

Boiling Point: 100°C (free form water)

Specific gravity: 1.0 to 1.3

Ignition temperature: Not applicable

Solubility in water: Soluble

Viscosity at 27°C: <5 cp

Vapour Pressure (mm Hg): No data

Volatile content: Water

Saturation magnetisation in Gauss: 10

Mean magnetic particle diameter: 10nm (100Å)

Magnetite concentration (approximate): 10 mg / mL of ferrofluid

10 Stability and Reactivity

Stability

Stable.

Incompatibility: Not known

Hazardous decomposition and by-products

If evaporated to dryness, polyethyleneimine residue may react with oxidising agents. Carbon monoxide, Carbon dioxide, and nitrous vitriol gases may form upon decomposition.

Hazardous Polymerisation

Will not occur.

11 Toxicity data:

Sensitisation

Respiratory: No data

Skin: May cause allergic skin reaction.

Eye: Irritating.

Routes to exposure

Skin contact: Possible irritant.

Eye contact: Irritation.

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

May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

LD50 (polyethyleneimine free form):

940 mg/kg (gpg)

1150 mg/kg (mus)

1350 mg/kg (rat)

Acute and Chronic exposure

To the best of our knowledge the acute and chronic toxicity of BKS29 is not known.

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 (free form polyethyleneimine only)

Xn Harmful

22 Harmful if swallowed.

36 Wear suitable protective clothing.

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