



## Safety Data Sheet

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### Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: 1mol/L LiFSI EMI-FSI

SDS No. : T794E-5

Recommended use of the chemical and restrictions on use

Research and Development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

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### Section 2. Hazards identification

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Reproductive toxicity: Category 1

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

H360 May damage fertility or the unborn child

Precautionary statements

Prevention

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P270 Do not eat, drink or smoke when using this product.

Response

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER/doctor.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water or shower.



P363 Wash contaminated clothing before reuse.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P330 IF SWALLOWED: Rinse mouth.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**Storage**

P405 Store locked up.

**Disposal**

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Specific danger/hazard**

**Health hazard**

See "11. Toxicological Information".

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### Section 3. Composition/information on ingredients

Substance/mixture:

Mixture

| Ingredient name                                      | Content (%) | CAS RN      | ENCS   | Chemical formula                                                                           |
|------------------------------------------------------|-------------|-------------|--------|--------------------------------------------------------------------------------------------|
| Lithium bis(fluorosulfonyl)imide                     | 13          | 171611-11-3 | 1-1247 | LiN(SO <sub>2</sub> F) <sub>2</sub>                                                        |
| 1-Ethyl-3-methylimidazolium bis(fluorosulfonyl)imide | 87          | 235789-75-0 | -      | C <sub>8</sub> H <sub>11</sub> F <sub>2</sub> N <sub>3</sub> O <sub>4</sub> S <sub>2</sub> |

Note : The figures shown above are not the specifications of the product.

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### Section 4. First aid measures

Descriptions of first aid measures

**General measures**

IF exposed or concerned: Get medical advice/attention.

**IF INHALED**

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF INHALED: Call a POISON CENTER/doctor if you feel unwell.

**IF ON SKIN**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Immediately call a POISON CENTER/doctor.

If skin irritation or rash occurs: Get medical advice/attention.

**IF IN EYES**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER/doctor.

If eye irritation persists: Get medical advice/attention.

**IF SWALLOWED**

Rinse mouth.

Do NOT induce vomiting.

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.



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**Section 5. Fire-fighting measures**

## Extinguishing media

## Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

## Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

## Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

See "10.Stability and Reactivity".

## Advice for firefighters

## Special extinguishing method

Evacuate non-essential personnel to safe area.

## Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

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**Section 6. Accidental release measures**

## Personal precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

## Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

## Methods and materials for containment and cleaning up

Liquid: Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Solid: Sweep up, place in a bag and hold for waste disposal.

## Preventive measures for secondary accident

Collect spillage.

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**Section 7. Handling and storage**

## Handling

## Engineering measures

(Measures to prevent operator exposure)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Measures to prevent fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

(Local ventilation/general ventilation)

Exhaust/ventilator should be available.

(Precautions)

Avoid contact with skin.

Avoid contact with eyes.

**Advice on safe handling**

- Do not handle until all safety precautions have been read and understood.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Wash hands and contaminated parts thoroughly after handling.
- When using do not eat, drink or smoke.

**Avoidance of contact**

- See "10.Stability and Reactivity".

**Advice on general occupational hygiene**

- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wash contaminated clothing before reuse.

**Storage****Conditions for safe storage**

- Keep container tightly closed.
- Store locked up. (P405)
- Store in a cool, dry place. Do not store in direct sunlight.
- Storage in accordance with local/national regulation.

**Safe packaging material**

- Use closed unbreakable containers.

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**Section 8. Exposure controls/personal protection****Permissible concentration****Administrative Control Levels and Concentration standard value**

- Not established

**Appropriate engineering controls**

- Do not use in areas without adequate ventilation.
- Eye wash station should be available.
- Washing facilities should be available.

**Personal protective equipment**

- Recommend to use protective equipment in conformity with the standards.
- Use appropriate protective equipment in accordance with local/national regulation.

**Respiratory protection**

- Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

**Hand protection**

- Wear impervious protective glove.

**Eye/face protection**

- Wear eye/face protection. Wear safety goggles in cases gas is generated.

**Skin and body protection**

- Wear protective clothing.

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**Section 9. Physical and Chemical Properties****Physical state: Liquid (20°C)**

Color: Colorless to pale brown, Clear to cloudy white

Odor: None

Melting point/Freezing point data is not available.

Boiling point, initial boiling point, or boiling range data is not available.

Flammability data is not available.



Lower and upper explosion limit/flammability limit data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Insoluble

Solubility in solvent data is not available.

Partition coefficient n-octanol/water data is not available.

Vapor pressure data is not available.

Density and/or relative density: 1.50g/cm<sup>3</sup>(20°C)

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

Other information

Other information is not available.

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## Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Not available.

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Acids, Bases, Oxidizing agents, Reducing agents

Hazardous decomposition products

Carbon oxides, Nitrogen oxides, Sulfur oxides, Hydrogen fluoride, Fluorine compounds

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## Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 4, Harmful if swallowed

[Data for components of the product]

[Company proprietary data]

(Lithium bis(fluorosulfonyl)imide)

rat LD50=50-300mg/kg

Skin corrosion/irritation

[Product]

Category 1, Causes severe skin burns and eye damage

[Data for components of the product]

[Company proprietary data]

(Lithium bis(fluorosulfonyl)imide)

**Category 1B**

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[Company proprietary data]

(Lithium bis(fluorosulfonyl)imide)

Category 1

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity

[Product]

Category 1, May damage fertility or the unborn child

[Data for components of the product]

[Company proprietary data]

(Lithium bis(fluorosulfonyl)imide)

Category 1

Specific target organ toxicity – single exposure data is not available.

Specific target organ toxicity – repeated exposure data is not available.

Aspiration hazard data is not available.

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**Section 12. Ecological Information**

Toxicity

Aquatic toxicity

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[Company proprietary data]

(Lithium bis(fluorosulfonyl)imide)

Fish (*Oryzias latipes*) LC50>100mg/L/96hr

Fish (*Danio rerio*) LC50>100mg/L/96hr

Crustacea (*Daphnia magna*) EC50=71mg/L/48hr

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

Bioaccumulative potential data is not available.

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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**Section 13. Disposal considerations**

Waste from residues

Dispose of contents/container as industrial waste. Accordance with local/national regulation.



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**Section 14. Transport Information****UNRTDG**

UN number : UN1760

UN Proper Shipping Name : CORROSIVE LIQUID, N.O.S.

Transport hazard class(es) : 8

Packing group : II

**IMDG Code (International Maritime Dangerous Goods Regulations)**

UN number : UN1760

UN Proper Shipping Name : CORROSIVE LIQUID, N.O.S.

Transport hazard class(es) : 8

Packing group : II

**IATA (Dangerous Goods Regulations)**

UN number : UN1760

UN Proper Shipping Name : CORROSIVE LIQUID, N.O.S.

Transport hazard class(es) : 8

Hazard labels : Corrosive

Packing group : II

**Environmental hazards**

Marine pollutants (yes/no) : no

Environmentally hazardous substance/mixture (yes/no) : no

ERG GUIDE No.: 154

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**Section 15. Regulatory Information**

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

**U.S. Toxic Substances Control Act (TSCA) Inventory**

Chemicals listed in TSCA Inventory

Lithium bis(fluorosulfonyl)imide

**Other regulatory information**

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

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**Section 16. Other information****References and sources for data**

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN

IMDG Code, 2024 Edition (Incorporating Amendment 42-24)

IATA Dangerous Goods Regulations (67th Edition) 2026

2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2026 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

Recommendation of occupational exposure limits (2024-2025) (JSOH)

Supplier's data/information

**General Disclaimer**

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Unauthorized translation or modification is prohibited.

Please provide SDS to customers for selling or transferring.



All chemicals have unknown hazard. Handle the product with care.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHIRP), up to FY2024).