SAFETY DATA SHEET

PRODUCT NAME	1M-Lithiumu Chloride Solution【Ethanol solvent】（Internal solution for electrode）	Data of issue	30/1/2012
		Date of revision/ Last confirmation	3/4/2025

1. Identification of the substance or mixture and the supplier

Product name	1M-Lithiumu Chloride Solution【Ethanol solvent】(Internal solution for electrode)
SDS No.	GHS-0052E
Name of supplier	Kyoto Electronics Manufacturing Co., Ltd.
Address	68 Ninodan-cho, Shinden, Kisshoin, Minami-ku, Kyoto, Japan
Division	Quality Assurance Department
Phone	+81-75-691-4121
Fax	+81-75-691-4127
Emergency phone	+81-75-691-4125

Recommended uses and restrictions on use

Recommended use	For analysis
Restrictions on use	When using for purposes other than those recommended, consult a specialist.

2. Hazard identification

GHS classification

Physical hazards	
Flammable liquids	Category 2
Health hazards	
Serious eye damage / Eye irritation	Category 2A
Carcinogenicity	Category 1A
Reproductive toxicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3(respiratory tract irritation)
	Category 3(anesthetic action)
Specific target organ toxicity (repeated exposure	Category 2(central nervous system)
	Category 1(liver)

GHS label elements

Hazard pictograms

Signal words	Danger
Hazard statements :	H224 Highly flammable liquids and vapors. H319 Strong eye irritation. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness. H350 May cause cancer. H360 May cause adverse effects on fertility or the unborn child. H372 Liver damage from prolonged or repeated exposure. H373 May cause damage to Central Nervous System through prolonged or repeated exposure.
Precautionary statement	
Prevention	P201 Obtain special instructions before use. P210 Keep away from heat / sparks / open flames / hot ignition sources. No smoking.□ P233: Keep container tightly closed. P233: Keep container tightly closed. P260 Do not breathe dust / fume / gas / mist / vapors / spray. P280 Wear protective gloves / protective clothing/eye protection / face protection.
Response	P308+P313 IF exposed or concerned: Get medical advice/attention. P370+P378 In case of fire: Use appropriate extinguishing media to extinguish.
Other hazards which do not result in classification	None known.

3. Composition/Information on ingredients

substance / mixture mixture

Components

No.	Chemical name	CAS No.	Concentration (% w/w)	ENCS / ISHL number
1	Ethanol	64-17-5	94.9	2-202
2	Lithium Chloride	7447-41-8	5.1	1-231

4. First-aid measures

General advice	Do not leave the victim unattended.
If inhaled	Remove victim to fresh air.
	Call a doctor/physician if you feel unwell.
In case of skin contact	Wash off with soap and plenty of water.
	If symptoms persist, contact a physician.
In case of eye contact	Rinse cautiously with water for several minutes.
	Remove contact lenses, if present and easy to do. Continue rinsing.
	Contact a physician immediately.
If swallowed	Rinse mouth with water.
	Do NOT induce vomiting.
	Never give anything by mouth if unconscious.
	If large quantities of this material are swallowed, call a physician immediately.
Most important symptoms and effects, both acute and delayed	No information
Notes to physician	Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	Spray water, carbon dioxide (CO_2), dry sand, fire retardant
Unsuitable extinguishing media	Large bar water
Specific hazards during fire fighting	In case of fire, prevent water for firefighting from flowing into drains or waterways.
Specific extinguishing methods	Collect contaminated firefighting wastewater. Do not discharge it into drainage facilities.
	Dispose of fire residues and contaminated wastewater in accordance with applicable regulations.
Special protective equipment for fire-fighters	Use personal protective equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Use personal protective equipment.
	Remove all sources of ignition.
Environmental precautions	Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up	If the product contaminates rivers and lakes or drains inform respective authorities. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling

Technical measures	Handle in an enclosed facility, local exhaust ventilation, or general ventilation facility. Provide adequate work area ventilation. Avoid breathing vapors (dust).
Precautions for safe handling	Prohibit the use of high temperature objects, sparks and fire in the vicinity. Do not eat, drink or smoke when using this product. Do not inhale or swallow. Do not breathe dust. After handling Wash hands thoroughly. Take precautionary measures against static discharge.
Avoiding incompatibilities	No information
Hygiene measures	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

Storage

Conditions for safe storage	Store in a well-ventilated place. Keep container tightly closed.
Container and packaging material for safe storage	Store in a closed container.

8. Exposure controls/Personal protection

Threshold limit value and permissible exposure limits for each component in the work environment

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Reference concentration / Permissible concentration	Basis
Ethanol	64-17-5	STEL	1000 ppm	ACGIH

Personal protective equipment

Respiratory protection	Suitable respiratory equipment
Hand protection material	Protective gloves
Eye protection	Safety glasses
Skin and body protection	Protective suit

9. Physical and chemical properties

Physical state	Liquid
Color	Colorless and transparent
Odor	Peculiar odor
Melting point / Freezing point	No data available
Initial boiling point and boiling range	No data available
Flammability (liquids)	No data available
Lower explosion limit and upper explosion limit / flammability limit	
Upper explosion limit / Upper flammability limit	No data available
Lower explosion limit / Lower flammability limit	No data available
Flash point	No data available
Decomposition temperature	No data available
pH	No data available
Autoignition temperature	No data available
Self-Accelerating decomposition temperature (SADT)	No data available
Viscosity	
Viscosity, kinematic	No data available
Solubility(ies)	
Water solubility	Easily soluble
Partition coefficient: n-octanol/water	No data available
Vapor pressure	No data available
Density and / or relative density Relative density	No data available
Relative vapor density	No data available
Particle characteristics Particle size	No data available

10. Stability and reactivity

Reactivity	No data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No data available
Conditions to avoid	No product data available. However, as the main component Ethanol, avoid contact with heat, flame, sparks, high temperature and direct sunlight, static electricity, and sparks.
Incompatible materials	No product data available. However, avoid the contact of Ethanol, the main ingredient, with strong oxidants.
Hazardous decomposition products	No data available

11. Toxicological information

Acute toxicity	
Ethanol	
Acute oral toxicity	LD50 (Rat) 15,010 mg/kg
Acute inhalation toxicity	LC50 (Rat) 124.7 mg/L , Exposure time 4 h , test environment vapor
Acute dermal toxicity	LDLo (Rabbit) 20,000 mg/kg
Lithium Chloride	
Acute oral toxicity	LD50 (Rat) 526 - 840 mg/kg
Acute dermal toxicity	LD50 (Rabbit) 1,488 mg/kg
Skin corrosion/irritation	May cause skin irritation and/or dermatitis.
Lithium Chloride	Skin irritation
Serious eye damage/eye irritation	Cause eye damage
Ethanol	Cause eye damage
Lithium Chloride	Eye irritation.
Respiratory or skin sensitization	
Skin sensitization	Not classified based on available information.
Respiratory sensitization	Not classified based on available information.
Germ cell mutagenicity	Not classified based on available information.
Carcinogenicity	Suspected of causing cancer.
Reproductive toxicity	May damage fertility or the unborn child.
STOT-single exposure	May cause respiratory irritation. May cause drowsiness or dizziness. This substance or mixture is classified as a specific target organ toxicant, single exposure, category 3 with airway irritation. This substance or mixture is classified as a specific target organ toxicant, single exposure, category 3 with anesthetic effects.
Ethanol	This substance or mixture is classified as a specific target organ toxicant, single exposure, category 3 with airway irritation. This substance or mixture is classified as a specific target organ toxicant, single exposure, category 3 with anesthetic effects.
STOT-repeated exposure	May cause damage to organs (central nervous system) due to long-term or repeated exposure. May cause damage to organs (liver) due to long-term or repeated exposure.
Aspiration toxicity	Not classified based on available information.
Remarks	Possible symptoms of overexposure include headache, dizziness, fatigue, nausea, and vomiting. Concentrations significantly higher than the TLV may cause coma effects.

Solvents may debride the skin.

12. Ecological information

Ecotoxicity	
Ethanol	
Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 13,000 mg/L, Exposure time 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 12,340 mg/L, Exposure time 48 h
Toxicity to algae/aquatic plants	EC50 (Lemna minor (duckweed)) 3,690 mg/L, End point Growth inhibition, Exposure time 7 Days NOEC (Lemna gibba (gibbous duckweed)) 280 mg/L, End point Growth inhibition, Exposure time 7 Days
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	NOEC (Ceriodaphnia dubia (Water flea)) 9.6 mg/L, End point Reproductive inhibition, Exposure time 10 Days
Lithium Chloride	
Toxicity to fish	EC50 (Ptychocheilus lucius) 17 mg/L, Exposure time 96 h
Persistence and degradability	
Ethanol	Biochemical oxygen demand rapidly biodegradable, Biodegradation 89 %,
Bioaccumulative potential	
Ethanol	Partition coefficient: n-octanol/water log Pow = - 0.31
Mobility in soil	No data available
Hazardous to the ozone layer	No data available
Other adverse effects	No data available

13. Disposal considerations

Waste from residues	Can be incinerated, when in compliance with local regulations. Send to a licensed waste management company.
Contaminated packaging	Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of contents/ container to an approved waste disposal plant.

14. Transport information

International Regulations

IATA-DGR

UN / ID No.	UN1170
Proper shipping name	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
Class	3
Packing group	Ⅱ
Labels	G

IMDG-Code

UN No.	UN1170
Proper shipping name	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
Class	3
Packing group	Ⅱ
Marine pollutant	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation: Please refer to the law and local regulations, etc. in each country

Special precautions for user: The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. Regulatory information

16. Other information

Citations/References

NITE-Gmiccs (National Institute of Technology and Evaluation)

NITE-CHRIP (National Institute of Technology and Evaluation)

Workplace Safety Site (Ministry of Health, Labor and Welfare)

SDS from various upstream manufacturers

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.