

SAFETY DATA SHEET

PRODUCT NAME	1M-Lithium Chloride Solution 【Acetic Acid solvent】 (Internal solution for electrode)	Data of issue	15/11/2011
		Date of revision (Confirmation)	2/4/2024

1. Identification of the substance or mixture and the supplier

Product name	1M-Lithium Chloride Solution【Acetic Acid solvent】(Internal solution for electrode)
SDS No.	GHS-0051E
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
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 3
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Health hazards

Acute toxicity / Dermal	Category 4
Skin corrosion / Irritation	Category 1
Serious eye damage / Eye irritation	Category 1
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 1(respiratory organ) Category 1(blood)

Environmental hazards

Hazardous to the aquatic environment (acute)	Category 3
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GHS label elements

Hazard pictograms



Signal words	Danger
Hazard statements	H226: Flammable liquid and vapor. H312: Harmful in contact with skin. H314: Causes severe skin burns and eye damage. H361: Suspected of damaging fertility or the unborn child. H370: Respiratory system, blood disorders. H402: Harmful to aquatic life
Precautionary statement	
Prevention	P210 Keep away from ignition sources such as heat / sparks / open flames / hot surfaces. No smoking. P233: Keep container tightly closed. 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.
Response	P301+P330+P331 IF swallowed: Rinse mouth. Do not force vomiting. P303+P361+P353 IF on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower. P305+P351+P338 IF in eyes: Rinse carefully with water for several minutes. Remove contact lenses, if present and easy to do. Continue cleaning after that. P308+P311 IF exposed or concerned Call a POISON CENTER/doctor. P310 Call a doctor immediately. P321 Special treatment is required (see section 4 of this SDS). P370+P378 In case of fire: Use an appropriate extinguisher to extinguish.
Storage	P403+P235 Store in a well-ventilated place. Place it in a cool place.
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	Acetic Acid	64-19-7	95.8%	2-688
2	Lithium Chloride	7447-41-8	4.2%	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. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	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

Advice on safe handling	Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product.
Avoidance of contact	Refer to "10 Stability and reactivity".
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	Keep in a well-ventilated place. Store at room temperature. To maintain product quality, do not store in heat or direct sunlight. Keep container tightly closed.
Further information on storage stability	No decomposition if stored and applied as directed.

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
Acetic Acid	64-19-7	OEL-M	10 ppm 25 mg/m ³	JP OEL JSOH
		TWA	10 ppm	ACGIH
		STEL	15 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 product data available. However, acetic acid as a main component

	reacts with a base and corrodes metals.
Conditions to avoid	No product data available. However, as the main component acetic acid, 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 acetic acid, the main ingredient, with strong oxidants.
Hazardous decomposition products	Halogen/Hydrogen halide

11. Toxicological information

Acute toxicity

Acetic Acid

Acute oral toxicity	LD50 (Rat) 3,310 mg/kg
Acute inhalation toxicity	LC50 (Rat) 11.4 mg/L
Acute dermal toxicity	LD50 (Rabbit) 1,060 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

Acetic Acid	Skin irritation
Lithium Chloride	Skin irritation

Serious eye damage/eye irritation

Acetic Acid	Serious 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 Not classified based on available information.

Reproductive toxicity May damage fertility or the unborn child.

Lithium Chloride May damage fertility or the unborn child.

STOT-single exposure Organ (respiratory, blood) damage

Acetic Acid Target organs Blood, respiratory system

This substance or mixture is classified as a specific target organ toxicant, single exposure, category 1.

STOT-repeated exposure Not classified based on available information.

Aspiration toxicity Not classified based on available information.

Remarks No data available

12. Ecological information

Ecotoxicity

Acetic Acid

Toxicity to fish EC50 (Pimephales promelas) 79 mg/L, Exposure time 96 h

Toxicity to daphnia and other aquatic invertebrates EC50 (Daphnia magna) 65,000 mg/L, Exposure time 48 h

Lithium Chloride

Toxicity to fish EC50 (Ptychocheilus lucius) 17 mg/L, Exposure time 96 h

Persistence and degradability No data available

Bioaccumulative potential No data available

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 Can be incinerated, when in compliance with local regulations.

residues Send to a licensed waste management company.

Contaminated Empty remaining contents.

packaging 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. UN2789

Proper shipping name ACETIC ACID, SOLUTION,more than 80% acid, by mass

Class 8

Subsidiary risk 3

Packing group II

IMDG-Code

UN No. UN2789

Proper shipping name ACETIC ACID, SOLUTION,more than 80% acid, by mass

Class 8

Subsidiary risk 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

Full text of other abbreviations

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
JP OEL JSOH	Japan. The Japan Society for Occupational Health. Recommendation of Occupational Exposure Limits
ACGIH/TWA	8-hour, time-weighted average
ACGIH/STEL	Short-term exposure limit
JP OEL JSOH / OEL-M	Occupational Exposure Limit-Mean

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECl - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR -

No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System.

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.