

SB1774

# Material Safety Data Sheet (MSDS)

LX-QR-824-38

## I. Description and Company data

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|--|
| Name: Lithium battery  |
| Distributor Information:<br><i>Electus Distribution Pty Ltd</i><br>320 Victoria Rd Rydalmere NSW 2116 Australia<br>Phone: 1300 738 555 Fax: 1300 738 500<br><a href="http://www.electusdistribution.com">www.electusdistribution.com</a> |
| Chemical System: Lithium thionyl chloride battery  |
| Product nominal voltage: 3.6V  |
| Designated for recharge: No  |

## II. Chemical Component/Hazardous Ingredients

|   |
|---|
| ( )Simple ( Yes )Admixture  |
| Chinese Name : 鋰亞硫酰氯電池  |
| English Name : Lithium thionyl chloride battery   |
| CAS NO . : 7719-09-7  |
| UN NO.: 3090 (a lithium battery or battery assembly) or UN 3091(contained in equipment) |
| Material Component (%) : :  |
| Lithium: 3~5% (0.85g for ER14505)   |
| Carbon, 6~8%  |
| Electrolyte: 40~50%   |
| Glass:1~2%  |
| Steel: 30~40%   |
| Others: 5~10%   |

**NOTE: The battery should not be opened or exposed to heat because exposure of the ingredients contained within could be harmful under some circumstances.**

## III. Possible Hazardous

|                 |  |
|-----------------|--|
| harm and effect | Health harm effect:<br>There is no harm with no breakage battery. If battery is destroyed, there is light excite when contact skin directly. |
|                 | Environment effect: No   |
|                 | Physics & chemistry harm:<br>No breakage no harm   |
|                 | Special harm:<br>For the small battery, it will clog windpipe When gulp discarefully, influence breath.                                      |

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| Main symptom: Breathe difficultly, dizzy |
| Dangerous class (See:GB13690-92) : --    |

#### IV. First aid measure

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| Manner: When battery Leak<br>1.Skin contact: Wash by water<br>2.Eye contact: Clean by cleaning water at once and see a doctor.<br>3.Inbreathe: Breathe fresh air<br>4.Eat: See a doctor at once |
| Most important symptom and harm effect: It will clog windpipe When gulp discarefully, influence breath.   |
| Defend first aid person: Pull on air breath machine, defence armet, glasses, etc.   |
| Instruction for doctor: It can cause thrill gas and clog windpipe When patient gulp discarefully  |

#### V. Firefighting Measures

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| Applicable fire extinguisher: CO <sub>2</sub> , fire extinguisher、ABC dry powder fire extinguisher、sand, etc.                                      |
| Special harm when put out fair:<br>Be able to explode when large quantity battery burn   |
| Special put out fire procedure:<br>Can't use water to put our fire. Little burnt may use sand to cover. Large burnt need to use fire extinguisher. |
| Special equipment for fire protection person: Pull on air breath machine, defence armet, glasses, etc.   |

#### VI. Accidental Release

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| Note item for individual:<br>Can't dismantle、press、short circuit、heat、pile battery, etc.                    |
| Environment note item:<br>Can't heat battery and put them into fire, can't place them in humidity zone.     |
| Clean manner:<br>Can't pile battery, can't put them into fire. Else dispose according to general provision. |

#### Steps to be taken in case material is released leaked, or spilled:

The preferred response is to leave the area and allow the batteries to cool and the vapours to dissipate. Avoid skin and eye contact or inhalation of vapours. Collect all released material in a plastic lined metal container and remove spilled liquid with absorbent. Doing this, protect your skin and eyes with gloves and protection glasses.

#### VII. Handling and Storage

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| <p>Disposal:<br/>Package well, separate each battery, contact each battery can cause short circuit, burnt etc.</p>   |
| <p>Storage:<br/>Don't press battery, destroy package. Storage on the condition of normal temperature, normal humidity, airiness and dry. Disposal them in time if find abnormal situation.</p> |

To prevent potential leaking, overheating or explosion of batteries please be advised to take following precautions:

**WARNINGS!**

- Do not immerse the battery in water.
- Store the battery in a cool dry environment.
- Do not use or leave the battery near a heat source such as fire or heater.
- When recharging, use the battery charger specifically for that purpose.
- Do not reverse the position (+) and negative (-) terminals.
- Do not dispose the battery in fire or heat.
- Do not short-circuit the battery by directly connecting the positive (+) and negative (-) terminal with metal objects such as wire.
- Do not transport or store the battery together with metal objects such as necklaces, hairpins etc.
- Do not strike or throw the battery against hard surface.
- Do not directly solder the battery and pierce the battery with a nail or other sharp object.

**VIII. Exposure Control Measures**

|  |      |         |      |
|--|------|---------|------|
| <p>Project control:<br/>Don't short circuit. Control storage temperature and humidity. Work temperature can't be high.</p>   |      |         |      |
| Control parameter  |      |         |      |
| TWA  | STEL | CEILING | BEIs |
| --   | --   | --      | --   |
| <p>Individual defence equipment: / It isn't necessary under normal situation.</p> <p>Breath defence: /</p> <p>Hand defence: /</p> <p>Eye defence: /</p> <p>Skin and body defence: /</p> <p>Sanitation measure: /</p> |      |         |      |

**IX. Physics and chemical characteristic**

|                                |                        |
|--------------------------------|------------------------|
| Substance station: solid state | Shape: cylindrical     |
| Color: metal nature color      | Smell: No sapor (full) |

|                                  |  |
|----------------------------------|--|
| PH : /                           | Boiling point: /   |
| Disassemble temperature: /       | Flash point: /<br>Test manner: ( / ) open cup ( / )<br>close cup |
| Natural temperature: /           | Explode limit: Higher than 170□ will<br>explode                  |
| Vapor tension: /                 | Vapor density: /   |
| Relatively density (water=1) : / | Dissolve : /   |

### X. Invariability and reaction

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| Invariability: invariability under normal station   |
| Harm effect under special situation: <ol style="list-style-type: none"> <li>1. The battery will leak when it is disassembled, staved, destroyed and have light spinule.</li> <li>2. The battery can burn or explode when the battery is put in fire.</li> <li>3. Younger gulp.</li> <li>4. Short circuit can cause heat and burnt.</li> </ol> |
| Avoid status: disassemble, stave, destroy, short circuit, heat battery, far away younger  |
| Escape substance: metal (Avoid battery anode contact cathode to short circuit)  |
| Harm disassemble substance:--   |

### XI. Toxicological data

|   |
|---|
| Virulence: breathe: --<br>Skin: --<br>Eye: --<br>LD50(test animal, breathe track):--<br>LC50(test animal, breathe track):-- |
| Part effect: --   |
| Sensitivity:--  |
| Slow virulence or long virulence:--   |
| Special effect:<br>--   |

#### Swallowing:

**Ingestion of a battery can be harmful.**

### XII. Ecological data

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| Possible environment effect/environment:---<br>Under normal condition of use, the battery is hermetically sealed and does not release<br>Chemicals listed in Section II. It does not pose a physical or health risk to uses. |
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### XIII. Disposal Considerations

Misuse disposal manner:  
 Disposal battery as normal rubbish after the misuse battery is put in water with conductance rate for 10 days.

Waste disposal method:  
 1) Dispose in accordance with appropriate national and international regulations, like as per directions in WEEE, etc.  
 2) Open cells should be treated as hazardous waste.  
 3) DO NOT INCINERATE or subject battery cells to temperature in excess of 212°F (100°C). Such treatment can cause cell rupture.

**XIV. Transportation Information**

International transfer provision:  
 Lithium battery international transfer rules

Provisions for the international transportation:  
 Our Lithium Battery (not restricted) meet with all the requirements of UN Manual of Tests and criteria Part III, subsection 38.3

Ref)  
 The batteries are complied with the PACKING INSTRUCTION OF the current IATA (57<sup>th</sup> regulation, 2016) section IB of PI968.  
 Lithium batteries identified by the manufacturer as being defective for safety reasons, that have been damaged or have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons).  
 1. a lithium metal cell, the lithium content is not more than 1 g;  
 2. a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g;  
 3. each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, subsection 38.3

|                                   |  |
|-----------------------------------|--|
|                                   | Quantity per package Cargo Aircraft Only |
| Lithium metal cells and batteries | 2.5kg G                                  |

Cells and batteries must be packed in strong outer packagings that conform to 5.0.2.4, 5.0.2.6.1 and 5.2.12.1.

Cells and batteries must be packed in inner packagings that completely enclose the cell or battery.

Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short

circuit.

Each package must be capable of withstanding a 1.2 m drop test in any orientation without:

- damage to cells or batteries contained therein;
- shifting of the contents so as to allow battery to battery (or cell to cell) contact;
- release of contents.

Lithium metal batteries contained in equipment packing instruction.

If a lithium cell, the lithium content is not more than 1g; or a lithium battery, the lithium content is not more than 2g. They are complied with the PACKING INSTRUCTION OF the current IATA (57<sup>st</sup> regulation) section I of PI970.

Internations conventions:

|      |            |     |
|------|------------|-----|
| Air  | IATA       | Yes |
| Sea  | IMDG       | Yes |
| Land | ADR (road) | Yes |
|      | RID (rail) | Yes |

Organizations governing the transport of lithium batteries

| Area          | Method                    | Organization | Special Provision     |
|---------------|---------------------------|--------------|-----------------------|
| International | Air                       | IATA, ICAO   | A57                   |
| International | Water                     | IMO          | 188                   |
| U.S.A.        | Air, Rail, Highway, Water | DOT          | 49CFR Section 173.185 |

Their Regulations are based on the UN recommendations. Each special provision provides specifications on exceptions and packaging for lithium batteries shipping.

**The batteries do meet the above mentioned provisions.**

#### XV. Rule of law data

Use statute:

≤Former battery 4th part: lithium battery safety requirement≥ GB8897.4-2002