## SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION

### 1.1 Product Description:

Lithium Thionyl Chloride (Li-SOCl2) or Lithium Metal, non-rechargeable cells and batteries.

### 1.2 Model / Parameters

| Model | Voltage | Capacity | Lithium Content |
|---|---|---|---|
| ER14250LR/ILR14250-150 | 3.6V | 800mAh | 0.24g |
| ER14250(H) | 3.6V | 1200mAh | 0.31g |
| ER14335(H) | 3.6V | 1650mAh | 0.43g |
| ER14505(H) | 3.6V | 2700mAh | 0.69g |
| ER14505M | 3.6V | 2100mAh | 0.66g |
| ER14505SM | 3.6V | 1800mAh | 0.46g |
| ER17505(H) | 3.6V | 3600mAh | 0.93g |
| ER17505M | 3.6V | 2800mAh | 0.89g |
| ER18505(H) | 3.6V | 3800mAh | 0.98g |
| ER18505M | 3.6V | 3500mAh | 0.92g |
| BL-4PN (-S1, -S2, -S4, -S10) | 3.6V | 400mAh | 0.13g |
| BL-7PN (-S2, -S4, -S6, -S20) | 3.6V | 750mAh | 0.19g |
| BL-16PN (-S2, -S4) | 3.6V | 1600mAh | 0.49g |

### 1.3 Supplier

**Office Address**
BIPOWER CORP.
2560 Corporate Place, Suite D203
Monterey Park, CA 91754 USA

**Contact Information**
Emergency Telephone: (323) 981-9498
Fax: (323) 981-9468
Date of Revision: July 15, 2025

## SECTION 2 – HAZARDS IDENTIFICATION

### 2.1 Classification

These products are not classified as hazardous under Regulation (EC) No 1272/2008 (CLP). Each product Is considered an article—a sealed battery—that does not require a Safety Data Sheet (SDS) under Regulation (EC) No 1272/2008 (CLP), except in the case of rupture. The indicated hazards apply only to a ruptured battery.

Acute toxicity, Category 3, oral; H301

Skin corrosion, Category 1A; H314

Serious eye damage, Categories I; H318

Specific target organ toxicity following repeated exposure, Categories I; H372

## 2.2 Label elements

Hazard pictograms

Signal Word **Danger**

## 2.3 Hazard Statements

H301 - Toxic if swallowed.

H314 - May cause severe skin burns and serious eye damage.

H372 - May cause organ damage through prolonged or repeated exposure.

## 2.4 Precautionary Statements - Prevention

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

P280 - Wear protective gloves, clothing, eye protection, face and hearing protection.

## 2.5 Precautionary Statements - Response

P301+P330+P331 - If swallowed: Rinse mouth. Do not induce vomiting.

P303+P361+P353 - If on skin (or hair): Remove contaminated clothing immediately and rinse affected areas with water or take a shower.

P304+P340 - If inhaled: Move the person to fresh air and ensure they remain comfortable to support breathing.

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. If contact lenses are present and easy to remove, take them out. Continue rinsing.

## 2.6 Precautionary Statements – Storage

P405 – Storage room shall be locked up.

## 2.7 Precautionary Statements – Disposal

P501 - Dispose of contents and container in accordance with local, regional, national, and international regulations and laws.

## 2.8 Hazards Not Otherwise Classified (HNOC)

Not applicable

## 2.9 Interactions with other chemicals

The use of alcoholic beverages may increase toxic effects.

## 2.10 Other information

Harmful to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

## SECTION 3 – COMPOSITION AND INGREDIENTS INFORMATION

| Ingredient | Molecular formula | CAS NUMBER | Weight % | OSHA (PEL*) | ACGIH (TLV*) |
|---|---|---|---|---|---|
| Lithium Metal | Li | 7439-93-2 | 3%~5% | N/A | N/A |
| Thionyl Chloride | $SOCl_2$ | 7719-09-7 | 40%~45% | 5 $mg/m^3$ | 0.2 ppm |
| Carbon | C | 1333-86-4 | 3%~6% | 3.5 $mg/m^3$ | 3 $mg/m^3$ |
| Aluminum Chloride | $AlCl_3$ | 7446-70-0 | 1%~5% | 2 $mg/m^3$ | N/A |
| Lithium Chloride | LiCl | 7447-41-8 | ≤0.5% | 15 $mg/m^3$ | 10 $mg/m^3$ |
| Tetrafluoroethylene | $(C_2F_4)n$ | 9002-84-0 | ≤0.5% | N/A | N/A |
| Nickel | Ni | 7440-02-0 | ≤1.0% | N/A | N/A |
| Stainless Steel | N/A | N/A | 30%-36.5% | N/A | N/A |
| Glass | $Na_2O{\cdot}CaO{\cdot}6SiO_2$ | N/A | 0.05%-0.5% | N/A | N/A |

* PEL (Permissible Exposure Limit) & TLV (Threshold Limit Value) are determined by OSHA and ACGIH respectively.

## SECTION 4 - FIRST AID MEASURES

### 4.1 Eye Exposure

In case of eye contact, flush thoroughly with plenty of water for at least 15 minutes. Hold the eyelids open with your fingers to ensure adequate flushing. Seek medical attention immediately.

### 4.2 Skin Exposure

If the internal materials of an opened battery cell come into contact with the skin, immediately rinse the affected area thoroughly with plenty of water and soap.

### 4.3 Inhalation Exposure

If gas from an opened battery is inhaled, seek medical attention immediately.

### 4.4 Ingestion Exposure

If swallowed, seek medical attention immediately. Do not induce vomiting unless directed by a medical professional.

## SECTION 5 - FIRE FIGHTING MEASURES

### 5.1 Danger Characteristic

Exposure to excessive heat may cause the venting of liquid electrolyte.
A battery may rupture and release hazardous decomposition products if exposed to fire.

### 5.2 Hazardous Combustion Products

Corrosive and toxic gases may be released in the event of a fire.

### 5.3 Fire-Fighting Method

Staff must wear a full-face filter mask or an isolated breathing apparatus.

Staff must also wear fire-resistant clothing and position themselves upwind for protection. Relocate the container to an open area as quickly as possible.

Spray water on containers exposed to fire to keep them cool until the fire is fully extinguished.

### 5.4 Fire-Fighting Media

Use plenty of water, dry chemical powder, or carbon dioxide.

### 5.5 Causes of Unusual Fire or Explosion:

Lithium batteries may catch fire or explode if mishandled or subjected to improper use. Risk factors include exposure to excessive heat, recharging, puncturing, crushing, or incineration.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

### Emergency Treatment

If battery materials are released, evacuate personnel from the affected area until the batteries have cooled and any fumes have fully dissipated.

Ensure adequate ventilation to disperse hazardous gases. Avoid contact with skin and eyes, and do not inhale vapors.

Absorb any spilled liquid using a suitable material, and dispose of the resulting waste through incineration.

## SECTION 7 - HANDLING AND STORAGE

### 7.1 Handling

1. Do not allow battery terminals to come into contact with each other or with any metal objects.
2. Do not place the battery in fire or expose it to high temperatures. Do not solder the battery directly. Avoid using or storing the battery near open flames or heating devices.
3. Avoid exposing the battery to excessive physical shock or vibration.
4. Do not immerse the battery in water, throw it into water, or expose it to moisture.
5. Do not short-circuiting the battery, as it can reduce its lifespan and potentially ignite nearby materials. Direct contact with a short-circuited battery may result in burns.
6. Do not open, damage, or incinerate batteries, as this may cause them to leak, rupture, or release hazardous substances contained within.
7. Store batteries securely and keep them out of reach of children.
8. Never connect the battery directly to a wall outlet or a vehicle’s cigarette lighter socket.
9. Do not mix old and new batteries, or combine different types—such as Ni-Cd, dry-cell, or batteries from various manufacturers.

### 7.2 Storage

1. Store batteries separately from other materials in a noncombustible, well-ventilated structure equipped with sprinklers. Ensure there is adequate clearance between battery stacks and surrounding walls.

2. Keep the batteries in a cool, dry, and well-ventilated place. Recommended control temperature: -20 to 30°C, humidity: 45–85%. Avoid prolonged exposure to direct sunlight. Keep away from fire, heat sources, and prohibited compounds. Store in separate storage rooms.
3. Ensure the storage area is equipped with appropriate types and quantities of firefighting equipment. The facility should also have suitable containment materials for handling potential spills or leaks.

## SECTION 8 - EXPOSURE CONTROLS & PERSONAL PROTECTION

### 8.1 Engineering Control

Keep away from heat and open flames. Ensure adequate ventilation with partial air exhaust.

### 8.2 Respiratory Protection

Not required under normal use conditions. Wear a self-contained breathing filter mask if airborne concentration exceeds safe levels. Use a breathing apparatus in emergency rescue or evacuation situations.

### 8.3 Eyes Protection

Not required under normal use conditions. Wear protective glasses when handling a leaking or ruptured battery.

### 8.4 Skin and Body Protection

Not required under normal use conditions. Wear fireproof, gas-resistant clothing when handling a leaking or ruptured battery.

### 8.5 Hands Protection

Not required under normal use conditions. Wear chemically resistant rubber gloves.

### 8.6 Other Protections

Smoking, eating, and drinking are prohibited in the workplace. Maintain good hygiene practices.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

| Appearance | Solid | Smell | Odorless |
|---|---|---|---|
| Melting/freezing point | NA | pH value (indicate concentration) | NA |
| Relative vapor density (air =1) | ND | (initial) boiling point & boiling range | NA |
| Odor threshold | ND | Saturated vapor pressure | NA |
| Relative density (water =1) | ND | Evaporation rate | NA |
| Viscosity | NA | Flash point | NA |
| Ignition temperature | ND | Decomposition temperature | ND |
| Solubility in water | Insoluble | Upper explosion limit | ND |
| Flammability | ND | Lower explosion limit | ND |
| NA – Not Available | | ND – No Data | |

## SECTION 10 – STABILITY AND REACTIVITY

**Stability:** Stable under normal operation and storage conditions.

**Hazardous Polymerization:** Will not occur.

**Materials to avoid:** Water, strong acid or alkali solutions, oxidizing agents.

**Conditions to avoid:** fire or heating sources, disassembly, external short circuits, physical crushing or deformation, direct sunlight, high humidity, immersion in water, recharging or over-discharging.

**Hazardous decomposition products:** Metal oxides, carboxyl compound such as CO, CO2, etc.

## SECTION 11 – TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Threshold Limit Value (TLV):** | No Data |
| **Acute Toxicity:** | No Data |
| **Sub-acute and Chronic Toxicity:** | No Data |
| **Skin irritation or corrosion:** | No Data |
| **Eye irritation or corrosion:** | No Data |
| **Skin sensitization:** | No Data |
| **Respiratory sensitization:** | No Data |
| **Germ cell mutation:** | No Data |
| **Reproductive toxicity:** | No Data |
| **Specific target organ system toxicity:** | No Data |
| **Inhalation hazard:** | No Data |

## SECTION 12 - ECOLOGICAL INFORMATION

| | |
|---|---|
| **Acute aquatic toxicity:** | No Data |
| **Chronic aquatic toxicity:** | No Data |
| **Durability and degradability:** | No Data |
| **Potential bioaccumulation:** | No Data |
| **Migration in soils:** | No Data |
| **Other effects on the ecosphere:** | No Data |

## SECTION 13 - DISPOSAL CONSIDERATIONS

### Recommended Disposal Procedure

The battery should be fully discharged before disposal to prevent the risk of short circuit.

The battery contains recyclable materials and should be recycled in accordance with local regulations.

Refer to national or local regulations before disposal.

Disposal of the battery shall be conducted by licensed recycle companies in compliance with applicable national and local hazardous waste treatment and transportation regulations.

## SECTION 14 - TRANSPORT INFORMATION

### General packaging requirement

14.1 Cells or batteries shall be protected in a manner that prevents short circuits.

14.2 Cells, batteries, or related equipment shall be enclosed in appropriate, durable outer packaging to ensure safe transport.

14.3 If batteries are contained in equipment, the equipment must be secured to prevent movement within the outer packaging and must be packed to avoid accidental activation.

### UN numbers & Proper Shipping Name, if applicable

**UN 3090**_LITHIUM METAL BATTERIES

**UN 3091**_LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT

**UN 3091**_LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT

| No. | Hazard Class | Packaging Requirement | Packing Group |
|---|---|---|---|
| ☒ | **Air transportation, regulated by IATA-DGR 66th Edition (Effective January 1, 2025)** | | |
| (1) | Class 9 | UN Boxes | Packing Instruction 968, section IB/IA |
| (2) | Not restricted | Strong package | Packing Instruction 969, section II |
| (3) | Not restricted | Strong package | Packing Instruction 970, section II |
| ☒ | **Maritime transportation, regulated by IMO IMDG Code (Edition 42-24)** | | |
| (1) | Not restricted | Strong package | Packing Instruction SP188;<br>EmS No.: F-A, S-I; Not Marine pollutant |
| ☒ | **Road transportation, regulated by ADR-2025** | | |
| (1) | Not restricted | Strong package | Packing Instruction SP188 |
| ☒ | **Railway transportation, regulated by RID-2025** | | |
| (1) | Not restricted | Strong package | Packing Instruction SP188; |

### Battery Transportation

All lithium cells or batteries offered for transportation must be of the type proven to meet the criteria in Part III, sub-section 38.3 of the UN Manual of Tests and Criteria.

## SECTION 15 - REGULATORY INFORMATION

*Dangerous Goods Regulation (DGR)*

*Recommendations on the Transport of Dangerous Goods Model Regulations*

*International Air Transport Association (IATA-DGR)*

*International Maritime Dangerous Goods (IMDG)*

*Occupational Safety and Health Act (OSHA)*

*Toxic Substances Control Act (TSCA)*

*Code of Federal Regulations (CFR)*

*Technical Instructions for the Safe Transport of Dangerous Goods*

*California Proposition 65*

*Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)*

*Globally Harmonized System of Classification and Labeling of Chemicals (GHS)*

*Follow all procedures in accordance with applicable federal, state, and local laws.*

## SECTION 16 - ADDITIONAL INFORMATION

**Disclaimer:** The information provided above is believed to be accurate but is not intended to be comprehensive and should be used for guidance only. No warranty of merchantability, fitness for a particular purpose, or any other express or implied warranty is made with respect to this information. BIPOWER CORP assumes no liability arising from its use. Users are advised to conduct their own investigations to determine the suitability of this information for their specific needs. In no event shall we be liable for any claims, losses, or damages incurred by the users or any third parties, nor for any lost profits, special, indirect, consequential, or exemplary damages resulting from the use of this information.

**References:** OSHA 29 CFR 1910.1200(g) and Appendix D. These references and other information related to the revised Hazard Communication Standard can be found on OSHA's Hazard Communication Safety and Health Topics page.

ISO 11014:2009(E) Safety Data Sheet for chemical products - content and order sections.