

# MATERIAL SAFETY DATA SHEET

MSDS001

**Ultralife Batteries, Inc.**  
**2000 Technology Parkway**  
**Newark, NY 14513-2175**  
**CAGE Code: 0UU59**

**Emergency Telephone Number:**  
**Chemtrec for Spills, Leaks, Fires**  
**USA 1-800-424-9300**  
**International 703-527-3887**

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## SECTION I

## PRODUCT IDENTIFICATION

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**Product Name:** Ultralife Lithium Power Cell  
**Size:** U9VL/U9VL-FP (Lectro)  
**National Stock Number:** U9VL: 6135-01-369-9792  
U3VL: Not issued  
**Chemistry System:** Manganese Dioxide/Lithium Metal

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## SECTION II

## PRECAUTIONARY LABELING

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**Caution:** May leak and/or flame if opened, recharged, connected improperly, or disposed of in fire.

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## SECTION III

## HAZARDOUS COMPONENTS

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Chemical Name	CAS #	Exposure Limits	Percent of Content
Manganese Dioxide, MnO <sub>2</sub>	1313-13-9	None Listed	35.3 – 38.5
Lithium Metal, Li	7439-93-2	None Listed	2.7 – 3.7
Propylene Carbonate, C <sub>4</sub> H <sub>6</sub> O <sub>3</sub>	108-32-7	None Listed	8.6 – 10.7
1,3-Dioxolane, C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	646-06-0	None Listed	5.4 – 7.5
Lithium Hexafluoroarsenate, LiAsF <sub>6</sub>	29935-35-1	As: .01 mg/m <sup>3</sup>	2.1 – 3.2

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**Important Note:** The materials in this section may only represent a hazard if the integrity of the battery is compromised or if the battery is physically or electrically abused.

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## SECTION IV

## PHYSICAL AND CHEMICAL PROPERTIES

N/A

ULTRALIFE BATTERIES, INC.

MSDS001  
Rev.: G  
Date: 5/6/03

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**SECTION V****FIRE AND EXPLOSION DATA**

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**A. Extinguishing Media**

- Copious amounts of cold water is an effective extinguishing medium for lithium batteries. Do not use warm or hot water.
- Lith-X (Class D extinguishing media) is effective on fires involving only a few cells.
- Do not use CO<sub>2</sub> or Halon type extinguishing material.

**B. Fire Fighting Procedures**

- Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire.
- Full protective clothing is necessary.
- During water application, caution is advised as burning pieces of lithium may be ejected from the fire.

**C. Unusual Fire and Explosion Hazards**

- Batteries may flame or leak potentially hazardous organic vapors if exposed to excessive heat or fire.
- Fire or excessive heat may produce hazardous decomposition products.
- Damaged or opened batteries can result in rapid heating and the release of flammable vapors. Vapors are heavier than air and may travel along the ground or be moved by ventilation to an ignition source and flash back.

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**SECTION VI****STORAGE PRECAUTIONS**

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- Do not store batteries in a manner that allows terminals to short circuit.
- Store batteries in a cool (below 70°F), dry area that is subject to little temperature change.
- Do not place near heating equipment, nor expose to direct sunlight for long periods. Elevated temperatures can result in reduced battery service life.

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**SECTION VII****HANDLING/USE PRECAUTIONS**

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**A. Battery Charging**

- Batteries are not designed to be recharged. Charging a battery may result in electrolyte leakage and/ or cause the battery to flame.

**B. Battery Disassembly**

- Never disassemble a battery.
- Should a battery unintentionally be crushed, thus releasing its contents, rubber gloves must be used to handle all battery components. Avoid inhalation of any vapors that may be emitted.
- In the event of skin or eye exposure to the electrolyte, refer to Section VII, First Aid Information.

**C. Battery Short Circuit**

- More than a momentary short circuit will generally reduce the battery service life.
- Extended short circuiting creates high temperatures in the cell. High temperatures can cause burns in skin or cause the cell to flame.
- Avoid reversing battery polarity within the battery assembly. To do so may cause cell to flame or to leak.

**D. Exposure Limits**

<b>Component</b>	<b>Value</b>	<b>Unit</b>	<b>Type</b>	<b>Authority</b>
Manganese Dioxide (powder)	0.2	mg/m <sup>3</sup>	TLV	ACGIH
Lithium metal	No	Data	Available	
Electrolyte	No	Data	Available	

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**SECTION VIII****FIRST AID INFORMATION**

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**A. Electrolyte Contact**

- Skin- Immediately flush with plenty of water for at least 15 minutes. If symptoms are present after flushing, get medical attention.
- Eyes- Immediately flush with plenty of water for at least 15 minutes and get medical attention.

**B. Lithium Metal Contact**

- Skin- Remove particles of lithium from skin as rapidly as possible. Immediately flush with plenty of water for at least 15 minutes and get medical attention.
  - Eyes- Immediately flush with plenty of water for at least 15 minutes and get immediate medical attention.
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**SECTION IX****DISPOSAL PROCEDURES**

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- Batteries must be completely discharged prior to disposal and/ or the terminals must be taped or capped to prevent short circuit.
  - Disposal of large quantities of lithium power cells may be subject to Federal, State, or Local regulations.
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**SECTION X****TRANSPORTATION**

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- This battery has not been tested to Section 38.3 of 'UN Manual of Tests and Criteria'. The amount of Lithium contained in these batteries is below the limits set by the DOT in Section 49CFR173.185 and IATA A45. There is an exception to ship these with the following shipping label:

**LITHIUM BATTERIES**

Do not damage or mishandle this package  
If package is damaged, batteries must be  
quarantined, inspected and repacked.  
For emergency information, call CHEMTREC  
1-800-424-9300 North America  
1-703-527-3887 International

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**SECTION XI****OTHER INFORMATION**

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The information contained herein is furnished without warranty of any kind. Users should consider this data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.