MATERIAL SAFETY DATA SHEET

MSDS009

Ultralife Batteries, Inc.
2000 Technology Parkway
Newark, NY 14513-2175

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

SECTION I PRODUCT IDENTIFICATION

Product Name: Ultralife Lithium Power Cell
Size: U9VL and U3VL

Chemistry System: Manganese Dioxide/Lithium Metal

SECTION II PRECAUTIONARY LABELING

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

SECTION III HAZARDOUS COMPONENTS

	Approximate percent of total weight
Manganese Dioxide	12.0 – 15.0
Lithium Metal	2.0 – 3.0
Electrolyte containing:	
Organic solvents	13.0 – 15.0
Lithium Hexafluoroarsenate	2.0 – 3.0

SECTION IV FIRE AND EXPLOSION DATA

A. Extinguishing Media

- A copious amount 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_2 or Halon type extinguishing media.
- Dry Chemical type extinguishers have limited extinguishing potential.

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.

SECTION V STORAGE PRECAUTIONS

- Do not store batteries in a manner that allows terminals to short circuit.
- Store batteries in a cool (below 70^{o}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.

SECTION VI HANDLING/ USE PRECAUTIONS

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.

- The use of old and new batteries or batteries of varying sizes and types in the same battery assembly should be avoided. The batteries electrical characteristics and capabilities vary and damage may result to batteries or electrical equipment.

SECTION VII FIRST AID INFORMATION

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.

SECTION VIII DISPOSAL PROCEDURES

- 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.

SECTION IX TRANSPORTATION

- Shipment of the Ultralife Lithium Power Cell is governed by U.S. Department of Transportation 49 CFR 173.185 (i). Ultralife Lithium Power Cells are in compliance with this paragraph and therefore may be shipped as non-hazardous material.

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