

MATERIAL SAFETY DATA SHEET

MSDS048

**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 Li-Ion UBBL04

Size: 7.5v, with 6 Ahr of capacity at nominal voltage

Chemistry System: Lithium Cobalt Oxide

SECTION II

PRECAUTIONARY LABELING

Caution: Do not open or disassemble.

Do not expose to fire or open flame. Do not short circuit. Do not mix with batteries of varying sizes, chemistries or types. Do not puncture, deform, incinerate or heat above 85° C.

SECTION III

HAZARDOUS COMPONENTS

IMPORTANT NOTE: Do not expose contents to water.

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.

SECTION III**HAZARDOUS COMPONENTS (cont'd)**

	<u>Approximate percent of total weight</u>	<u>LD₅₀ (mg/kg) (oral-rat)</u>	<u>CAS #</u>
Aluminum Foil	0.1 – 1 w/w	N/AV	7429-90-5
Biphenyl (BP)	0.1 – 0.3 w/v	2400	92-52-4
Copper foil	0.1 – 1 w/w	3.5 (ipr-mouse)	7440-50-8
Linear and Cyclic Carbonate Solvents	2 – 26 w/w	~11000 (weighted average)	N/APP
Graphite, powder	10 – 40 w/w	440 (inv-mouse)	7440-44-0
Lithium Cobaltite (LiCoO ₂)	10 – 40 w/w	N/AV	12190-79-3
Lithium Hexafluorophosphate (LiPF ₆)	.5 – 7 w/w	1702	21324-40-3
Ploy (vinylidene fluoride) (PVDF)	0.1 – 1 w/w	N/AV	24937-79-9
Steel, nickel and inert polymer	Balance	N/APP	N/APP

SECTION IV**PHYSICAL AND CHEMICAL PROPERTIES**

A. N/A

SECTION V**FIRE AND EXPLOSION DATA**

A. Extinguishing Media

- Dry chemical type extinguishers or water are the most effective means to extinguish a cell or battery fire.

B. Fire Fighting Procedures

- Use a positive pressure self-contained breathing apparatus if cells or batteries are involved in a fire.
- Full protective clothing is necessary.

SECTION V**FIRE AND EXPLOSION DATA (cont'd)**

C. Unusual Fire and Explosion Hazards

- Cells or Batteries may flame or leak potentially hazardous organic vapors if exposed to excessive heat, fire or over voltage conditions. Fire, excessive heat or over voltage conditions may produce hazardous decomposition products. Damaged or opened cells or batteries can result in rapid heating and the release of flammable vapors.
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SECTION VI**STORAGE PRECAUTIONS**

- Do not store batteries in a manner that allows terminals to short circuit.
 - 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**

A. Battery Charging

- Cells and batteries are designed to be recharged. However, improperly charging a cell or battery may cause the cell or battery to flame. Use only approved chargers and procedures.

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.

C. Battery Short Circuit

- A battery is a source of energy. A short circuit can result in over heating of the terminals and provide an ignition source.
- More than a momentary short circuit will generally reduce the cell or battery service life and can lead to ignition of surrounding materials or materials within the cell or battery if the seal integrity is compromised.

SECTION VII**HANDLING/USE PRECAUTIONS (cont'd)**

- Extended short-circuiting creates high temperatures in the cell and at the terminals. Physical contact to high temperatures can cause skin burns. In addition, extended short-circuiting can cause the cell to flame.
- Avoid reversing cell polarity within a battery assembly. To do so may cause the cell or battery to flame or to emit gases.

D. Mixed Batteries and Types

- The use of old and new cells or cells of varying sizes; chemistries or types in the same battery assembly should be avoided. The cells' electrical characteristics and capabilities vary and damage may result to batteries or electrical equipment in which cells of different types, size or condition are combined in an electrical circuit.
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SECTION VIII**FIRST AID INFORMATION**

If materials from a ruptured or otherwise damaged cell or battery contact skin, flush immediately with water and wash affected area with soap and water. For eye contact, flush with copious amounts of water for 15 minutes and see physician at once. Avoid inhaling any vented gases. If irritation persists, seek medical assistance.

SECTION IX**DISPOSAL PROCEDURES**

Ultralife rechargeable lithium ion cells and batteries contain no toxic metals, only naturally occurring trace elements. Lithium Cells and batteries are exempted from hazardous waste disposal standards under the Universal Waste Regulations, therefore, it is advisable to consult with local, state or federal authorities as disposal regulations may vary dependent on location.

SECTION X**TRANSPORTATION**

- This cell and battery has been tested to Section 38.3 of 'UN Manual of Tests and Criteria' and has passed T1 through T8. The amount of Lithium contained in these batteries is below the limits set by the DOT in Section 49CFR173 and IATA. These can be shipped with the following label:

**LITHIUM ION or LITHIUM POLYMER
RECHARGEABLE BATTERIES**

(No Lithium Metal)

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

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.