



## PRODUCT SAFETY DATASHEET

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Lithium Batteries  
05/18/05

The information contained within is provided for your information only. This battery is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement for preparation of a material safety data sheet. The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, ENERGIZER BATTERY MANUFACTURING, INC., MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON IT.

### PRODUCT SAFETY DATA SHEET

**PRODUCT NAME:** ENERGIZER Battery

**Type No.:**

**Volts:** 3.0/cell

**TRADE NAME:** ENERGIZER, Lithium-Manganese Dioxide Battery

**Approximate Weight:**

**CHEMICAL SYSTEM:** Lithium-Manganese Dioxide

**Designed for Recharge:** No

#### **SECTION I - MANUFACTURER INFORMATION**

Manufactured for:  
ENERGIZER BATTERY MANUFACTURING, Inc.  
25225 Detroit Road  
Westlake, OH 44145

Telephone Numbers for Information:  
(440) 835-7368  
(800) 383-7323 (USA)

Date Prepared: May 18, 2005

#### **SECTION II - HAZARDOUS INGREDIENTS**

**IMPORTANT NOTE:** The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	%/wt.
Carbon Black (CAS# 1333-86-4)	3.5 mg/m <sup>3</sup> TWA	3.5 mg/m <sup>3</sup> TWA	0-1
1,2-Dimethoxyethane (CAS# 110-71-4)	None established	None established	0-6
1,3-Dioxolane (CAS# 646-06-0)	None established	None established	0-8
Graphite (CAS# 7782-42-5)	15 mg/m <sup>3</sup> TWA (total dust)  5 mg/m <sup>3</sup> TWA (respirable fraction)	2 mg/m <sup>3</sup> TWA (respirable fraction)	0-3
Lithium or Lithium Alloy (CAS# 7439-93-2)	None established	None established	1-6
Lithium Perchlorate (CAS# 7791-03-9)	None established	None established	0-3

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	%/wt.
Lithium Trifluoromethanesulfonate (CAS# 33454-82-9)	None established	None established	0-3
Lithium Trifluoromethanesulfonimide (CAS# 90076-65-6)	None established	None established	0-3
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m <sup>3</sup> Ceiling (as Mn)	0.2 mg/m <sup>3</sup> TWA (as Mn)	12-42
Propylene Carbonate (CAS# 108-32-7)	None established	None established	0-8

**SECTION III - FIRE AND EXPLOSION HAZARD DATA**

In case of fire where lithium batteries are present, apply a smothering agent such as METL-X, sand, dry ground dolomite, or soda ash, or flood the area with water. A smothering agent will extinguish burning lithium batteries. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended.

Fire fighters should wear self-contained breathing apparatus. Burning lithium-manganese dioxide batteries produce toxic and corrosive lithium hydroxide fumes.

**SECTION IV - HEALTH HAZARD DATA**

Under normal conditions of use, the battery is hermetically sealed.

**Ingestion:** Swallowing a battery can be harmful.

Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

If battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect, day or night.

**Inhalation:** Contents of an open battery can cause respiratory irritation. Provide fresh air and seek medical attention.

**Skin Absorption:** Dimethoxyethane, dioxolane, and lithium trifluoromethanesulfonate may be absorbed through the skin, causing localized inflammation.

**Skin Contact:** Contents of an open battery can cause skin irritation and/or chemical burns. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

**Eye Contact:** Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

**Note:** Carbon black is listed as a possible carcinogen by International Agency for Research on Cancer (IARC).

**SECTION V - PRECAUTIONS FOR SAFE HANDLING AND USE**

**Storage:** Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.

**Mechanical Containment:** Containment of this battery in a manner that obstructs or defeats the safety vent or electrical disconnect mechanisms designed into this battery can result in fire and/or explosion and cause personal injury and device damage. This battery is not designed to be potted, enclosed in hermetic overpackaging, or sealed by any means that prevents free operation of the designed safety mechanisms.

**Handling:** Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices.

If soldering or welding to the battery is required, consult your Eveready Battery Company representative for proper precautions to prevent seal damage or short circuit.

**Charging:** This battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

**Labeling:** If the Energizer label or package warnings are not visible, it is important to provide a package and/or device label stating:

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WARNING: FIRE, EXPLOSION, and BURN HAZARD. DO NOT OPEN BATTERY, DISPOSE OF IN FIRE, HEAT ABOVE 100°C (212°F), EXPOSE CONTENTS TO WATER, RECHARGE, PUT IN BACKWARDS, MIX WITH USED OR OTHER BATTERY TYPES - MAY EXPLODE OR LEAK AND CAUSE PERSONAL INJURY.

GENERAL EXCEPTION: At a minimum use Eveready label or package warnings.

SPECIFIC EXCEPTIONS: For the L522 battery only, the appropriate warning is:

WARNING: FIRE, EXPLOSION, and BURN HAZARD. DO NOT OPEN BATTERY, DISPOSE OF IN FIRE, HEAT ABOVE 75°C (167°F), EXPOSE CONTENTS TO WATER, RECHARGE, PUT IN BACKWARDS, MIX WITH USED OR OTHER BATTERY TYPES - MAY EXPLODE OR LEAK AND CAUSE PERSONAL INJURY.

Where accidental ingestion of small batteries is possible, the label and/or immediate packaging should also include:

WARNING: (1) KEEP AWAY FROM SMALL CHILDREN. IF SWALLOWED, PROMPTLY SEE DOCTOR; HAVE DOCTOR PHONE (202) 625-3333 COLLECT. In addition to the appropriate warning copy shown above.

Some photo lithium batteries use the following warning:

BATTERY CAN EXPLODE OR CAUSE BURNS IF DISSASSEMBLED, RECHARGED, OR EXPOSED TO WATER, FIRE, OR HIGH TEMPERATURE.

**Disposal:** Dispose in accordance with all applicable federal, state and local regulations.

### SECTION VI - SPECIAL PROTECTION INFORMATION

**Ventilation Requirements:** Not necessary under normal conditions.

**Respiratory Protection:** Not necessary under normal conditions.

**Eye Protection:** Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.

**Gloves:** Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery.

### SECTION VII - REGULATORY INFORMATION

In general, the transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment:

- For air shipments, meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations.
- Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185.
- With limited exceptions, the transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to December 15, 2004 Federal Register (Hazardous Materials; Prohibition on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule) for additional rules that became effective on December 29, 2004.

By complying with the requirements specified above, Lithium Batteries are not otherwise regulated as Dangerous Goods.

Lithium Batteries manufactured, packaged and shipped by Energizer Battery Manufacturing, Inc. meet the requirements specified above. Any Lithium Batteries subsequently repackaged or reshipped are required to meet all of the requirements specified above.

SARA/TITLE III – As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.