



## MATERIAL SAFETY DATA SHEET

1. We would like to inform our customers that these batteries are exempt articles and are not subject to the 29 CFR 1910.1200 OSHA requirement, or to the Canadian WHMIS requirements and the sheets are supplied as a service to you. For other MSDSs and related information, visit: <http://www.rayovac.com/customer/msds/msds.shtml>.  
**2. THESE BATTERIES MAY NOT BE SUITABLE FOR LANDFILL DISPOSAL (SEE SECTION 7).**

### 1. IDENTIFICATION

PRODUCT NAME: Lithium Manganese Dioxide Batteries

SIZES: All

EMERGENCY TELEPHONE NUMBER: 608-275-4859 or 800-424-9300 (24 hr, Chemtrec)

EDITION DATE: 02/25/2003

APPROVED BY: Timothy J. Anderson

### 2. INGREDIENTS

INGREDIENT NAME	CAS #	%	TLV*
Stainless Steel	--	40-50	--
Manganese Dioxide	1313-13-9	30-40	0.2mg/m <sup>3</sup> (Mn, TWA)
Dimethoxyether	110-71-4	4-8	None Established
Graphite	7782-42-5	1 - 3	2 mg/m <sup>3</sup> (TWA)
Teflon	--	1-2	None Established
Lithium Trifluoromethane Sulfonate	33454-82-9	< 1.5	None Established
Lithium	7439-93-2	1 - 4	None Established
Propylene Carbonate	108-32-7	2 - 6	None Established

\*Source: ACGIH Threshold Limit Values for Chemical Substances and Physical Agents, 2002.

### 3. PHYSICAL DATA

Boiling Point @ 760 mm Hg (°C):	NA
Vapor Pressure (mm Hg @ 25°C):	NA
Vapor Density (Air = 1):	NA
Density (grams/cc):	NA
Percent Volatile by Volume (%):	NA
Evaporation Rate (Butyl Acetate = 1):	NA
Physical State:	NA
Solubility in Water (% by Weight):	NA
pH:	NA
Appearance and Odor:	geometric solid object

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#### 4. FIRE & EXPLOSION HAZARD DATA

<u>FLASH POINT:</u>	NA	<u>LOWER (LEL):</u>	NA
<u>FLAMMABLE LIMITS IN AIR (%):</u>	NA	<u>UPPER (UEL):</u>	NA
<u>EXTINGUISHING MEDIA:</u>	Use water, foam or dry powder, as appropriate.		
<u>AUTO-IGNITION:</u>	NA		

SPECIAL FIRE FIGHTING PROCEDURES: As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products (See section 2).

SPECIAL FIRE EXPLOSION HAZARDS: Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.

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#### 5. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV) AND SOURCE: NA

EFFECTS OF OVEREXPOSURE: None. (In fire or rupture situation see section 2 and section 4)

EMERGENCY FIRST AID PROCEDURES:

***Skin and Eyes:***

In the event that battery ruptures, flush with copious quantities of flowing lukewarm water for a minimum of 15 minutes. Get immediate medical attention for eyes. Wash skin with soap and water.

***Swallowing:***

Ingestion of a battery can be harmful. Call The National Capital Poison Control Center (202-625-3333 – COLLECT) or your local Poison Control Center (800-222-1222), day or night - for advice and follow-up.

For more information, visit: <http://www.nema.org/batteriesehs>.

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#### 6. REACTIVITY DATA

<u>STABLE OR UNSTABLE:</u>	Stable
<u>INCOMPATIBILITY (MATERIALS TO AVOID):</u>	NA
<u>HAZARDOUS DECOMPOSITION PRODUCTS:</u>	NA
<u>DECOMPOSITION TEMPERATURE (0°F):</u>	NA
<u>HAZARDOUS POLYMERIZATION:</u>	Will Not Occur
<u>CONDITIONS TO AVOID:</u>	Avoid electrical shorting.

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## 7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS: In the event of a battery rupture, prevent skin contact and collect all released material in a plastic lined metal container.

REPORTING PROCEDURE: Report all spills in accordance with Federal, State and Local reporting requirements.

WASTE DISPOSAL METHOD: When completely discharged this type of Lithium cell is non-hazardous per USEPA Criteria. In the USA, Rayovac is not aware of specific Lithium battery regulations applicable to the individual consumer or to businesses for which their wastes are otherwise unregulated. For business who are already otherwise regulated as hazardous waste generators, Lithium batteries not fully discharged may be regulated as D003 reactive hazardous waste under 40 CFR 261. Registered hazardous waste generators should check with the USEPA or their state authorized agency for guidance. For a list of some waste Lithium treatment facilities, visit: [http://www.rayovac.com/about/environmental/e\\_faq2a.shtml](http://www.rayovac.com/about/environmental/e_faq2a.shtml).

For more information, visit: <http://www.nema.org/batteriesehs>.

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## 8. PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): NA

VENTILATION:

Local Exhaust:	NA
Mechanical (General):	NA
Special:	NA
Other:	NA

PROTECTIVE GLOVES: NA

EYE PROTECTION: NA

OTHER PROTECTIVE CLOTHING: NA

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## 9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE: Store in a dry place. Storing unpackaged cells together could result in cell shorting and heat build-up. Do not recharge. Do not puncture or abuse

TRANSPORTATION-SHIPPING: These are "batteries, dry" and are not considered to be a "hazardous material" per U.S. DOT (Dept. of Transportation) regulations or "dangerous goods" per IATA (International Air Transport Association) regulations. However, in order to qualify for this exemption, all Lithium batteries must comply with IATA and ICAO (International Civil Aviation Organization) special provisions, including A45, A88, A99, etc., and must pass UN (United Nations) testing. For specific details, please visit: [http://www.rayovac.com/about/environmental/e\\_faq6.shtml](http://www.rayovac.com/about/environmental/e_faq6.shtml).

For more information, visit: <http://www.nema.org/batteriesehs>

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## **10. SARA 313**

Notification is not required because these products are article(s) that do not release a covered toxic chemical under the normal conditions of processing or use.

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NOTICE: The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Rayovac Corporation makes no warranty expressed or implied.