



## 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.

### 1. IDENTIFICATION

PRODUCT NAME: Lithium Manganese Dioxide Batteries (CR)

SIZES: All

EMERGENCY TELEPHONE NUMBER: 800-424-9300 (24 hr, Chemtrec)

Environmental Health & Safety Information: 1-800-237-7000

EDITION DATE: 09-16-2011

APPROVED BY: Kevin J. Domack

### 2. INGREDIENTS

INGREDIENT NAME	CAS #	%	TLV*
Stainless Steel	--	40-50	--
Manganese Dioxide	1313-13-9	30-40	C5.0 (Mn, TWA)
Dimethoxyether	110-71-4	4-8	None Established
Graphite	7782-42-5	1 - 3	15 mppcf
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: OSHA 29 CFR 1910.1000 Table Z-1, 2 or 3 03-01-2010

### 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 reactive, 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 exposed skin 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.

***LITHIUM COIN CELL SAFETY NOTICE: Keep lithium coin batteries out of the reach of small children; coin cell batteries can be accidentally ingested. If ingested, these batteries may leak harmful contents causing chemical burns, perforation of soft tissue, and in severe cases may cause death. Lithium coin batteries must be removed immediately if swallowed. Seek medical attention immediately. If you or your doctor suspects that a battery has been ingested-for assistance in the US call the NATIONAL BATTERY INGESTION HOTLINE any time at (202) 625-3333; in Canada call 416-813-5900.***

For more information, visit: <http://www.nema.org/gov/ehs/committees/drybat/>.

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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: Comply with all federal, state and local regulations. For a list of some waste Lithium battery treatment facilities, visit: <http://www.nema.org/gov/ehs/committees/drybat/>.

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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 lithium metal batteries and cells, also known as primary or non-rechargeable lithium. These batteries, unless exempted, are regulated as Class 9, UN3090. Our batteries meet the requirements listed in the provisions and when in our original packaging meet the packing instructions noted below and may be classified as non-dangerous goods for transportation.

USDOT – See Special provision 188.

IMDG/Ocean – See Special provision 188.

ICAO/Air – See packing instruction 968. (Note for lithium metal batteries packed with equipment use packing instruction 969 instead and for lithium metal batteries packed in equipment use packing instruction 970.)

For further details to your shipping situation, please visit: <http://www.nema.org/gov/ehs/committees/drybat/>.

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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.