Product Safety Data Sheet (PSDS)

The battery products referenced in this PSDS document are consumer products. Batteries are considered "articles" under the Global Harmonized System and are exempted from the GHS labeling and SDS classification criteria. This PSDS document is provided as service in response to requests for information on battery use, safety and regulatory compliance.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: DURACELL LITHIUM MANGANESE DIOXIDE COIN CELLS
Product Identification: Lithium Manganese Dioxide Coin Cells – (lithium metal battery)
Duracell Designations: DL1216; DL1616; DL1620; DL1632; DL2016; DL2025; DL2032; DL2430; DL2450

Product Use: Energy Source
PSDS Date of Preparation: April 24, 2009 **Reaffirmed:** 4/08/2011; **Updated:** January 21, 2015
Document ID: Lithium Coin-NA
Company Identification

US Office

Duracell, a P&G business
Berkshire Corporate Park
14 Research Drive
Bethel, CT USA 06401
(203) 796-4000

Canadian Office

Duracell, a P&G business
4711Yonge Street
Toronto, Ontario
Canada M2N 6K8
(416) 730-4711

SECTION 2: HAZARDS IDENTIFICATION

Physical Appearance: Coin cells.

EMERGENCY OVERVIEW

CAUTION: For information on treatment, call the NATIONAL BUTTON BATTERY INGESTION HOTLINE collect, day or night, at (202) 625-3333. Ingestion may lead to serious injury or death. Battery can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Keep in original package until ready to use. Do not carry batteries loose in your pocket or purse. Keep batteries away from children. If swallowed, consult a physician at once. Under certain misuse conditions and by abusively opening the battery, exposed lithium can react with water or moisture in the air causing potential thermal burns or fire.

Potential Health Effects:

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

Eye Contact: Contact with battery contents may cause irritation.

Skin Contact: Contact with battery contents may cause irritation.

Inhalation: Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

Ingestion: Seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. Irritation to the internal/external mouth areas, may occur following exposure to a leaking battery.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Amount
Manganese Dioxide	1313-13-9	65-75%
Propylene Carbonate	108-32-7	10-15%
Lithium	7439-93-2	5-10%
Graphite, synthetic	7440-44-0	5-10%
1,2-Dimethoxyethane	110-71-4	1-10%
Lithium Perchlorate	7791-03-9	<1.5%

SECTION 4: FIRST AID MEASURES

Eye Contact: If battery is leaking and material contacts the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical attention.

Skin Contact: If battery is leaking and material contacts the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical attention.

Inhaled: If battery is leaking, contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical attention.

Swallowed: If battery is swallowed seek immediate medical advice. Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. If mouth area irritation or burning has occurred, rinse the mouth and surrounding area with tepid water for at least 15 minutes. Do not give ipecac.

Note to Physician: Published reports recommend removal from the esophagus be done endoscopically (under direct visualization). Batteries beyond the esophagus need not be retrieved unless there are signs of injury to the GI tract or a large diameter battery fails to pass the pylorus. If asymptomatic, follow-up x-rays are necessary only to confirm the passage of larger batteries. Confirmation by stool inspection is preferable under most circumstances. For information on treatment, telephone (202) 625-3333, collect day or night. Potential leakage of less than 50 milligrams of dimethoxyethane and propylene carbonate. Dimethoxyethane rapidly evaporates. Do not give ipecac.

SECTION 5: FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

Extinguishing Media: Use dry chemical, alcohol foam, water or carbon dioxide as appropriate for the surrounding fire. For incipient fires, carbon dioxide extinguishers are more effective than water.

Special Fire Fighting Procedures: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (batteries may explode in heat of fire).

Hazardous Combustion Products: Thermal degradation may produce hazardous fumes of lithium and manganese; oxides of carbon and other toxic by-products.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large spills. Irritating vapors and flammable vapors may be released from leaking or ruptured batteries. Eliminate all ignition sources. Evacuate the area and allow the vapors to dissipate. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase

ventilation. Carefully collect batteries and place in an appropriate container for disposal. Remove spilled liquid with absorbent and contain for disposal.

SECTION 7: HANDLING AND STORAGE

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, pyrolize or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Replace all batteries in equipment at the same time. Do not carry batteries loose in a pocket or bag.

Storage: Store batteries in a dry place at normal room temperature.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The following occupational exposure limits are provided for informational purposes. No exposure to the battery components should occur during normal consumer use.

Chemical Name	Exposure Limits
Manganese Dioxide	5 mg/m^3 Ceiling OSHA PEL 0.2 mg/m^3 TWA ACGIH TLV
Propylene Carbonate	2 mg/m^3 Ceiling ACGIH TLV
Lithium	None established
Graphite (synthetic non-fibrous))	5 mg/m^3 TWA (respirable dust), 15 mg/m3 TWA (total dust) OSHA PEL 2 mg/m^3 TWA (respirable dust) ACGIH TLV
1,2-Dimethoxyethane	None established.
Lithium Perchlorate	None established

Ventilation: No special ventilation is needed for normal use.

Respiratory Protection: None required for normal use.

Skin Protection: None required for normal use. Use butyl rubber gloves when handling leaking batteries.

Eye Protection: None required for normal use. Wear safety goggles when handling leaking batteries.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Coin cells.
Specific Gravity: Not applicable
Water Solubility: Insoluble
Vapor Pressure: Not applicable
Vapor Density: Not applicable
Boiling Point: Not applicable
Melting Point: Not applicable
Flash Point: 29°F (-2°C) (1,2-Dimethoxyethane)
Autoignition Point: Not applicable

SECTION 10: STABILITY AND REACTIVITY

Stability: This product is stable.

Incompatibility/Conditions to Avoid: Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, short circuit or recharge.

Hazardous Decomposition Products: Thermal decomposition may produce hazardous fumes of lithium and manganese; oxides of carbon and other toxic by-products.

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity Data:
Manganese Dioxide: LD50 oral rat >3478 mg/kg
Propylene Carbonate: LD50 oral rat 29100 uL/kg; LD50 dermal rabbit >20 mL/kg; LC50 inhalation rat >5 g/m3
1,2-Dimethoxyethane: LDLo oral rat 1000 mg/kg, LCLo inhalation rat 63 g/m^3/6 hr

Chronic Effects: The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. No chronic effects would be expected from handling a leaking battery.

Target Organs: Skin, eyes and respiratory system.

Carcinogenicity: None of the components of this product are listed as carcinogens by ACGIH, IARC, NTP or OSHA

SECTION 12: ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not expected to present an environmental hazard.

SECTION 13: DISPOSAL INFORMATION

Disposal should be in accordance with Federal, state/provincial and local regulations. Large quantities of open batteries should be treated as hazardous waste. Do not incinerate except for disposal in a controlled environment.

Some communities offer recycling or collection of batteries – contact your local government for disposal practices in your area
In California, packages that contain lithium manganese dioxide coin cells and the owner/operating instructions of products that contain lithium manganese dioxide coin cells must include the following statement: **"Perchlorate Material – Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate."**

SECTION 14: TRANSPORT INFORMATION

Emergency Phone Number:

CHEMTREC 24-Hour Emergency Response Hotline
+703-527-3887 (United States of America)

The information in this section is provided for informational purposes only.

DURACELL lithium metal batteries are produced and delivered in accordance with IATA 56th ICAO, IMO and US DOT Regulations. DURACELL lithium metal cells and batteries are not subject to the other provisions of the Dangerous Goods regulations as long as they are packaged and marked in accordance with the appropriate regulations.

All persons who prepare or offer lithium batteries for transport are required by regulation to be sufficiently trained and aware of all applicable regulations. Regulatory guidance for safe packaging requires that batteries be packaged in a manner that prevents short circuits, prevent battery movement within the package and that prevents spillage of contents.

DURACELL Primary Lithium Metal Batteries
UN3090 Primary lithium metal batteries **UN3091** Primary lithium metal batteries packed with or contained in equipment
UN 38.3 Transportation Tests : **DURACELL** certifies that all of its lithium batteries meet the requirements of the UN Manual of Tests and Criteria, Part III subsection 38.3 and the batteries were
US DOT: Special Provision 49CFR-173.185,
Air Transport IATA/ICAO: **Special Provisions** A88, A99, A154, A164, A183, A201 PI 968 – Lithium metal batteries only PI 969 – Lithium metal batteries packed with equipment PI 970 – Lithium metal batteries contained in equipment
Marine/Water Transport (IMDG): Special Provision 188, 230, 310, 957
ADR: Special Provisions: 188, 230, 310, 957
Air travelers should consult the US Department of Transportation (DOT) Safety Travel web site at http://safetravel.dot.gov for guidance regarding carry on of lithium batteries.

The gram weight of lithium metal in Duracell lithium metal cells & batteries is:

Catalog Number	Lithium Content grams	Total cell weight
DL 1616	.02 g	1.2g
DL 1620	.02 g	1.4g
DL 2016	.02 g	1.8g
DL 2032	.07 g	3.1g
DL 2430	.07 g	4.6g
DL 2450	.15 g	6.6g

SECTION 15: REGULATORY INFORMATION

United States

OSHA Status: While the finished product(s) is considered an article and not covered by the OSHA Hazard Communication Standard, 29 CFR 1910.1200, this PSDS contains valuable information critical to the safe handling and proper use of the product".

EPA TSCA Status: All intentionally-added components of this product are listed on the US TSCA Inventory.

SARA 313/302/304/311/312 chemicals: Manganese compounds 65-75%

California: This product has been evaluated and certain products require a warning labeling for perchlorate under California Proposition 65.

State Right-to-Know and CERCLA:
The following ingredients present in the finished product are listed on state right-to-know lists or state worker exposure lists

Ingredient	CAS #	Level	CERCLA RQ	State				
				IL	MA	NJ	PA	RI
Manganese Dioxide	1313-13-9	65-75%	None	Y	Y	N	Y	Y
Propylene Carbonate	108-32-7	10-15%	None	Y	Y	Y	Y	Y
Lithium	7439-93-2	5-10%	None	Y	Y	Y	Y	Y
Graphite	7782-42-5 7440-44-0	5-10%	None	Y	Y	N	Y	Y
1,2-Dimethoxyethane	110-71-4	1-10%	None	Y	Y	Y	Y	N
Lithium Perchlorate	7791-03-9	<1.5%	None	N	N	N	N	N

Canada All intentionally-added components of this product are listed on the Canadian DSL. This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products
Regulations (CPR) and this PSDS contains all information required by the Controlled Products Regulations.

SECTION 16: OTHER INFORMATION

P&G Hazard Rating: Health: 0 Fire: 0 Reactivity: 0

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Data supplied is for use only in connection with occupational safety and health.

DISCLAIMER: This PSDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered by P&G to be dependable and is accurate to the best of the Company's knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations.

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