

### 1. Substance/preparation and company name

Duracell Lithium Manganese Dioxide Batteries: DL2/3A, DL123A (3V); DL223A(6V); DL245(6V); DL323A, DLCR2(3V); CR-V3P (3V) and batteries comprised of DL2/3A cells.

**Company:**

Duracell Batteries Ltd.  
c/o Gillette U.K. Ltd.  
Great West Road  
Isleworth, Middlesex  
TW7 5NP  
UK

**Country contact numbers:**

Belgium: 02 711 9100  
Denmark: 33 26 9100  
Finland: 09 452 872  
France: 01 47 48 70 00  
Germany(CEW): 06173 3000

Italy: 02 66 7811  
Netherlands: 070 4131 700  
Norway: 022 884 250  
Spain: 091 387 9500  
Sweden: 08 568 40 400  
United Kingdom: 020 8560 1234

### 2. Composition/information on ingredients

<u>Chemical nature:</u>	<u>Wt. %</u>	<u>CAS No.</u>	<u>EEC No.</u>	<u>Index No.</u>	<u>Classification</u>
Manganese Dioxide	65-75	1313-13-9	215-202-6	025-001-00-3	Xn, R20/22
1,2-Dimethoxyethane	5-10	110-71-4	203-794-9	603-031-00-3	Xn; R10/19/20; S2/24/25
Propylene Carbonate	1-5	108-32-7	203-572-1	607-194-00-1	Xi; R36; S2
Lithium	1-5	7439-93-2	231-102-5	003-001-00-4	F; C; R14/15/34; S1/2

### 3. Possible hazards

**Critical hazards to man:** If battery leaking, exposure to harmful ingredients may occur.

**Critical hazards to the environment:** Not applicable

**Other Information:** Keep batteries away from small children.

### 4. First aid measures

**General advice:** These chemicals and metals are contained in a sealed can. For consumer use, adequate hazard warnings are included on both the package and on the battery. Potential for exposure should not exist unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused.

**If inhaled:** Not anticipated. Respiratory (and eye) irritation may occur if fumes are released due to heat or an abundance of leaking batteries. Remove to fresh air. Contact physician if irritation persists.

**On skin contact:** Not anticipated. Irritation may occur following exposure to a leaking battery. Irrigate exposed skin with copious amounts of clear, tepid water for at least 15 minutes. If irritation, injury or pain persists, consult a physician.

**On contact with eyes:** Not anticipated. Irritation may occur following exposure to a leaking battery. If battery is leaking and material contacts eyes, flush with copious amounts of clear, tepid water, for 30 minutes. Contact physician at once.

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#### 4. First aid measures (continued)

**On ingestion:** Not anticipated. Irritation to the internal/external mouth area may occur following exposure to a leaking battery. Rinse mouth and surrounding area with clear, tepid water for at least 15 minutes. Consult a physician immediately for treatment and to rule out involvement of the esophagus and other tissues.

**Notes to Physician:** 1) Potential leakage of 1,2-dimethoxyethane, propylene carbonate and lithium trifluoromethane sulfonate.  
2) 1,2-dimethoxyethane readily evaporates.  
3) 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 hazard.

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#### 5. Fire fighting measures

**Suitable extinguishing media:** As for surrounding area. Dry chemical, alcohol foam, water or carbon dioxide. For incipient fires, carbon dioxide extinguishers are more effective than water.

**Special protective equipment:** In fires involving large quantities of product, use self-contained breathing apparatus and full protective clothing.

**Further information:** Hazardous decomposition products may be produced. (Sec. 10).

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#### 6. Accidental release measures

**Personal precautions:** Notify safety personnel of large spills. Increase ventilation. Avoid eye or skin contact. **DO NOT** inhale vapours. Clean-up personnel should wear appropriate protective gear.

Remove spilled liquid with absorbent and contain for disposal.

**Environmental precautions:** Not applicable

**Methods for cleaning up:** Not applicable

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#### 7. Handling and storage

##### Handling

Avoid mechanical or electrical abuse. **DO NOT** short 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 pocket or bag.

##### Storage

Store at room temperature.

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#### 8. Exposure controls and personal protection

8-Hour TWAs: Manganese Dioxide (as Mn) - 5 mg/m<sup>3</sup> (U.K.), (Ceiling) (OSHA);  
0.2 mg/m<sup>3</sup> (ACGIH/Gillette)

1,2-Dimethoxyethane - 0.15 ppm (Gillette)

Carbon Black - 3.5 mg/m<sup>3</sup> (OSHA/ACGIH/U.K.); 7 mg/m<sup>3</sup> (STEL) (U.K.)

Lithium Trifluoromethane Sulfonate - 0.1 mg/m<sup>3</sup> (3M recommendation)

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## 8. Exposure controls and personal protection (continued)

### Personal protective equipment

**Respiratory equipment:** None required under normal use conditions.

**Hand protection:** None required under normal use conditions. Use butyl gloves when handling leaking batteries.

**Eye protection:** None required under normal use conditions. Wear safety glasses when handling leaking batteries.

**General safety and hygiene measures:** Use only as directed.

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## 9. Physical and chemical properties

**Form and Colour:** Small cylindrical batteries. Contents dark in colour.

**Odour:** Not applicable

### Change in physical state

**Melting point/melting range:** Not available

**Boiling point/boiling range:** Not available

**Flash point:** Not applicable

**Explosion limits:** Not available

**Ignition temperature:** Not available

**Vapour pressure:** Not available

**Specific Gravity:** Not available

**% Volatiles:** Not available

**Solubility in water:** Not applicable

**Solubility in other solvents:** Not applicable

**pH value:** Not applicable

**Octanol/water partition coefficient (log POW):** Not available

**Viscosity:** Not available

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## 10. Stability and reactivity

**Thermal decomposition:** Batteries may burst and release hazardous decomposition products when exposed to a fire situation.

**Substance(s) to avoid:** Strong oxidisers

**Hazardous reactions:** Contents incompatible with strong oxidising agents.

**Hazardous decomposition products:** Thermal degradation may produce hazardous fumes of manganese and lithium; hydrofluoric acid; oxides of carbon and other toxic

by-products.

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### 11. Toxicological information

Toxicity information is available on the toxic battery ingredients noted in Section 2, but, generally not applicable to intact batteries as used by consumers.

**Chronic Health Effects:** Not applicable to intact batteries.

### 12. Ecological information

None available regarding product.

### 13. Disposal considerations

**Product:** Dispose of in accordance with appropriate regulations. If in doubt contact your national Gillette office for information. Do not incinerate, since batteries may explode at excessive temperatures.

### 14. Transport information

**UN Number:** None  
**IMO Classification:** None  
**ADR Classification:** None  
**IATA Classification:** None

While lithium batteries are regulated by IATA and ICAO, the type of lithium batteries offered for sale by DURACELL are considered non-hazardous per provision A45 of the IATA Dangerous Goods Regulations and provision A45 of the ICAO Technical Instructions For The Safe Transport Of Dangerous Goods By Air. Per section A45 of the IATA and ICAO regulations, properly marked, labeled and packaged DURACELL consumer lithium batteries, which are of the solid cathode type, with less than 1g lithium per cell and less than 2g lithium per battery, are exempt from further regulation. When these batteries are separated to prevent short circuits and properly packaged in strong packaging (except when installed in electronic devices), they are acceptable for air transport as airfreight without any other restrictions. In addition, when installed in equipment or when no more than 24 cells or 12 batteries meeting the A45 provision are shipped, they are not subject to special packaging, marking, labeling or shipping documentation requirements. Thus, these batteries are not considered hazardous under the current regulations and are acceptable for air transport.

### 15. Regulatory information

**EC Labeling:** None  
**Risk Phrases:** None  
**Safety Phrases:** None

Labeling is not required because batteries are classified as "articles" under the Dangerous Preparations Directive and as such are exempt from the requirements of the Directive.

### 16. Other information:

#### Preparation of MSDS:

**Prepared by:** Gillette Environment Health and Safety  
37 A Street  
Needham, MA 02492 USA

**Phone Number:**  
781.292.8151

**Date:** 08/11/04

**Revision:** 8

**Replaces:** 2003.7E

The information contained in the Material Safety Data Sheet is based on data considered to be accurate, however, no warranty is expressed or implied regarding the accuracy of the data or the results to be obtained from the use thereof.