

## MATERIAL SAFETY DATA SHEET

### SECTION 1: PRODUCT IDENTIFICATION AND USE

**PRODUCT IDENTIFIER:** DURACELL ALKALINE and ULTRA ALKALINE BATTERIES

**PRODUCT USE:** Energy source

**Product Identification No. (PIN):** **Alkaline Manganese Dioxide Cells:** MN1300 (D); MN1400 (C); MN1500 (AA); MN2400 (AAA); MN908 and MN918 (Lantern); MN1604 (9V); MN21, MN27(12V); MN9100 (N); 5K69, 7K67 (J) (FlatPak) and batteries comprised of these cells.  
**Ultra Alkaline Manganese Dioxide Cells:** MX1300(D); MX1400 (C); MX1500 (AA); MX1604 (9V); MX2400 (AAA)

**Manufacturer's Name/Address**

Gillette Canada Company  
4 Robert Speck Parkway Suite 1000  
Mississauga, Ontario  
L4Z 4C5 Canada

**Supplier's Name/Address**

Not Applicable

**Emergency Phone Number:**

905.566.5000

**Emergency Phone Number:**

Not Applicable

### SECTION 2: HAZARDOUS INGREDIENTS\*

COMPOSITION (see footnotes)	Wt. %	CAS. NO.	LD50 OF INGREDIENT SPECIES AND ROUTE	LC50 OF INGREDIENT (SPECIES)
Manganese* (as Manganese Dioxide)	35-40	1313-13-9	(Mn) 9 g/kg rat, oral	(Mn)TCLo: 2300 µg/m <sup>3</sup> man inhal
Zinc	10-25	7440-66-6		
Potassium Hydroxide* (35%)	5-10	1310-58-3	273 mg/kg, rat, oral	50 mg/24 hour, skin, human, severe
Graphite, natural or synthetic	1-5	7782-42-5 or 7440-44-0		
See 'Footnotes' below				

### SECTION 3: PHYSICAL DATA1-5

<b>Boiling Point</b>	<b>Melting Point</b>	<b>Freezing Point</b>
Not available	Not available	Not available
<b>Specific Gravity</b>	<b>Vapor Density (air =1)</b>	<b>Vapour Pressure @ 20°C</b>
Not available	Not available	Not available
<b>Evaporation Rate</b>	<b>Coeff. Water/Oil Dist</b>	<b>Odour Threshold</b>
(Ether = 1) : Not available	Not available	Not available
<b>%Volatile (Vol)</b>	<b>Solubility in Water</b>	<b>PH</b>
Not available	Not available	Not available

**Physical State/Appearance/Odour:** Copper top battery. Contents dark in colour.

**Footnotes:** Please note: Some Duracell alkaline batteries contain the Duracell Power Check™ battery energy gauge, which is a small conductive strip located underneath the PVC battery label that indicates the amount of charge in the battery. It is composed of minute quantities of conductive materials. Due to the small quantity of materials and their solid form, a health or environmental risk is unlikely.

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SECTION 4: FIRE AND EXPLOSION DATA	
<b>Flammability:</b> Yes ____ No <u>X</u>	<b>If yes, under which conditions:</b>
<b>Flash Point and Test Methods:</b> Not applicable	<b>Autoignition Temp:</b> Not applicable
<b>Flammable Limits in Air:</b> (% by Volume)                      Lower <u>NA</u> %    Upper <u>NA</u> %	
<b>Fire Hazard:</b> Batteries may burst and release hazardous decomposition products when exposed to a fire situation.	<b>Extinguishing Media:</b> As appropriate for surrounding fire.
<b>Explosion Data:</b> <b>Sensitivity to Impact:</b> NA  <b>Sensitivity to Static Discharge:</b> NA	<b>Hazardous Combustion Products:</b> Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas; caustic vapours of potassium hydroxide and other toxic by-products.
<b>Firefighting Procedures:</b>  Use self-contained breathing apparatus and full protective gear, if large quantities are involved. Fight fire from a distance or protected area. Cool and use caution when handling fire-exposed containers (containers may rocket or explode in heat of fire).	
SECTION 5: REACTIVITY DATA	
<b>Stability</b> <input checked="" type="checkbox"/> stable <input type="checkbox"/> unstable	<b>Polymerization</b> <input type="checkbox"/> may occur <input checked="" type="checkbox"/> will not occur
<u>Conditions to Avoid</u> Do not heat, crush, disassemble, short circuit or recharge.	<u>Conditions to Avoid</u> Not applicable
<b>Incompatible Materials:</b> Strong oxidizers	
<b>Reactivity (Under what conditions):</b> Not applicable	
<b>Hazardous Decomposition Products:</b> Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas; caustic vapours of potassium hydroxide and other toxic by-products.	
SECTION 6: TOXICOLOGICAL PROPERTIES	
<b>Occupational Exposure Limits (PEL's, TLV's, etc.)</b> <b>8 Hour TWA's:</b> Manganese Dioxide (as Mn) - 5 mg/m <sup>3</sup> (Quebec); (Ceiling) (OSHA); 0.2 mg/m <sup>3</sup> (ACGIH/Gillette) Potassium Hydroxide - 2 mg/m <sup>3</sup> (Ceiling) (ACGIH/Quebec) Graphite (all kinds except fibrous) - 2 mg/m <sup>3</sup> (ACGIH); (synthetic) - 15 mg/m <sup>3</sup> (total, OSHA); 5 mg/m <sup>3</sup> (respirable, OSHA) (natural) - 15 mppcf (Quebec)	
These levels are not anticipated under foreseeable use conditions.	
<b>Warning Signals:</b> Not applicable	

(SECTION 6 CONTINUED ON NEXT PAGE)

## SECTION 6: TOXICOLOGICAL PROPERTIES (CONTINUED)

### Route of Entry/Acute/Chronic Effects of Exposure

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. Contains concentrated (35%) potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size.

**Inhalation:** Respiratory (and eye) irritation may occur if fumes are released due to heat or an abundance of leaking batteries.

**Ingestion:** Not anticipated due to size of batteries; choking may occur with the smaller AAA battery. Irritation, including caustic burns/injury, may occur following exposure to a leaking battery.

**Skin:**

**Contact:** Irritation, including caustic burns/injury, may occur following exposure to a leaking battery.

**Absorption:** Not anticipated.

**Eye Contact:** Irritation, including caustic burns/injury, may occur following exposure to a leaking battery.

**Other:** Not applicable

## SECTION 7: PREVENTIVE MEASURES

### Personal Protective Equipment:

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

**Skin Protection: (gloves, footwear, clothing)** None under normal use conditions. Use Neoprene, rubber or nitrile gloves when handling leaking batteries.

**Respiratory Protection:** None under normal use conditions.

**Other:** Product is non-hazardous when used as directed. Keep batteries away from small children.

**Engineering Controls:** General ventilation under normal use conditions.

**Handling and Storage:** Store at room temperature. 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. Do not mix battery systems, such as alkaline and zinc carbon, in the same equipment. Replace all batteries in equipment at the same time. Do not carry batteries loose in pocket or bag. Do not remove battery tester or battery label.

**Normal Clean Up:** Not applicable

(SECTION 7 CONTINUED ON NEXT PAGE)

## SECTION 7: PREVENTIVE MEASURES (CONTINUED)

### Steps to be taken if material is released to the environment or spilled in the work area:

Notify safety personnel of large spills. Caustic potassium hydroxide may be released from leaking or ruptured batteries. Avoid eye or skin contact and inhalation of vapours. Increase ventilation. Clean-up personnel should wear appropriate protective gear.

**Waste Disposal Methods:** Individual consumers may dispose of spent (used) batteries with household trash. Duracell does not recommend that spent batteries be accumulated (quantities of five gallons or more should be disposed of in a secure landfill); in accordance with appropriate federal, provincial and local regulations. Do not incinerate, since batteries may explode at excessive temperatures. These batteries pass the U. S. EPA's Toxicity Characteristic Leaching Procedure and therefore, may be disposed of with normal waste.

### Special Shipping Information:

Please note: These batteries are not regulated by U. S. DOT or international agencies as hazardous materials or dangerous goods when shipped. Duracell uses the article name 'Alkaline Batteries - Non-hazardous' on all domestic and international bills of lading.

## SECTION 8: FIRST AID MEASURES

### Eyes:

Not anticipated. If battery is leaking and material contacts eyes, flush with copious amounts of clear, tepid water for 30 minutes. Contact physician at once.

### Skin:

Not anticipated. If battery is leaking, irrigate exposed skin with copious amounts of clear, tepid water for at least 15 minutes. If irritation, injury or pain persists, consult a physician.

### Inhalation:

Not anticipated. If battery is leaking, contents may be irritating to respiratory passages. Remove to fresh air. Contact physician if irritation persists.

### Ingestion:

Not anticipated. 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) The primary acutely toxic ingredient is concentrated (35%) potassium hydroxide.
- 2) Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size.
- 3) This MSDS does not include or address the small button cell batteries, which can be ingested.

## SECTION 9: PREPARATION DATE OF MSDS

<b>Prepared by:</b>  <b>Gillette Environment, Health and Safety</b>	<b>Phone Number:</b>  781.292.8151	<b>Date:</b> 11/20/2006  <b>Revision:</b> 9  <b>Replaces:</b> 2002.8C
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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.