



**MATERIAL SAFETY DATA SHEET** (according to 93/112/EEC)

Product: DURACELL ALKALINE BATTERIES and ULTRA ALKALINE BATTERIES

Date / revised: 28/05/99

Page 1 of 4

GMEL # 1508E

Revision: 1

**1. Substance/preparation and company name**

Duracell Alkaline Batteries: Alkaline Manganese Dioxide Cells - MN1203; MN1300 (D); MN1400 (C); MN1500 (AA); MN2400 (AAA); MN908 and MN918 (Lantern); MN1604 (9V); MN21(12V); MN9100 (N) and batteries comprised of these cells.  
Duracell Ultra Alkaline Batteries: Alkaline Manganese Dioxide Cells - MX1500 (AA); MX2400 (AAA)

**Company:**

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

**Country contact numbers:**

Austria: 02236 645240  
Belgium: 02 711 9102  
Denmark: 33 26 9100  
Finland: 09 452 8737  
France: 01 47 48 70 00  
Germany: 02 21 59670  
Italy: 02 66 7811

Netherlands: 070 4131 800  
Norway: 022 72 8810  
Portugal: 011 7210950  
Spain: 091 387 9600  
Sweden: 08 6292700  
Switzerland: 017 55 62 42  
United Kingdom: 0181 560 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	35-40	1313-13-9	215-202-6	025-001-00-3	Xn, R20/22
Zinc	10-15	7440-66-6	231-175-3	030-002-00-7	F; R-15; R-17
Potassium Hydroxide (35%)	5-10	1310-58-3	215-181-3	019-002-00-8	C; R35

\*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.

**3. Possible hazards**

**Critical hazards to man:** If battery leaking, exposure to caustic 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. Contains concentrated (35%) potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size. A similar amount of zinc/zinc oxide may also leak.

**If inhaled:** 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:** Irritation, including caustic burns/injury, 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:** Irritation, including caustic burns/injury, 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.

**MATERIAL SAFETY DATA SHEET** (according to 93/112/EEC)

Product: DURACELL ALKALINE BATTERIES and ULTRA ALKALINE BATTERIES

Date / revised: 28/05/99

Page 2 of 4

GMEL #1508E

Revision: 1

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

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

**5. Fire fighting measures**

**Suitable extinguishing media:** As appropriate for adjacent fire.

**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).

**6. Accidental release measures**

**Personal precautions:** 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.

**Environmental precautions:** Not applicable

**Methods for cleaning up:** Not applicable

**7. Handling and storage****Handling**

Avoid mechanical or electrical abuse. **DO NOT** short or install incorrectly. Batteries may explode, pyrolyze 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.

**Storage**

Store at room temperature.

**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/Duracell)

Potassium Hydroxide - 2 mg/m<sup>3</sup> (Ceiling) (ACGIH); 2 mg/m<sup>3</sup> (STEL) (U.K.)

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, U.K./OSHA)

Zinc Oxide (dust) - 10 mg/m<sup>3</sup> (ACGIH), 15 mg/m<sup>3</sup> (total, OSHA); 5 mg/m<sup>3</sup> (respirable, OSHA)

These levels are not anticipated under normal consumer use conditions.

**MATERIAL SAFETY DATA SHEET** (according to 93/112/EEC)

Product: DURACELL ALKALINE BATTERIES and ULTRA ALKALINE BATTERIES

Date / revised: 28/05/99

Page 3 of 4

GMEL #1508E

Revision: 1

**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 neoprene, rubber or nitrile 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.

**9. Physical and chemical properties**

Form and Colour: Copper top battery. 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 applicable

% Volatiles: Not available

Solubility in water: Not applicable

Solubility in other solvents: Not applicable

pH value: Not available

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

Viscosity: Not available

**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 zinc and manganese; hydrogen gas; caustic vapours of potassium hydroxide and other toxic by-products.

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.

**MATERIAL SAFETY DATA SHEET** (according to 93/112/EEC)

Product: DURACELL PROCELL PROFESSIONAL ALKALINE BATTERIES

Date / revised: 28/05/99

Page 1 of 4

GMEL # 1506E

Revision: 1

**1. Substance/preparation and company name**

**Duracell Procell Professional Alkaline Batteries: Procell Alkaline Manganese Dioxide Batteries:  
PC926; PC918; PC915; PC908 (6V Batteries)**

**Company:**

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

**Country contact numbers:**

Austria: 02236 645240  
Belgium: 02 711 9102  
Denmark: 33 26 9100  
Finland: 09 452 8737  
France: 01 47 48 70 00  
Germany: 02 21 59670  
Italy: 02 66 7811

Netherlands: 070 4131 800  
Norway: 022 72 8810  
Portugal: 011 7210950  
Spain: 091 387 9600  
Sweden: 08 6292700  
Switzerland: 017 55 62 42  
United Kingdom: 0181 560 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	35-40	1313-13-9	215-202-6	025-001-00-3	Xn, R20/22
Zinc	10-15	7440-66-6	231-175-3	030-002-00-7	F; R-15; R-17
Potassium Hydroxide	5-10	1310-58-3	215-181-3	019-002-00-8	C; R35

**3. Possible hazards**

**Critical hazards to man:** If battery leaking, exposure to caustic 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. Contains concentrated (~35%) potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 ml, depending on battery size. A similar amount of zinc/zinc oxide may also leak.

**If inhaled:** 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:** Irritation, including caustic burns/injury, 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:** Irritation, including caustic burns/injury, 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.

**MATERIAL SAFETY DATA SHEET** (according to 93/112/EEC)

Product: DURACELL PROCELL PROFESSIONAL ALKALINE BATTERIES

Date / revised: 28/05/99

Page 2 of 4

GMEL #1506E

Revision: 1

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

On ingestion: Not anticipated due to size of batteries. Irritation, including caustic burns/injury, may occur following exposure to a leaking battery. Rinse the 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: The primary acutely toxic ingredient is concentrated (35%) potassium hydroxide. Anticipated potential leakage of potassium hydroxide is 2-20 ml, depending on battery size. This MSDS does not include or address the small button cell batteries, which can be ingested.

**5. Fire fighting measures**

Suitable extinguishing media: As appropriate for adjacent fire.

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).

**6. Accidental release measures**

Personal precautions: 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.

Environmental precautions: Not applicable

Methods for cleaning up: Not applicable

**7. Handling and storage****Handling**

Avoid mechanical or electrical abuse. **DO NOT** short or install incorrectly. Batteries may explode, pyrolyze 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.

**Storage**

Store at room temperature.

**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/Duracell)

Potassium Hydroxide - 2 mg/m<sup>3</sup> (Ceiling) (ACGIH); 2 mg/m<sup>3</sup> (STEL) (U.K.)

Graphite (all kinds except fibrous) - 2 mg/m<sup>3</sup> (ACGIH); (synthetic) - 15 mg/m<sup>3</sup> (total, OSHA);  
10 mg/m<sup>3</sup> (total, Quebec); 5 mg/m<sup>3</sup> (respirable, U.K./OSHA);

Zinc Oxide (dust) - 10 mg/m<sup>3</sup> (ACGIH), 15 mg/m<sup>3</sup> (total, OSHA); 5 mg/m<sup>3</sup> (respirable, OSHA)

These levels are not anticipated under normal consumer use conditions.

**MATERIAL SAFETY DATA SHEET** (according to 93/112/EEC)

Product: DURACELL PROCELL PROFESSIONAL ALKALINE BATTERIES

Date / revised: 28/05/99

Page 3 of 4

GMEL #1506E

Revision: 1

**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 neoprene, rubber or nitrile 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.**9. Physical and chemical properties****Form and Colour:** Copper top battery. 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 available**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 available**Octanol/water partition coefficient (log POW):** Not available**Viscosity:** Not available**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 zinc and manganese; hydrogen gas; caustic vapours of potassium hydroxide and other toxic by-products.

**11. Toxicological information**

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

Chronic Health Effects: Not applicable to intact batteries.

**12. Ecological information**

None available regarding product.

**13. Disposal considerations**

Product: Dispose 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

These batteries are not regulated by U. S. DOT or international agencies as hazardous materials or dangerous goods when shipped. A shipping name of 'Alkaline Batteries - Non-hazardous' may be used on all domestic and international bills of lading.

**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 Medical Evaluation Laboratories    Phone Number:  
37 A Street    781.292.8000  
Needham, MA 02494 USA

Date: 28/05/99  
Revision: 1  
Replaces: 1352E

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.