Gillette Medical Evaluation Laboratories

Duracell Ultra Alkaline Batteries

Manufacturer MSDS Number: 1881

SECTION 1 : Chemical Product and Company Identification

MSDS Name: Duracell Ultra Alkaline Batteries
Manufacturer Name:Gillette Medical Evaluation Laboratories
Address:

37 A Street
Needham, MA 02492

Business Phone:781.292.8151
For information in North America, call: 781.292.8151
Manufacturer MSDS Revision Date:

3/4/2001
Rev: 3

Synonyms:

Alkaline Manganese Dioxide
Cell: MX1300 (D); MX1400 (C); MX1604 (9V);
MX1500 (AA); MX2400 (AAA);
MX2500 (AAAA)

CAS Number: Not applicable
Chemical Formula: Mixture
Molecular Weight: NOT AVAILABLE

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SECTION 2 : Hazardous Ingredients/Identity Information

Chemical Name Manganese Dioxide	**CAS#** 1313-13-9	**Percent** 35-40	
Chemical Name Zinc	**CAS#** 7440-66-6	**Percent** 10-15	
Chemical Name Potassium Hydroxide (35%)	**CAS#** 1310-58-3	**Percent** 5-10	
Chemical Name Graphite, natural or synthetic	**CAS#** 7782-42-5 or 7440-44-0	**Percent** 1-5	
Chemical Name Zinc Oxide	**CAS#** 1314-13-2	**Percent** < 1	

* IF MULTIPLE INGREDIENTS, INCLUDE CAS NUMBERS FOR EACH

See 'Footnotes' below

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SECTION 3 : Physical And Chemical Characteristics

Physical State/Appearance:

Copper top battery.

Color:

Contents dark in color.

pH:

NOT AVAILABLE

Vapor Pressure:

@ (deg F): NOT AVAILABLE mm Hg

Vapor Density:

(Air=1): NOT AVAILABLE

Boiling Point:
NOT AVAILABLE (deg F), NOT AVAILABLE (deg C)

Freezing Point:
NOT AVAILABLE (deg F), NOT AVAILABLE (deg C)

Melting Point:
NOT AVAILABLE (deg F), NOT AVAILABLE (deg C)

Solubility:
(In Water): NOT AVAILABLE

Specific Gravity:
(H2O=1): NOT AVAILABLE

Evaporation Point:
(Ether=1): NOT AVAILABLE

Saturated Vapor Concentration:
(By volume@ deg F): NOT AVAILABLE

Percent Volatile:
NOT AVAILABLE

FlashPoint:
NOT AVAILABLE

Auto Ignition Temp:
Deg F/Deg C: NOT AVAILABLE

Upper Flammable Explosive Limit:
In Air (% by volume): NOT AVAILABLE

Lower Flammable Explosive Limit:
In Air (% by volume): NOT AVAILABLE

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SECTION 4 : Fire And Explosion Hazards

Fire:
Fire and Explosion Hazard:
Batteries may burst and release hazardous decomposition products when exposed to a fire situation. See Sec. 10.

Flash Point:
NOT AVAILABLE

Flash Point Method:
NOT AVAILABLE

Upper Flammable or Explosive Limit: In Air (% by volume): NOT AVAILABLE

Lower Flammable or Explosive Limit: In Air (% by volume): NOT AVAILABLE

Auto Ignition Temperature: Deg F/Deg C: NOT AVAILABLE

Extinguishing Media:
As appropriate for surrounding area.

Fire Fighting Instructions:
Use self-contained breathing apparatus and full protective gear.

Hazardous Decomposition Byproducts:
Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas; caustic vapors of potassium hydroxide and other toxic by-products.

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SECTION 5 : Health Hazards

Applies to All Ingredients:

Route of Exposure:
Inhalation, Ingestion, Skin, Eye Contact

Potential Health Effects:
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 1 to 3 ml, depending on battery size. A similar amount of zinc/zinc oxide may also leak.

Eye Contact:

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.

Skin Absorption:

Not anticipated.

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.

Other Potential Health Effects:

Not applicable

Warning Signals: Not applicable

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SECTION 6 : Emergency And First Aid Procedures

Eye Contact:

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 Contact:

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 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.

Note to Physicians:

1) The primary acutely toxic ingredient is concentrated (35%) potassium hydroxide.
2) Anticipated potential leakage of potassium hydroxide is 1-3 ml, depending on battery size.
3) This MSDS does not include or address the small button cell batteries, which can be ingested.

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SECTION 7 : Reactivity Data

Chemical Stability:

Stable

Conditions to Avoid:

Do not heat, crush, disassemble, short circuit or recharge.

Incompatibilities with Other Materials:

Contents incompatible with strong oxidizing agents.

Hazardous Polymerization:

Will not occur

Conditions to Avoid: Not applicable

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SECTION 8 : Precautions For Safe Handling

Spill Cleanup Measures:

Not applicable

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 vapors. Increase ventilation. Clean-up personnel should wear appropriate protective gear.

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. 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.

Environmental Fate:

These batteries pass the U. S. EPA's Toxicity Characteristic Leaching Procedure and therefore, may be disposed of with normal waste.

Waste Disposal:

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, state and local regulations. Do not incinerate, since batteries may explode at excessive temperatures.

DOT Shipping Name:

Not applicable

DOT Hazard Class: Not applicable

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.

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SECTION 9 : Control Measures

Engineering Controls:

General ventilation under normal use conditions.

Skin Protection Description:

None under normal use conditions. Use neoprene, rubber or latex gloves when handling leaking batteries.

Eye/Face Protection:

None under normal use conditions. Wear safety glasses when handling leaking batteries.

Respiratory Protection:

None under normal use conditions.

Other Protective:

Keep batteries away from small children.

Exposure Limits:

Occupational Exposure Limits PEL's, TLV's, etc.):
8-Hour TWAs:
Manganese Dioxide (as Mn) - 5 mg/m3 (Ceiling) (OSHA); 0.2 mg/m3 (ACGIH/Duracell)

Potassium Hydroxide - 2 mg/m3 (Ceiling) (ACGIH)

Graphite (all kinds except fibrous) - 2 mg/m3 (ACGIH); (synthetic) - 15 mg/m3 (total, OSHA); 5 mg/m3 (respirable, OSHA)

Zinc Oxide (dust) - 10 mg/m3 (ACGIH), 15 mg/m3 (total, OSHA); 5 mg/m3 (respirable, OSHA)

These levels are not anticipated under normal consumer use conditions.

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SECTION 10 : Other Information

Applies to all ingredients:

TSCA 8(b): Inventory Status

All ingredients listed in TSCA inventory.

MSDS Revision Date:

3/4/2001
Rev: 3

Replaces #1878, change of MSDS date only.

Disclaimer:

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.

Abbreviation:
NA=NOT AVAILABLE

Footnotes:
Please note: Some Duracell alkaline batteries contain the Duracell Power Check TM 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.

MSDS-4 (8/95)