

## MATERIAL SAFETY DATA SHEET

**NAME:** ULTRA MAX ALKALINE BATTERIES

**CAS NO:** Not applicable

**Effective Date:** 11/1/2011 **Rev:** V1L11

### A. — IDENTIFICATION

Manganese Dioxide (1313-13-9) Zinc (7440-66-6) Potassium Hydroxide (35%) (1310-58-3) Graphite, natural (7782-42-5) or synthetic (7440-44-0) Zinc Oxide (1314-13-2)  See 'Footnotes' below	%	Formula: Mixture
	35-40	Molecular Weight: NA
	10-15	Synonyms: Alkaline Manganese Dioxide Cell: LR20 (D); LR14 (C); 6LR61 (9V); LR6 (AA); LR03 (AAA);
	5-10	
1-5		
<1		

### B. — PHYSICAL DATA

Boiling Point NA °F NA °C	Melting Point NA °F NA °C	Freezing Point NA °F NA °C
Specific Gravity (H <sub>2</sub> O=1) NA	Vapor Density (air=1) NA	Vapor Pressure @ _____ °F NA mm Hg
Evaporation ( _____ Ether =1) NA	Saturation in Air (by volume@ _____ °F) NA	Autoignition Temperature _____ °F _____ °C NA
% Volatiles NA	Solubility in Water NA	pH NA

Appearance/Color Contents dark in color.

Flash Point and Test Method(s) Not applicable

Flammable Limits in Air (% by volume) Lower NA % Upper NA %

### C. — REACTIVITY

Stability	<input checked="" type="checkbox"/> stable	<input type="checkbox"/> Unstable	Polymerization	<input type="checkbox"/> may occur	<input checked="" type="checkbox"/> will not occur
Conditions to Avoid Do not heat, crush, disassemble, short circuit or recharge.			Conditions to Avoid Not applicable		
Incompatible Materials Contents incompatible with strong oxidizing agents.			Hazardous Decomposition Products Thermal degradation may produce hazardous fumes of zinc and manganese; hydrogen gas; caustic vapors of potassium hydroxide and other toxic by-products.		

**\* IF MULTIPLE INGREDIENTS, INCLUDE CAS NUMBERS FOR EACH NA=NOT AVAILABLE**

## D. — HEALTH HAZARD DATA

Occupational Exposure Limits PEL's, TLV's, etc.)

8-Hour TWAs: Manganese Dioxide (as Mn) - 5 mg/m<sup>3</sup> (Ceiling) (OSHA); 0.2 mg/m<sup>3</sup> (ACGIH/Ultra Max)  
Potassium Hydroxide - 2 mg/m<sup>3</sup> (Ceiling) (ACGIH)  
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)  
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.

Warning Signals

Not applicable

Routes/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.

1. Inhalation      Respiratory (and eye) irritation may occur if fumes are released due to heat or an abundance of leaking batteries.
2. 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.
3. Skin  
    a. Contact  
    Irritation, including caustic burns/injury, may occur following exposure to a leaking battery.  
  
    b. Absorption  
    Not anticipated.
4. Eye Contact    Irritation, including caustic burns/injury, may occur following exposure to a leaking battery.
5. Other            Not applicable

## E. — ENVIRONMENTAL IMPACT

1. Applicable Regulations    All ingredients listed in TSCA inventory.
2. DOT Hazard Class -        Not applicable
3. DOT Shipping Name -      Not applicable  
    Please note: These batteries are not regulated by U. S. DOT or international agencies as hazardous materials or dangerous goods when shipped. Ultra Max uses the article name 'Alkaline Batteries - Non-hazardous' on all domestic and international bills of lading.

Environmental Effects

These batteries requires recycling at the end of their life through the correct recycling channels.

## F. — EXPOSURE CONTROL METHODS

### Engineering Controls

General ventilation under normal use conditions.

### Eye Protection

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

### Skin Protection

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

### Respiratory Protection

None under normal use conditions.

### Other

Keep batteries away from small children.

## G. — WORK PRACTICES

### Handling and Storage

Store at room temperature. 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.

### Normal Clean Up

Not applicable

### Waste Disposal Methods

Individual consumers may dispose of spent (used) batteries with household trash. Ultra Max does not recommend that spent batteries be accumulated and they should be disposed off through appropriate battery recycling channels. In accordance with appropriate federal, state and local regulations.

Do not incinerate, since batteries may explode at excessive temperatures.

## H. — EMERGENCY PROCEDURES

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.

### Fire and Explosion Hazard

Batteries may burst and release hazardous decomposition products when exposed to a fire situation. See Sec. C.

### Extinguishing Media

As appropriate for surrounding area.

### Firefighting Procedures

Use self-contained breathing apparatus and full protective gear.

## I. — FIRST AID AND MEDICAL EMERGENCY PROCEDURES

### 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 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

- 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.

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.