

# DURACELL ALKALINE AND ULTRA ALKALINE BATTERIES

## Chemwatch Material Safety Data Sheet

Issue Date: 8-Jun-2007

CC317ECP

CHEMWATCH 8143-60

Version No:4

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

DURACELL ALKALINE AND ULTRA ALKALINE BATTERIES

### SYNONYMS

"Manufacturer's Code: MN1300 (D); MN1400 (C); MN1500(AA); MN2400 (AAA); MN2500", "(AAAA); MN908 (Mallory, Lantern 6V); MN918 (Mallory, Lantern 4.5V); MN1203", "(Lantern, 4.5V); MN1604 (9V); MN21 (12V); MN9100 (N)", "Ultra: MX1300 (D); MX1400 (C); MX1500 (AA); MX1604 (9V); MX2400 (AAA)", "9 volt battery"

### PRODUCT USE

Energy source. NOTE: Hazard statement relates to battery contents. Potential for exposure should not exist unless the battery leaks, is exposed to high temperatures or is mechanically, physically or electrically abused.

### SUPPLIER

Company: Procter & Gamble  
Address:  
Unit 3, 62 Paul Matthews Road  
Albany  
Auckland,  
NZL  
Telephone: 0800 441 058

Company: Procter & Gamble  
Address:  
Levels 3 & 4, 1 Innovation Road  
Macquarie Park  
NSW, 2113  
AUS  
Telephone: +61 1800 028 280  
Emergency Tel: +61 1800 039 008  
Emergency Tel: +61 3 9573 3112  
Fax: +61 2 8864 5365

## Section 2 - HAZARDS IDENTIFICATION

### STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

### POISONS SCHEDULE

None

### RISK

Harmful if swallowed.  
Causes burns.  
Risk of serious damage to eyes.  
Toxic to aquatic organisms, may cause long- term adverse effects in the aquatic environment.

### SAFETY

Avoid contact with eyes.  
Wear suitable protective clothing.  
To clean the floor and all objects contaminated by this material, use water and detergent.  
This material and its container must be disposed of in a safe way.  
Take off immediately all contaminated clothing.  
In case of accident or if you feel unwell IMMEDIATELY contact Doctor or Poisons Information Centre (show label if possible).  
Use appropriate container to avoid environmental contamination.  
Avoid release to the environment. Refer to special instructions/Safety data sheets.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
Sealed metal containers with electrochemical contents typically, manganese dioxide	1313-13-9	35-40
zinc	7440-66-6	10-15^
potassium hydroxide	1310-58-3	<3
graphite	7782-42-5	1-5^
zinc oxide	1314-13-2	<1^

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## Section 4 - FIRST AID MEASURES

### SWALLOWED

Not normally a hazard due to physical form of product.

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

### EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

### NOTES TO PHYSICIAN

For acute or short-term repeated exposures to highly alkaline materials:

- Respiratory stress is uncommon but present occasionally because of soft tissue edema.
  - Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
  - Oxygen is given as indicated.
  - The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
  - Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.
- Alkalis continue to cause damage after exposure.

#### INGESTION:

- Milk and water are the preferred diluents
- No more than 2 glasses of water should be given to an adult.
- Neutralising agents should never be given since exothermic heat reaction may compound injury.
- \* Catharsis and emesis are absolutely contra-indicated.
- \* Activated charcoal does not absorb alkali.
- \* Gastric lavage should not be used.

Supportive care involves the following:

- Withhold oral feedings initially.
- If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

#### SKIN AND EYE:

- Injury should be irrigated for 20-30 minutes.
- Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology].

## Section 5 - FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.

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## Section 5 - FIRE FIGHTING MEASURES

- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- Non combustible.
  - Not considered to be a significant fire risk.
  - Expansion or decomposition on heating may lead to violent rupture of containers.
  - Decomposes on heating and may produce toxic/ irritating fumes.
  - May emit acrid smoke.
- Decomposes on heating and produces toxic fumes of: metal oxides.  
May emit corrosive fumes.

### FIRE INCOMPATIBILITY

None known.

HAZCHEM: None

## Section 6 - ACCIDENTAL RELEASE MEASURES

### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Clean up all spills immediately.
- Secure load if safe to do so.
- Bundle/collect recoverable product.
- Collect remaining material in containers with covers for disposal.

#### MAJOR SPILLS

- Clean up all spills immediately.
- Secure load if safe to do so.
- Bundle/collect recoverable product.
- Collect remaining material in containers with covers for disposal.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- When handling DO NOT eat, drink or smoke.
- Always wash hands with soap and water after handling.
- Avoid physical damage to containers.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.

### SUITABLE CONTAINER

No restriction on the type of containers. Packing as recommended by manufacturer. Check all material is clearly labelled.

### STORAGE INCOMPATIBILITY

None known.

### STORAGE REQUIREMENTS

- Keep dry.
- Store under cover.
- Protect containers against physical damage.
- Observe manufacturer's storing and handling recommendations.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC
Australia Exposure	manganese dioxide	—	1	—	3	—	—	—

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC
Standards	(Manganese, fume (as Mn))							
Australia Exposure Standards	manganese dioxide		1					
	(Manganese, dust & compounds (as Mn))							
Australia Exposure Standards	potassium hydroxide (Potassium hydroxide)					2		

### PERSONAL PROTECTION

#### EYE

- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

Wear protective gloves, eg. PVC.

#### OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

None under normal operating conditions.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Copper top battery - contents dark in colour.

### PHYSICAL PROPERTIES

Does not mix with water.

Alkaline.

Molecular Weight: Not Applicable  
Melting Range (°C): Not Available  
Solubility in water (g/L): Immiscible  
pH (1% solution): Not Applicable  
Volatile Component (%vol): Not Applicable  
Relative Vapour Density (air=1): Not Applicable  
Lower Explosive Limit (%): Not Available  
Autoignition Temp (°C): Not Available  
State: Manufactured

Boiling Range (°C): Not Applicable  
Specific Gravity (water=1): Not Available  
pH (as supplied): Not Applicable  
Vapour Pressure (kPa): Not Applicable  
Evaporation Rate: Not Applicable  
Flash Point (°C): Not Available  
Upper Explosive Limit (%): Not Available  
Decomposition Temp (°C): Not Available  
Viscosity: Not Applicable

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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

Harmful if swallowed.

Causes burns.

Risk of serious damage to eyes.

#### CHRONIC HEALTH EFFECTS

### TOXICITY AND IRRITATION

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

#### MANGANESE DIOXIDE:

##### TOXICITY

Oral (Rat) LD50: >3478 mg/kg

No data of toxicological significance identified in literature search.

##### IRRITATION

#### POTASSIUM HYDROXIDE:

##### TOXICITY

Oral (rat) LD50: 273 mg/kg

##### IRRITATION

Skin (human): 50 mg/24h SEVERE

Skin (rabbit): 50 mg/24h SEVERE

Eye (rabbit): 1mg/24h rinse- Moderate

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.

Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

## Section 12 - ECOLOGICAL INFORMATION

No data for Duracell Alkaline And Ultra Alkaline Batteries.

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

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## Section 14 - TRANSPORTATION INFORMATION

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HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA,  
IMDG

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## Section 15 - REGULATORY INFORMATION

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POISONS SCHEDULE: None

### REGULATIONS

manganese dioxide (CAS: 1313-13-9) is found on the following regulatory lists;

Australia Exposure Standards

Australia Inventory of Chemical Substances (AICS)

Australia Therapeutic Goods Administration (TGA) Substances that may be used as active ingredients in Listed medicines

OECD Representative List of High Production Volume (HPV) Chemicals

potassium hydroxide (CAS: 1310-58-3) is found on the following regulatory lists;

Australia Exposure Standards

Australia High Volume Industrial Chemical List (HVICL)

Australia Inventory of Chemical Substances (AICS)

Australia Poisons Schedule

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 6

CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP

International Council of Chemical Associations (ICCA) - High Production Volume List

OECD Representative List of High Production Volume (HPV) Chemicals

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## Section 16 - OTHER INFORMATION

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Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

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