

MATERIAL SAFETY DATA SHEET

NAME: DURACELL NICKEL OXYHYDROXIDE BATTERIES

CAS NO: Not applicable

Effective Date: 1/19/06

Rev: na

A. — IDENTIFICATION

Manganese Dioxide (1313-13-9) Nickel Oxyhydroxide (12054-48-7) Zinc (7440-66-6) Water (7732-18-5) Potassium Hydroxide (35%) (1310-58-3) Graphite, natural(7782-42-5) or synthetic (7440-44-0)	%	Formula: Mixture Mixture
	20-30	Molecular Weight: NA
	20-30 10-20 5-15 5-10 2.5 -4.5	Synonyms: NX1500 / ZR6 (AA) NX2400 / ZR03 (AAA)

Boiling Point NA °F NA °C	Melting Point NA °F NA °C	Freezing Point NA °F NA °C
Specific Gravity (H ₂ 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 Cylindrical cell. Contents dark in color.

Flash Point and Test Method(s) NA

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
<u>Conditions to Avoid</u>			<u>Conditions to Avoid</u>		
Do not heat, crush, disassemble, short circuit or recharge.			Not applicable		
<u>Incompatible Materials</u>			<u>Hazardous Decomposition Products</u>		
Contents incompatible with strong oxidizing agents.			Thermal degradation may produce hazardous metal fumes; hydrogen gas; caustic vapors of potassium hydroxide and other toxic by-products.		

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

Footnotes

Not applicable

D. — HEALTH HAZARD DATA

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/Gillette)
 Potassium Hydroxide - 2 mg/m³ (Ceiling) (ACGIH)
 Nickel (insoluble as Ni) - 1.0 mg/m³ (OSHA); 0.2 mg/m³ (ACGIH); 0.05 mg/m³ (Gillette)
 Graphite (all kinds except fibrous)-2 mg/ m³ (ACGIH); (synthetic)-15 mg/m³ (total, OSHA);
 5 mg/m³ (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, is accidentally swallowed or is mechanically, physically, or electrically abused. Contains concentrated (~35%) potassium hydroxide, which is caustic. Anticipated leakage volume of potassium hydroxide is 2 to 20 ml.

1. Inhalation Not anticipated. Respiratory (and eye) irritation may occur if fumes are released due to heat or an abundance of leaking batteries.
2. Ingestion Not anticipated. Irritation, including caustic burns to the internal/external mouth areas, 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.

Environmental Effects

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

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. Batteries may explode, pyrolyze or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. Replace all batteries in equipment at the same time. Do not carry batteries loose in pocket or bag.

Normal Clean Up

Not applicable

Waste Disposal Methods

No special precautions are required for small quantities. Large quantities of open batteries should be treated as hazardous waste. Dispose of in accordance with 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

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

Water, carbon dioxide, sand, Class "D" extinguisher

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 at least 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. If mouth area irritation/burning has occurred, rinse the mouth and surrounding area with clear, tepid water for at least 15 minutes.

Notes to Physician

1. The acutely toxic ingredients are concentrated (35%) potassium hydroxide and nickel.
2. Chronic exposure to nickel has been reported to be carcinogenic and disposal processes resulting in nickel exposure may be hazardous.
3. Anticipated potential leakage of potassium hydroxide is 2-20 mls.
4. If the cell is abusively opened the electrodes may react with air and ignite.

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.