

MATERIAL SAFETY DATA SHEET

NAME: DURACELL NICKEL CADMIUM BATTERIES

CAS NO: NA

Effective Date: 10/06/97

Rev: NA

A. — IDENTIFICATION

Nickel (7440-02-0) and Nickel Hydroxide (12125-56-3) Cadmium (7440-43-9) and Cadmium Oxide (1306-19-0) Potassium Hydroxide (35%) (1310-58-3) Cobalt (7440-48-4) and Cobalt Hydroxide (21041-93-0)	%	Formula: Mixture Mixture
	15	Molecular Weight: NA
	28	Synonyms: NC-D; NC-C; NC-AA; NC-AAAM; NC-9; RX03; RX14; RX20; RX22; RX6; VRO-5; VR1-2; VR2-0; VR4-0
	2.5	
	<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 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 Each cell is a sealed container enclosing a nickel electrode, a cadmium electrode and a potassium hydroxide electrolyte battery.

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

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

Footnotes

NA

D. — HEALTH HAZARD DATA

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

8-Hour TWAs: Nickel - 1.0 mg/m³ (OSHA/ACGIH); 0.05 mg/m³ (Duracell)
 Cadmium - 0.2 mg/m³ (OSHA); 0.01 mg/m³ (ACGIH)
 Cobalt (Dust and Fume) - 0.1 mg/m³ (OSHA); 0.02 mg/m³ (ACGIH)
 Potassium Hydroxide - 2.0 mg/m³ (Ceiling) (ACGIH)

These levels are not anticipated under normal use conditions.

Warning Signals

NA

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 caustic potassium hydroxide at a high concentration (35%). Anticipated potential leakage of potassium hydroxide is 1-2 grams.

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

E. — ENVIRONMENTAL IMPACT

1. Applicable Regulations Ingredients listed in TSCA inventory.

2. DOT Hazard Class - NA

3. DOT Shipping Name - NA

Environmental Effects

NA

F. — EXPOSURE CONTROL METHODS

Engineering Controls

General ventilation under normal circumstances.

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-nitrile 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 with incorrect polarity. Batteries may explode, pyrolyze or vent if disassembled, crushed 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.

Normal Clean Up

NA

Waste Disposal Methods

Individual consumers may dispose with household trash. Industrial users must landfill in accordance with appropriate federal, state and local regulations. Do not incinerate or mutilate.

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. Irritating vapors 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**

Exposed eyes and surrounding areas should be irrigated with copious amounts of clear, tepid water for at least 30 minutes. Consult a physician immediately.

Skin

Remove contaminated clothes. 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

Remove from source to fresh air. If irritation or symptoms persists, consult a physician.

Ingestion

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) Anticipated potential leakage of potassium hydroxide (35%) is 1-2 grams.
- 2) 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.