Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: DURACELL NICKEL METAL HYDRIDE RECHARGEABLE BATTERIES (Low Self-Discharge)
Product Identification: Nickel Metal Hydride LSD Cells -
Duracell Designations: DX1300; DX1400; DX1500; DX2400; DX1604
Product Use: Energy Source
MSDS Date of Preparation: July 1, 2008

Company Identification

US Office
Duracell, a division of P&G
Berkshire Industrial Park
14 Research Drive
Bethel, CT USA 06401
(203) 796-4000

Canadian Office
Duracell, a division of P&G
4711 Yonge Street
Toronto, Ontario
Canada M2N 6K8
(416) 730-4711

Emergency Phone Number: INFOTRAC Emergency Response Hotline 1-800-535-5053 (US & Canada)

SECTION 2: HAZARDS IDENTIFICATION

Physical Appearance: Cylindrical batteries

EMERGENCY OVERVIEW

CAUTION: Never mix NiMH batteries with NiCd or any other type of battery. Keep batteries away from fire or explosion may occur. For proper insertion, please observe pole indications (+/-). Never use different battery types or systems at the same time. Do not carry batteries loose in your pocket or purse. If the cell is abusively opened the electrodes may react with air and ignite.

Potential Health Effects:

The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Damaged battery will release concentrated potassium and sodium hydroxides, which are caustic. Anticipated potential leakage of potassium and sodium hydroxides is 1-2 grams.

Eye Contact: Contact with battery contents may cause severe irritation and burns. Eye damage is possible.

Skin Contact: Contact with battery contents may cause severe irritation and burns.

Inhalation: Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

Ingestion: Swallowing is not anticipated due to battery size. Ingestion of battery contents (from a leaking battery) may cause mouth, throat and intestinal burns and damage.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Amount
Nickel-Cobalt-Manganese-Aluminum Alloy	7440-02-0/ 7440-48-4/ 7439-96-5/ 7429-90-5	20-40%
Nickel-Cobalt- Zinc Alloy	7440-02-0/ 7440-48-4/ 7440-66-6	15-25%
Nickel	7440-02-0	5-15%
Iron	7439-89-6	2-40%
Potassium Hydroxide (35%)	1310-58-3	1-5%
Sodium Hydroxide	1310-73-2	1-5%
Lithium Hydroxide	1310-65-2	1-5%

SECTION 4: FIRST AID MEASURES

Eye Contact: If battery is leaking and material contacts the eye, flush thoroughly with copious amounts of running water for 30 minutes. Seek immediate medical attention.

Skin Contact: If battery is leaking and material contacts the skin, remove any contaminated clothing and flush exposed skin with copious amounts of running water for at least 15 minutes. If irritation, injury or pain persists, seek medical attention.

Inhaled: If battery is leaking, contents may be irritating to respiratory passages. Move to fresh air. If irritation persists, seek medical attention.

Swallowed: If battery contents are swallowed, do not induce vomiting. If the victim is alert, have them rinse their mouth are the surrounding skin with water for at least 15 minutes. Seek immediate medical attention.

Note to Physician: The acutely toxic ingredients are concentrated (35%) potassium and sodium hydroxides and nickel. Anticipated potential leakage of potassium and sodium hydroxides is 1-2 grams.

SECTION 5: FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Batteries may burst and release hazardous decomposition products when exposed to a fire situation. If the cell is abusively opened the electrodes may react with air and ignite.

Extinguishing Media: Use water, carbon dioxide, sand or class D extinguisher.

Special Fire Fighting Procedures: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (containers may explode in heat of fire).

Hazardous Combustion Products: Thermal degradation may produce hazardous metal fumes of nickel, cobalt, lithium, zinc, aluminum and manganese; hydrogen gas, caustic vapors of potassium and sodium hydroxide and other toxic by-products.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Notify safety personnel of large spills. Caustic vapors may be released from leaking or ruptured batteries. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal.

SECTION 7: HANDLING AND STORAGE

Avoid mechanical or electrical abuse. DO NOT short circuit or install incorrectly. Batteries may explode, pyrolize or vent if disassembled, crushed, 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 a pocket or bag.

Storage: Store batteries in a dry place at normal room temperature. Do not refrigerate – this will not make them last longer.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The following occupational exposure limits are provided for informational purposes. No exposure to the battery components should occur during normal consumer use.

Chemical Name	Exposure Limits
Nickel (elemental)	1 mg/m3 TWA OSHA PEL (as Ni) 1.5 mg/m3 TWA ACGIH TLV (inhalable)
Nickel (soluble compounds)	1 mg/m3 TWA OSHA PEL (as Ni) 0.1 mg/m3 TWA ACGIH TLV (inhalable as Ni)
Nickel (insoluble compounds)	1 mg/m3 TWA OSHA PEL (as Ni) 0.2 mg/m3 TWA ACGIH TLV (inhalable as Ni)
Manganese	5 mg/m3 Ceiling OSHA PEL 0.2 mg/m3 TWA ACGIH TLV
Aluminum (as dust)	5 mg/m3 TWA (respirable dust), 15 mg/m3 TWA (total dust) OSHA PEL 10 mg/m3 TWA ACGIH TLV
Cobalt and inorganic compounds (as Co)	0.1 mg/m3 TWA OSHA PEL 0.02 mg/m3 TWA ACGIH TLV
Zinc	None Established for zinc metal
Iron	None Established for iron metal
Potassium Hydroxide	2 mg/m3 Ceiling ACGIH TLV
Sodium Hydroxide	2 mg/m3 TWA OSHA PEL 2 mg/m3 Ceiling ACGIH TLV
Zinc	None Established for zinc metal
Iron	None Established for iron metal
Lithium Hydroxide	None Established

Ventilation: No special ventilation is needed for normal use.

Respiratory Protection: None required for normal use.

Skin Protection: None required for normal use. Use neoprene, rubber or nitrile gloves when handling leaking batteries.

Eye Protection: None required for normal use. Wear safety goggles when handling leaking batteries.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Cylindrical batteries
Specific Gravity: Not applicable
Water Solubility: Insoluble
Vapor Pressure: Not applicable
Vapor Density: Not applicable
Boiling Point: Not applicable
Melting Point: Not applicable
Flash Point: Not applicable
Autoignition Point: Not applicable

SECTION 10: STABILITY AND REACTIVITY

Stability: This product is stable.

Incompatibility/Conditions to Avoid: Contents are incompatible with strong oxidizing agents. Do not heat, crush, disassemble, or short circuit.

Hazardous Decomposition Products: Thermal decomposition may produce hazardous fumes of nickel, cobalt, lithium, zinc, aluminum and manganese; hydrogen gas, caustic vapors of potassium and sodium hydroxide and other toxic by-products.

Hazardous Polymerization: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity Data:
Nickel: LDLo oral rat 5000 mg/kg
Cobalt: LD50 oral rat 6171 mg/kg
Manganese: LD50 oral rat 9000 mg/kg
Potassium Hydroxide: LD50 oral rat 273 mg/kg
Sodium Hydroxide: LDLo oral rabbit 500 mg/kg
Iron: LD50 oral rat 30,000 mg/kg
Lithium Hydroxide: LD50 oral rat 210 mg/kg; LC50 inhalation rat 960 mg/m3/4 hr

Chronic Effects: The chemicals in this product are contained in a sealed can and exposure does not occur during normal handling and use. Chronic exposure to nickel and cobalt may cause respiratory and skin sensitization. Disposal process that result in nickel or cobalt exposure may be hazardous.

Target Organs: Skin, eyes and respiratory system.

Carcinogenicity: Nickel metal is classified by IARC as “Possibly Carcinogenic to Humans” (Group 2B) and by NTP as “Reasonably Anticipated to be a Carcinogen”. Soluble nickel compounds are classified by IARC as "Carcinogenic to Humans" (Group 1), by NTP as "Known to be a Human Carcinogen" and by ACGIH as “Not Classifiable as a Human Carcinogen” (A4). Insoluble nickel compounds are classified by IARC as "Carcinogenic to Humans" (Group 1), by NTP as "Known to be a Human Carcinogen" and by ACGIH as “Confirmed Human Carcinogen” (A1). Cobalt and cobalt compounds are classified by

IARC as “Possibly Carcinogenic to Humans” (Group 2B). None of the other components of this product are listed as carcinogens by ACGIH, IARC, NTP or OSHA.

SECTION 12: ECOLOGICAL INFORMATION

No ecotoxicity data is available. This product is not expected to present an environmental hazard.

SECTION 13: DISPOSAL INFORMATION

Disposal should be in accordance with Federal, state/provincial and local regulations. Nickel metal hydride rechargeable batteries are recyclable through the Rechargeable Battery Recycling Corporation’s (RBRC) *Charge Up to Recycle! Program.* For more information, call 1-800-8-BATTERY (1-800-822-8379) or visit the RBRC web site at www.rbrc.org

SECTION 14: TRANSPORT INFORMATION

Transportation Information – Products covered by this MSDS, in their original form, are considered “dry cell” batteries and are not regulated as “DANGEROUS GOODS” for transportation.

For finished packaged product transported by ground (US DOT): – not regulated
For finished packaged product transported by sea (IMDG) – not regulated
For finished packaged product transported by air (IATA): – not regulated

SECTION 15: REGULATORY INFORMATION

United States

OSHA Status: While the finished product(s) is considered an article and not covered by the OSHA Hazard Communication Standard, 29 CFR 1910.1200, this MSDS contains valuable information critical to the safe handling and proper use of the product".

EPA TSCA Status: All intentionally-added components of this product are listed on the US TSCA Inventory.

SARA 313/302/304/311/312 chemicals: Manganese Compounds 20-40%, Nickel 5-10%, Nickel Compound 35-65%, Cobalt Compounds 35-65%, Zinc Compounds 15-25%,

California: This product has been evaluated and does not require warning labeling under California Proposition 65.

State Right-to-Know and CERCLA:
The following ingredients present in the finished product are listed on state right-to-know lists or state worker exposure lists

Ingredient	CAS #	Level	CERCLA RQ	State				
				IL	MA	NJ	PA	RI
Nickel	7440-02-0	40-80%	100 lb	Y	Y	Y	Y	Y

Cobalt	7440-48-4	15-25%	None	Y	Y	Y	Y	N
Potassium Hydroxide	1310-58-3	1-5%	1000 lb	Y	Y	Y	Y	Y
Aluminum	7429-90-5	20-40%	None	Y	Y	N	Y	Y
Sodium Hydroxide	1310-73-2	1-5%	1000 lb	Y	Y	Y	Y	Y
Manganese	7439-96-5	20-40%	None	Y	Y	N	Y	Y
Zinc	7440-66-6	15-25%	1000 lbs	Y	Y	Y	Y	Y
Iron	7439-89-6	2-40%	None	N	N	N	N	N
Lithium Hydroxide	1310-65-2	1-5%	None	N	N	N	N	N

Canada All intentionally-added components of this product are listed on the Canadian DSL. This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and this MSDS contains all information required by the Controlled Products Regulations.

SECTION 16: OTHER INFORMATION

P&G Hazard Rating: Health: 0 Fire: 0 Reactivity: 0

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Data supplied is for use only in connection with occupational safety and health.

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