

NICKEL-CADMIUM BATTERY MATERIAL SAFETY DATA SHEET (MSDS)

SECTION I - MANUFACTURER INFORMATION

Manufactured for:
 Lenmar Enterprises, Inc.
 4035 Via Pescasdor
 Camarillo, CA 93012

Contact Information:
 805.384.9600
 800.424.2703 (US)
 Lenmar.com

SECTION II - HAZARDOUS INGREDIENTS

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	%/wt.
Cadmium as cadmium metal (CAS# 7440-43-9) as cadmium oxide (CAS# 1306-19-0) as cadmium hydroxide (CAS# 21041-95-2)	5 µg/ m ³ TWA (as Cd)	0.01 mg/ m ³ TWA (as Cd) 0.002 mg/ m ³ TWA (as Cd respirable fraction)	13-22
Cobalt as cobalt metal (CAS# 7440-48-4) as cobalt oxide (CAS# 1307-96-6) as cobalt hydroxide (CAS# 21041-93-0)	0.1 mg/ m ³ TWA (as Co)	0.02 mg/ m ³ TWA (as Co)	0.5-2
Lithium Hydroxide (CAS# 1310-65-2)	None established	None established	0-4
Nickel as nickel metal (CAS# 7440-02-0) as nickel oxide (CAS# 1313-99-1) as nickel hydroxide (CAS# 12054-48-7)	1 mg/ m ³ TWA (as Ni)	1.5 mg/ m ³ TWA (as inhalable Ni) 0.2 mg/ m ³ TWA (as inhalable Ni, insoluble compounds)	20-32
Potassium Hydroxide (CAS# 1310-58-3)	None established	2 mg/ m ³ Ceiling	0-4
Sodium Hydroxide (CAS# 1310-73-2)	2 mg/ m ³ TWA	2 mg/ m ³ Ceiling	0-4

IMPORTANT NOTE: The battery should not be opened or incinerated. Exposure to the ingredients contained within or their combustion products could be harmful.

SECTION III - FIRE AND EXPLOSION HAZARD DATA

- If fire or explosion occurs when batteries are on charge, shut off power to charger.
- In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packaging materials. Cool the exterior of the batteries if exposed to fire to prevent rupture.
- Fire fighters should wear self-contained breathing apparatus. Nickel-cadmium batteries involved in a fire can vent and produce toxic fumes including nickel, nickel oxides, cadmium, cadmium oxides, and cobalt oxides.

SECTION IV - HEALTH HAZARD DATA

Under normal conditions of use, the battery is hermetically sealed.

Ingestion:

Swallowing a battery may be harmful.

Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. Contents include toxic cadmium and cadmium compounds which can cause excessive salivation, choking, nausea, persistent vomiting, diarrhea, abdominal pain, dizziness, faintness, unconsciousness, and possible liver and kidney injury.

If battery or contents of the battery are ingested, do not induce vomiting or give food or drink. Seek medical attention immediately and call the NATIONAL BATTERY INGESTION HOTLINE (202-625-3333) for treatment information.

Inhalation:

Contents of an open battery can cause respiratory irritation. Cadmium oxide fumes can cause metal fume fever. Hypersensitivity to nickel can cause allergic pulmonary asthma. Provide fresh air and seek medical attention.

Skin Contact:

Contents of an open battery can cause skin irritation and/or chemical burns. Cobalt, cobalt compounds, nickel, and nickel compounds can cause skin sensitization and an allergic contact dermatitis. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact:

Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

SECTION IV - HEALTH HAZARD DATA - (Continued)

Note: Nickel, nickel compounds, cadmium, cadmium compounds, cobalt, and cobalt compounds are listed as possible carcinogens by International Agency for Research on Cancer (IARC) or National Toxicology Program (NTP).

SECTION V - PRECAUTIONS FOR SAFE HANDLING AND USE

Storage:

Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.

Mechanical Containment:

Potting or sealing the battery in an airtight or watertight container is not recommended. Batteries normally evolve hydrogen which, when combined with oxygen from the air, can produce a combustible or explosive mixture unless vented. If such a mixture is present, short circuits, high temperature, or static sparks can cause an ignition.

Do not obstruct safety release vents on batteries. Encapsulation (potting) of batteries will not allow cell venting and can cause high pressure rupture.

Handling:

Accidental short circuit for a few seconds will not seriously affect the battery. However, this battery is capable of delivering very high short circuit currents. Prolonged short circuits will cause high cell temperatures which can cause skin burns. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, and metal covered tables or metal belts used for assembly of batteries into devices.

If soldering or welding to the battery is required, use of tabbed batteries is recommended. Soldering directly to the cell can damage the battery safety seal, cause internal damage or short circuit the cell.

Do not open battery. The negative electrode material may be pyrophoric. Should an individual cell from a battery become disassembled, spontaneous combustion of the negative electrode is possible. This is much more likely to happen if the electrode is removed from its metal container. There can be a delay between exposure to air and spontaneous combustion.

Charging:

This battery is made to be charged many times. Because it gradually loses its charge over a few months, it is good practice to charge battery before use. Use recommended charger. Improper charging can cause heat damage or even high pressure rupture. Observe proper charging polarity.

Labeling:

If the label or package warnings are not visible, it is important to provide a package and/or device label stating:

Nickel Cadmium Consumer Round Cells AA and larger

WARNING: CHARGE ONLY WITH STANDARD HOUSEHOLD NICKEL CADMIUM BATTERY CHARGERS. DO NOT OPEN BATTERY, DISPOSE OF IN FIRE, PUT IN BACKWARDS, MIX WITH OTHER BATTERY TYPES OR SHORT CIRCUIT - MAY EXPLODE, LEAK OR GET HOT CAUSING PERSONAL INJURY.

AAA and smaller

WARNING: (1) KEEP AWAY FROM SMALL CHILDREN. IF SWALLOWED, PROMPTLY SEE DOCTOR; HAVE DOCTOR PHONE (202) 625-3333 COLLECT. (2) CHARGE ONLY WITH STANDARD HOUSEHOLD NICKEL CADMIUM BATTERY CHARGERS. DO NOT OPEN BATTERY, DISPOSE OF IN FIRE, PUT IN BACKWARDS, MIX WITH OTHER BATTERY TYPES OR SHORT CIRCUIT - MAY EXPLODE, LEAK OR GET HOT CAUSING PERSONAL INJURY.

All Nickel Cadmium Packs (OEM and Branded) and Nickel Cadmium OEM Round Cells

WARNING: USE ONLY WITH SPECIFIED CHARGERS ACCORDING TO CHARGER MANUFACTURER'S INSTRUCTIONS. DO NOT OPEN BATTERY, DISPOSE OF IN FIRE OR SHORT CIRCUIT - MAY EXPLODE, LEAK OR GET HOT CAUSING PERSONAL INJURY.

SECTION V - PRECAUTIONS FOR SAFE HANDLING AND USE - (Continued)

Disposal:

Dispose in accordance with all applicable federal, state, and local regulations.

When generated as a waste, these batteries may be regulated by the Resource Conservation and Recovery Act (RCRA) as a D006 (cadmium) hazardous waste.

Note: Recycling of this product may be available. Contact your local recycling office or call toll free at 1-800-8-BATTERY for information about how and where you can recycle used nickel cadmium batteries.

The Federal Universal Waste Rule cited at 40 CFR Part 273 governs nickel cadmium battery recycling and may be applicable in your state.

SECTION VI - SPECIAL PROTECTION INFORMATION

Ventilation Requirements:

Not necessary under normal conditions.

Respiratory Protection:

Not necessary under normal conditions.

Eye Protection:

Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.

Gloves:

Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery.

Open Battery Storage:

Battery should not be opened. Should a cell become disassembled, the electrode should be stored in a fireproof cabinet, away from combustibles.

SECTION VII – REGULATORY INFORMATION

The transportation of the dry cell batteries described in this document is not regulated by the U.S. Department of Transportation or the major international regulatory bodies.

SARA/TITLE III - As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.

This Material Safety Data Sheet is applicable for the following product numbers:

CB0302, CB0314, CB0315, CB0325, CB0331, CB0343, CB0367, CB0399, CB0412, CB0455, CB0511, CB0610, CB0980, CBA320, CBA337, CBB212, CBB310, CBB346, CBB350, CBB392, CBB688, CBC316, CBC318, CBC904, CBD312, CBD366, CBD446, CBE388, CBF222, CBG311, CBJ312V, LBTX4000, OBC84S, PTBD12FS, PTBD145, PTBD18FS, PTC078, PTC090, PTC151, PTC310, PTD9050, PTM0100, PTM1014, PTM1210, PTM6043, PTM9100, PTMW080, PTR652, PTR668, PTR669, RBM7143C, SPJ2000, WR-4021AR-C, WS-259601-C, WS-30000F-C, WS-503002-C, WS-790001-C, WS-861000-C, WS-881000-C, WS-903106-C

The information contained in this document is provided for information only. The batteries described in this document are articles pursuant to 29 CFR 1910.1200 and, as such, are not subject to the OSHA Hazard Communication Standard requirement for preparation of a material safety data sheet. The information and recommendations in this document are made in good faith and are believed to be accurate as of the date of preparation. However, LENMAR ENTERPRISES, INC., MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON IT.