



NiCd Product Safety Data Sheet

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| PRODUCT NAME: Moltech Power Systems Rechargeable Battery | Type No.: |
| | Volts: |
| TRADE NAME: Nickel Cadmium Battery | Approximate Weight: |
| CHEMICAL SYSTEM: Nickel Cadmium | Designed for Recharge: Yes |

SECTION I - MANUFACTURER INFORMATION

Moltech Power Systems, wholly-owned subsidiary of Moltech Corporation
 12801 US Highway 441N
 Alachua, FL 32615
 1 (800) 556-0700

SECTION II - HAZARDOUS INGREDIENTS

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

| MATERIAL OR INGREDIENT | PEL (OSHA) | TLV (ACGIH) | % / wt. |
|--|-----------------------------------|---|---------|
| Cadmium as cadmium metal (CAS# 7440-43-9) cadmium oxide (CAS# 1306-19-0) cadmium hydroxide (CAS# 21041-95-2) | 5 m g/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) cobalt oxide (CAS# 1307-96-6) 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) nickel oxide (CAS# 1313-99-1) 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 TWA | 2 mg/m ³ Ceiling | 0-4 |

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 packing materials. Cool exterior of 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 can 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 open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect, day or night.

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.

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: If potting or sealing the battery in an airtight or watertight container is required, consult your Moltech representative for precautionary suggestions. 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. If this cannot be done, consult your Moltech representative for proper precautions to prevent seal damage or short circuit.

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

Nickel Cadmium Industrial Round Cells

(where charge rate is indicated on label)

WARNING: CHARGE ONLY AT SPECIFIED CHARGE RATE. 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.

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. 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 dry cell batteries manufactured or sold by Moltech Power Systems, Inc. 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.