MATERIAL SAFETY DATA SHEET

CYBER-POWER ELECTRONIC CORPORATION Date of Preparation: Jan 15, 2016

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Section 1 – Product Identification

Product Name: Nickel Cadmium Battery Reference No.: GB16483-2000
Trade Name: NI-CD Nominal Voltage: 1.2V
Chemical System: Nickel / Cadmium Designated for Recharge:
_X_Yes ___ No

Section 2 – Composition/Information on Ingredients

Chemical Name	CAS No.	Percentage
Cadmium	7440-43-9	12-28
Cadmium hydroxide	21041-95-2	12-28
Nickel (powder)	7440-02-0	9-18
Nickel hydroxide	12054-48-7	7-13
Potassium	1310-58-3	<4
Nylon	N/A	<3
Steel	N/A	13-14
Other	N/A	<2
Total		100%

Notes: 1. Concentration vary depending on the state of charge or discharge.
2. TWA is the weighted average concentration over an 8-hour period.

Section 3-Hazardous Ingredients

IMPORTANT NOTE: The battery cells should not be opened or exposed to heat because exposure to the above ingredients contained within could be harmful under some circumstances. May be fatal if swallowed, inhaled or absorbed through skin.

Inhalation: During Normal use inhalation is an unlikely route of exposure due to containment of hazardous materials within the battery case. However, should the batteries be exposed to extreme heat or pressure causing a breach in the battery cell case, cadmium dusts and fumes may be emitted. Inhalation of cadmium dusts or fumes may cause throat dryness, respiratory irritation, headache, nausea, vomiting, chest pain, extreme restlessness and

irritability, pneumonitis, and bronchopneumonia. In the case high concentration exposure (e.g., above 1 to 5 mg/m^3 during an eight hour period) death may occur within several days after the exposure.

Ingestion: If the battery case is breached in the digestive tract, the electrolyte may cause localized burns. Ingestion of cadmium compounds may result in increased salivation, choking, nausea, persistent vomiting, diarrhea, abdominal pain, anemia, tenesmus, and kidney dysfunction.

Skin Absorption: No evidence of adverse effects from available data.

Skin Contact: Exposure to the electrolyte contained inside the battery may result in chemical burns. Exposure to nickel may cause dermatitis in some sensitive individuals.

Eye Contact: Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

Section 4--First Aid Measures

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do not give mouth to mouth resuscitation. CALL A PHYSICIAN IMMEDIATELY.

Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Section 5 - Fire Fighting Measures

Flash Point: N/A Lower Explosive Limit: NA Upper Explosive Limit: N/A

Extinguishing Media: Any class of extinguishing medium may be used on the batteries or their packing material.

Special Fire Fighting Procedures: Exposure to temperatures of above 212^0 F can cause evaporation of the liquid content of the potassium hydroxide electrolyte resulting in the rupture of the cell. Potential for exposure to cadmium fumes during fire; use self-contained breathing apparatus.

Section 6--Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker SOLUSORB(R)solvent adsorbent is recommended for spills of this product.

Section 7- Safe Handling and Storage

Storage:
Store in a cool place, but prevent condensation on cell or battery terminals. Elevated temperatures may result in reduced battery life. Optimum storage temperatures are between –31。F and 95。F.

Mechanical containment:
If there are special encapsulation or sealing requirements, consult CYBER-POWER ELECTRONIC CORPORATION about possible cell hazard precautions or limitations.

Handling:
Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Be sure to avoid prolonged short circuit since the heat can burn attendant skin and even rupture of the battery cell case. Batteries packaged in bulk containers should not be shaken. Metal covered tables or belts used for assembly of batteries into devices can be the source of short circuits; apply insulating material to assembly work surface.

Soldering/Welding:
If soldering or welding to the case of the battery is required, consult CYBER-POWER ELECTRONIC CORPORATION for proper precautions to prevent seal damage or external short circuit.

Charging:
This battery is designed for recharging. A loss of voltage and capacity of batteries due to self-discharge during prolonged storage is unavoidable. Charge battery before use. Observe the specified charge rate since higher rates can cause a rise in internal gas pressure, which may result in damaging heat generation or cell rupture and/or venting.

Section 8-Exposure Controls/Personal Protection

Airborne Exposure Limits:

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. CYBER-POWER ELECTRONIC CORPORATION makes no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

-OSHA Permissible Exposure Limit (PEL): 5 ppm (TWA) skin
-ACGIH Threshold Limit Value (TLV): 2 ppm (TWA) skin

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Other Control Measures:

Provide clean work clothes daily to workers who regularly use this material. Wash hands before eating and do not eat, drink, or smoke in workplace.

Section 9- Physical and Chemical Properties

The product is a manufactured article as described in 29 CFR 1910.1200. The battery cell is contained in a hermetically sealed case, designed to withstand temperatures and pressure encountered during normal use. As a result, during normal use, hazardous materials are fully contained inside the battery cell. However, if exposed to a fire, explosion, extreme abuse, misuse, or improper disposal that results in breaching of the battery cell case, hazardous materials may be released. The following physical data relating to the hazardous materials contained within the battery cell are provided for the user's information. (Also see Section IV – Fire and Explosion Hazardous, and Section VIII – Precautions for Safe Handling and Use.)

Cadmium:	Melting point (^{0} F): 610	Boiling point (^{0} F): 1,407
	% Volatile by Volume:	Vapor Pressure (mm Hg);
	Evaporation Rate:	Vapor Density (Air = 1);
	Specific Gravity (H_2O): 8.65@77iF	
	Solubility in Water: Practically insoluble	
	Appearance and Odor: Silver-white, blue-tinged, lustrous metal	

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Cadmium Hydroxide:	Melting point (^{0} F): % Volatile by Volume: Evaporation Rate: Specific Gravity (H_2O): 4.79 Solubility in Water: Practically insoluble Appearance and Odor: Powder	Boiling point (℃): Vapor Pressure (mm Hg); Vapor Density (Air = 1);
Nickel Powder:	Melting point (^{0} F): 2,831 % Volatile by Volume: Evaporation Rate: Specific Gravity (H_2O): 8.90 Solubility in Water: Practically insoluble Appearance and Odor: Powder	Boiling point (^{0} F): 5,134 Vapor Pressure (mm Hg); Vapor Density (Air = 1);
Nickel Hydroxide:	*Note: decomposes above 392iF into NiO and H_2O	
Potassium Hydroxide:	Melting point (^{0} F): * % Volatile by Volume: Evaporation Rate: Specific Gravity (H_2O): Solubility in Water: Soluble in 0.9 part water, 0.6 part in boiling water Appearance and Odor: White or slightly yellow	Boiling point (^{0} F): Vapor Pressure (mm Hg); Vapor Density (Air = 1);

* Note: Potassium hydroxide in present as a liquid or paste and acts as the electrolyte in the battery cell.

Section10 - Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Discolors on exposure to light.
Hazardous Decomposition Products:
Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong acids and strong oxidizers, albumin, solutions of iron, zinc, aluminum, toluene diisocyanate, and alkalis. Ignites spontaneously in the presence of red fuming nitric acid, and with sodium.

Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

Section 11- Toxicological Information

Oral rat LD50: 250 mg/kg; skin rabbit LD50: 820 mg/kg; inhalation mouse LC50: 175 ppm (7 hours); irritation skin rabbit: 20 mg/24H moderate; irritation eye rabbit 102 mg severe. Investigated as a tumorigen, mutagen, and reproductive effector. Carcinogenic determination: limited evidence in experimental animals (IARC 27, 54, 1982). Aniline is listed by the International Agency for Research on Cancer (IARC) in Category 3, i. e., "Cannot be classified as to its carcinogenicity in humans." (IARC, Supplement 4, 1982).

Section 12- Toxicological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material may leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material is expected to readily biodegrade. When released into water, this material is expected to have a half-life between 10 and 30 days. This material has an experimentally-determined bioconcentration factor (BCF) of less than 100. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to be readily degraded by photolysis. When released into the air, this material is expected to have a half-life of less than 1 day. When released into the air, this material is not expected to adversely affect the ozone layer.

Environmental Toxicity:
This material is expected to be very toxic to terrestrial life. This material is expected to be very toxic to aquatic life. The LC50/96-hour values for fish are between 10 and 100 mg/l. The EC50/48-hour values for daphnia are less than 1 mg/l.

Section 13- Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Cyber-power encourages battery recycling. Our Nickel Cadmium batteries are recyclable through the Rechargeable Battery Recycling Corporation's (RBRC) ***Charge Up to Recycle! Program***. For information call 1-800-8-BATTERY or see their website at http://www.rbrc.org. Ni-CD batteries must be handled in accordance with all state and provincial laws and regulations.

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DO NOT INCINERATE or subject battery cells to temperatures in excess of 212^0 F.
Such treatment can vaporize the liquid electrolyte cell rupture. Incineration may result in cadmium emissions.

Section 14 – Transportation

Cyber-power Sealed Nickel Cadmium Battery are considered to be "dry cell" batteries and are not subject to dangerous goods regulation for the purpose of transportation by the U. S. Department of Transportation, the International Civil Aviation Administration, the International Air Transport Association or the International Maritime Dangerous Goods regulations. The only DOT requirements for shipping Nickel Cadmium batteries is Special Provision 130 which states: "Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals)." IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting. And also is not classified as dangerous under current edition of the IATA dangerous goods regulations (A123) and all applicable carrier and governmental regulations.

Nickel Cadmium batteries are classified as a D006 hazardous waste because of the presence of cadmium. This waste code is assigned because of toxicity, not corrosiveness. These batteries do not meet the definition of a corrosive waste.

Section 15 - Reactivity Data

The batteries are stable under normal operating conditions.

Hazardous polymerization will not occur.

Hazardous decomposition products: oxides of cadmium and nickel.

Conditions to avoid: heat, open flames, sparks, and moisture.

Potential incompatibilities (i.e., material to avoid contact with): The battery cells are encased in a non-reactive container; however, if the container is breached, avoid contact of internal battery components with acids, aldehydes, and carbamate compounds.

Section 16 –Other Information

Spill and leaks are unlikely because cells are contained in an hermetically-sealed case. If the battery case is breached, put on protective clothing that is impervious to caustic materials and absorb or pack spill residues in inert material. Dispose of as a hazardous waste in accordance with applicable state and provincial regulations. Resultant spill residues may be characterized as D002 (caustic) and D006 (cadmium) pursuant to the provincial Resource conservation and Recovery Act (RCRA). See Section IV for response to fires or explosions.

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