



MATERIAL SAFETY DATA SHEET

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Potential hazards may arise from the improper use of cells or battery packs. Manufacturers and assemblers of battery-using systems, that are properly designed and that adequate battery handling procedures should be in place.

Section A – Product

Product series : Nickel Cadmium rechargeable cell or battery pack

Section B – Hazardous Ingredients

<u>Chemical Name</u>	<u>Percentage by Weight</u>
Cadmium	
Cadmium metal [CAS no: 7440 – 43 – 9]	
Cadmium oxide [CAS no: 1306 – 19 – 0]	
Cadmium hydroxide [CAS no: 21041 – 95 – 2]	10-28%
Cobalt	
Cobalt metal [CAS no: 7440 – 48 – 4]	
Cobalt oxide [CAS no: 1307 – 96 – 6]	
Cobalt hydroxide [CAS no: 21041 – 93 – 0]	0-3%
Nickel	
Nickel metal [CAS no: 7440 – 02 – 0]	
Nickel oxide [CAS no: 1313 – 99 – 1]	
Nickel hydroxide [CAS no: 12054 – 48 – 7]	18-36%
Potassium	
Potassium hydroxide [CAS no: 1310 – 58 – 3]	0-4%
Sodium	
Sodium hydroxide [CAS no: 1310-73-2]	0-4%

Remarks: Concentrations may vary under different condition of charging or discharging



Section C – Fire and Explosion Hazard Data

If fire or explosion occurs when the cells or battery packs are being charged, stop charging immediately.

Any class of extinguishing medium should be considered on the cells/battery packs or packing material.

Special Fire Fighting Procedure: Should wear self-contained breathing apparatus. Nickel-cadmium involved in a fire can vent and produce toxic fumes including nickel, nickel oxides, cadmium, cadmium oxides, and cobalt oxides.

Section D – Health Hazard Data

Inhalation:

Do not dispose of cells or battery packs in fire or mutilate, they may burst explosively or release toxic fumes. Inhalation of those may cause significant harm to human body. Provide fresh air at once and seek medical attention.

Ingestion:

Cells of any size should never be placed in the mouth, nose, or ears. Damage to tissue may result from chemical and/or electrical burning. Ingestion of cadmium compounds may result in increased salivation, choking, nausea, persistent vomiting, diarrhea, abdominal pain, anemia, tenesmus, and kidney dysfunction. In all cases of ingestion, seek medical attention immediately. The progress of the cell through the body should be carefully monitored and surgical interventions.

Skin Contact:

Electrolyte will cause chemical burns, and others chemical compound may cause allergic dermatitis. Remove contaminated clothing at once, and rinse with large quantity of water. If the symptoms persist, seek medical attention.

Eye Contact:

Exposure of eye to contents of an open cell will cause chemical burns and severe irritation. Rinse thoroughly with large quantity of distilled water at once, and seek medical attention immediately.

Long-term exposure:

Cadmium, cobalt and nickel compounds are listed as possible carcinogens. Gloves and others protective clothing are suggested to the person who need to handle cells or batteries frequently.



Section E – Safe Handling and Use

Storage:

Cells or Battery packs should be stored in a cool, dry and well ventilated area. Cell life degradation is a function of time, even if the battery is never used. As temperature increases, the degradation rate of the cell increases, making it desirable to keep inventory between 0°C to 30°C when practical. Cells or battery packs that will be stored for extended periods should undergo regular OCV checks and receive boost charges on a regular schedule.

Airtight, watertight compartment:

Cell or battery packs normally evolve very small amount of hydrogen, which might cause harm to human body. In an airtight compartment, proper ventilation is suggested.

Short Circuit:

Care must be exercised in the handling and use of the cells or battery packs to avoid external shorts. A current-limited device such as a fuse, resistor, diode, or circuit breaker, may be used in the discharge circuit to prevent short-circuit current.

Soldering or Welding:

Avoid solder or weld to cells directly, contact Intec Industries Co. Ltd. for the proper handling procedures whenever in doubt.

Charging:

Incorrect chargers or reverse charging may result high temperature and gas formation, which risk fire or cell rupture. Do not leave the cell or battery packs charging over extend period unless it is specifically designed to do so.



Section F – Transportation Requirements

Intec sealed Nickel Cadmium batteries are considered to be “dry cell” batteries. Improperly packed cells or battery packs when exposed to the vibration of long-distance transportation can be caused short circuit. The keys to proper shipment are as the follows:

- a. Possible insulate the tables to prevent contact.
- b. Cells or battery packs are heavy and deserve the protection of adequate strength boxes.
- c. If stacking cells vertically, insulation between layers of cells must resist breaking down under the stress of transportation.
- d. Avoid overstacking boxes of cells or battery packs so that the packaging of the lower tier is damaged.

Section G – Recycle and Disposal

Intec Industries Co. Ltd. has participated in the Rechargeable Battery Recycling Corporation's (RBRC) batteries recycle program. RBRC will provide methods and means for the disposal of batteries with the RBRC's logo. For more information, you may contact Intec Industries Co. Ltd. or visit RBRC website (www.rbrc.org).

