

**MAINTENANCE-FREE
SEALED NICKEL-CADMIUM**

**MATERIAL SAFETY
DATA SHEET**

Identity (As used on Label and List)
NICKEL-CADMIUM SEALED CELL BATTERY

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

BATTERY MANUFACTURER'S MSDS	Emergency Telephone Number Not applicable
	Telephone Number for Information Not applicable
	Date Prepared Jan. 10, 1997
	Signature of Preparer (optional)

Section II -- Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity: Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits	
			Recommended	% (optional)
Cadmium (present as cadmium, cadmium hydroxide, cadmium oxide)	0.2 TWA Dust	0.05 TWA Dust		8-20%
	0.6 C Dust	0.05 C Fume		
	0.1 TWA Fume			
	0.3 C Fume			
Nickel (present as nickel, nickel hydroxide, nickel oxide)	1.0 as Ni	1.0 as Ni		15-35%

Section III -- Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H ₂ O=1)	1.6
Vapor Pressure (mm Hg.)	N/A	Melting Point	Not Available
Vapor Density (AIR=1)	N/A	Evaporation Rate Butyl Acetate=1	N/A
Solubility in Water			

Appearance and Odor

Section IV -- Fire and Explosion Hazard Data

Flash Point (Method Used)	N/A	Flammable Limits	N/A	LEL	N/A	UEL	N/A
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Extinguishing Media
Dry chemical, CO₂, Water.

Special Fire Fighting Procedures
Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing if involved in a fire.

Unusual Fire and Explosion Hazards
Not Applicable.

HEALTH HAZARDS (ACUTE AND CHRONIC)

Acute Overexposure (Symptoms and Effects)

Inhalation of dust or fume from cadmium and its compounds may cause irritation of the nose and throat. If high concentrations are inhaled (especially freshly formed fume), a delayed reaction of coughing, chest pain, sweating, chills, shortness of breath and weakness may develop. In severe cases, death may result from pulmonary edema.

Ingestion of cadmium dust may cause nausea, vomiting, diarrhea and abdominal cramps.

Nickel and certain nickel compounds may cause local dermatitis from skin contact. Inhalation may cause upper respiratory irritation. Ingestion of nickel and compounds may cause intestinal disorders.

Chronic Overexposure (Symptoms and Effects)

Long term exposure may cause lung injury (emphysema) and kidney dysfunction (proteinuria). Bone lesions characterized by pain in the back and extremities have also been reported. Inhalation over prolonged periods of time may pose an increased risk of lung cancer and possibly other forms of cancer.