



**MATERIAL SAFETY
DATA SHEET**

SECTION I - GENERAL INFORMATION

BATTERY MANUFACTURER'S MSDS
DISTRIBUTED BY:
DUAL-LITE

MSDS #5

Date Prepared: Jan. 31, 1996

CHEMICAL NAME AND SYNONYMS
Ni/Cd Batteries with pocket plates

TRADE NAME AND SYNONYMS
Type Range

CHEMICAL FAMILY

FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES & SOLVENTS	%	TVL (Units)	ALLOYS AND METALLIC COATINGS	%	TVL (Units)
PIGMENTS			BASE METAL Nickel (Ni)	9-10	1.0 Mg/M ³
CATALYST			ALLOYS Cadmium (Cd)	6	0.5 Mg/M ³
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS Iron (Fe)	20-25	
OTHERS			Plastic Material (Jar, Lid, Ser)	7-15	
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASSES				%	TVL (Units)
Potassium Hydroxide Solution d=1, 2 g/cm ³ (KOH)				10	2.0 Mg/M ³

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H ₂ O=1)	N/A
VAPOR PRESSURE (mm Hg.)		PERCENT, VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____ =1)	
SOLUBILITY IN WATER	Complete		
APPEARANCE AND ODOR	Electrolyte - colorless, odorless solution		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used) None	FLAMMABLE LIMITS	Lel	Uel
EXTINGUISHING MEDIA Dry Chemical			
SPECIAL FIRE FIGHTING PROCEDURES Use full body protective clothing and full facepiece. Self-contained breathing apparatus in a positive pressure mode.			
UNUSUAL FIRE AND EXPLOSION HAZARDS Molten and overheated Cd and Ni produce fume, vapor or dust. Under these conditions Ni or Cd could cause cancer. KOH is highly caustic; connection to the eyes and the skin must be avoided.			

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE

Skin contact - Severe irritation and inflammation. Eye contact - Severe irritation; possible corneal damage.
Ingestion - Severe inflammation of internal tissues.

EMERGENCY AND FIRST AID PROCEDURES

Skin - Flush liberally with water. Obtain medical attention. Eyes - Flush with water, bathe eyes with phosphate buffer, obtain immediate medical attention. Ingestion - Drink vinegar or lemon juice mixed with equal amounts of water, contact physician immediately.

SECTION VI - REACTIVITY DATA

STABILITY

UNSTABLE

CONDITIONS TO AVOID

STABLE

X

INCOMPATIBILITY (*Materials to avoid*)

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS
POLYMERIZATION

MAY OCCUR

CONDITIONS TO AVOID

WILL NOT OCCUR

X

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Wear protective clothing (rubber boots, gloves, etc.), abolish the reasons or causes.

WASTE DISPOSAL METHOD

Spilled KOH must be neutralized using weak acids (p.e. Boric Acid). KOH Solution should not be emptied in common sewer systems. Consult waste disposal business for proper disposition.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (*Specify type*)

None for normal use.

VENTILATION

LOCAL EXHAUST

Maintain adequate ventilation.

SPECIAL

MECHANICAL (*General*)

OTHER

PROTECTIVE GLOVES

Rubber or plastic

EYE PROTECTION

Chemical safety glasses

OTHER PROTECTIVE EQUIPMENT

Rubber aprons

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

No eating and smoking during handling, wash thoroughly after working. Protect against physical damage.

OTHER PRECAUTIONS

Do not smoke or cause sparks around battery.