

MSDS Report

MATERIAL SAFETY DATA SHEET

Name of Sample : Ni-Cd BATTERIES
Model : N/A
Trade Name : KR60D4000
AAA,AA,A,N,18650,SC,C,D,F

Applicant : ZHONGSHAN HONGFENG BATTERY Co.,LTD
Address : NO. 12, Pansha Industrial Street, Pansha Village, Nanlang Town,
Zhongshan City, Guangdong Province, China

Report No. : HSO180112132GRM
Date of Issue : Jan.13,2018

Prepared and checked by



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The MSDS was prepared by Shenzhen HSO. Test Technology Co., Ltd.
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Section 1- PRODUCT AND COMPANY IDENTIFICATION

-Applicant : ZHONGSHAN HONGFENG BATTERY Co.,LTD
-Address : NO. 12, Pansha Industrial Street, Pansha Village, Nanlang Town,
Zhongshan City, Guangdong Province, China
-Product code : Ni-Cd BATTERIES
-Model No. : KR60D4000
AAA,AA,A,N,18650,SC,C,D,F
-Trade Name : N/A
-TEL : +86-0760-85218812
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-E-mail : hfbattery8813@126.com

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Item number: **HSO180112132GRM**



Section 2 – Composition/Information on Ingredient

Component	CAS No.	%1
Cadmium	7440-43-9	7-9
Cadmium hydroxide	21041-95-2	18-20
Nickel (powder)	7440-02-0	1
Nickel hydroxide	12054-48-7	17-19
Potassium hydroxide	1310-58-3	3-4
Nylon	N/A	5-7
Steel	N/A	35-37
H ₂ O	N/A	7-9
Other	N/A	<1
Total		100

Section 3 – Hazards Identification

Eyes

Contact with electrolyte solution inside battery causes very rapid, severe damage. Extremely corrosive to eye tissues. May result in permanent blindness.

Skin

Contact with electrolyte solution inside battery may cause serious burns to skin tissues. Contact with nickel compounds may cause skin sensitization, resulting in chronic eczema or nickel itch.

Inhalation

Dust generated during activation procedures may cause varying degrees of irritation to the nasal mucous membranes and respiratory tract tissues varying from mild irritation of nasal mucous membranes to damage of lung tissues proper. Inhalation of cadmium compounds may cause dry throat, cough, headache, vomiting, chest pain, and/or chills. Excessive overexposure may result in pulmonary edema, breathing difficulty, and prostration.

Ingestion

Ingestion of electrolyte solution causes tissue damage to throat area and gasp/respiratory tract. Ingestion of cadmium and/or nickel compounds causes nausea and intestinal disorders.



Section 4 – First Aid Measures

Battery Electrolyte

Eye Contact

Flush with plenty of water for at least 20 minutes. Get immediate medical attention.

Skin Contact
least

Remove contaminated clothing and flush affected areas with plenty of water for at least 20 minutes.

Ingestion

Do not induce vomiting. Dilute by giving large volumes of water or milk. Get immediate medical attention. Do not give anything by mouth to an unconscious person.

Inhalation

Move to an outdoor location. Give oxygen or artificial respiration if needed. Get immediate medical attention.

Nickel and Cadmium

Compounds

Skin contact

Wash with cold water and soap for 15 minutes.

Section 5 – Fire Fighting Measures

Special Fire Fighting Procedures

Use self-contained breathing apparatus to avoid breathing toxic fumes. Wear protective clothing and equipment to prevent potential body contact with electrolyte solution or mixture of water and electrolyte solution. Disconnect or cut all cables to and from battery – especially ground connection.

Unusual Fire and Explosion Hazards

Electrolyte solution is corrosive to all human tissues. It will react violently with many organic chemicals, especially nitrocarbons and chlorocarbons. Electrolyte solution reacts with zinc, aluminium, tin and other active materials releasing flammable hydrogen gas.



Section 6 – Accidental Release Measures

Electrolyte Solution Spills

Small (up to 19 liters / 5 gallons)

Flush with water and neutralize with dilute citric acid.

Large

Contain material in suitable containers or holding area. DO NOT allow material to enter sewers, streams, or storm conduits. Recover material with vacuum truck and dispose of properly. Reportable Quantity: 453.6 kg / 1000 pounds.

Section 7 – Handling and Storage

The cells and the batteries may be highly charged and are capable of high energy discharge. Handle cells with care to avoid shorting or misuse that will result in a rapid, uncontrolled electrical, chemical, or heat energy release.

Do not transport activated batteries without vent caps in place.

When removing battery from service, visually inspect for leakage prior to handling. If leakage has occurred follow Spill

Management Procedures.

Store in sealed packaging and in normal vertical position at temperature $+20^{\circ}\text{C}$ (68°F) $\pm 15^{\circ}\text{C}$ ($\pm 27^{\circ}\text{C}$) and humidity inferior at 70%.

Keep away from exposed flames, sparks, and other ignition sources.

The product is safe for sea transportation and not DGR.



Section 8 – Exposure Controls, Personal Protection

Exposure control			
Ingredients	CAS #	EINECS#	Exposures Limits
Cadmium (as	7440-43-9	231-152-8	5.0 mg/m ³ dust – OSHA
Cadmium and	21041-95-	244-168-5	0.05 mg/m ³ ACGIH CEILING-Fume
Cadmium	2	231-111-4	1 mg/m ³ – OSHA
hydroxide)	7440-02-0	235-008-5	
Nickel (as	12054-48-	215-181-3	2 mg/m ³ ACGIH CEILING-Air
Nickel and	7		
Nickel peroxide)	1310-58-3	244-166-4	0.1 mg/m ³ OSHA
Electrolyte solution			
(18-30% Potassium	21041-93-	231-159-6	1 mg/ m ³ dust – OSHA
hydroxide)	0		
Cobalt (as			

Personnal protection

Perform battery activation procedures in a well-ventilated area. Battery operating areas must be well ventilated for removal of potentially dangerous and harmful gases generated. Normal reactions inside the battery liberate explosive and flammable hydrogen gas.

Respiratory Protection

Use NIOSH approved mist respirator during activation and actual usage to maintain exposure levels below the TWA.

Eye Protection

Use splash goggles or face shield whenever handling a battery.

Hand Protection

If exposure to electrolyte solution or dried salts is likely, use any water-insoluble, non-permeable glove, i.e., synthetic rubber. DO NOT use leather or fabric gloves.

Other protective equipment

Rubber apron or rainwater, or equivalent if exposure to electrolyte solution is likely



Section 9 – Physical and Chemical Properties

Boiling Point:	Not Applicable	Melting Point:	Not applicable
Vapor Pressure:	2 mm Hg at 68°F / 20°C	Vapor Density:	Not applicable
Specific Gravity:	1.17 - 1.30 (electrolyte)	Evaporation Rate:	Not Determined
Solubility in water:	Electrolyte solution is completely soluble.	Remainder:	is insoluble

Section 10 – Stability And Reactivity

CAUTION: NEVER ACTIVATE OR TOP OFF WITH ACID

Incompatibilities

Aluminum, zinc, tin and other active metals, acid, chlorinated and aromatic hydrocarbons, nitrocarbons, halo carbons. Polyethylene will react with electrolyte solution to form oxyacetylene which is spontaneously combustible.

Hazardous Decomposition

Nickel compounds, cadmium compounds, and potassium hydroxide.

Products

Note that normal reactions inside battery liberate explosive and flammable hydrogen gas.

Do not seal battery from atmosphere. Hazardous Polymerization will not occur.

Section 11 – Toxicological Information

Ingredients	CAS #	EINECS#	LD50 (Oral, Rat)
Cadmium hydroxide	21041-95-2	244-168-5	Not available
Nickel peroxide	12054-48-7	235-008-5	1600 mg/kg
Potassium hydroxide	1310-58-3	215-181-3	365 mg/kg
Cobalt hydroxide	21041-93-0	244-166-4	Not available



Section 12 – Ecological Information

The electrolyte solution (18-30% Potassium Hydroxide) is very toxic to aquatic organisms. It may cause long-term adverse effects in the aquatic environment.

Section 13 – Disposal Method

Dispose of batteries according to government regulations.

Section 14 – Regulatory Information

Special requirement be according to the local regulatoryies.

Section 15 – Other Information

The data in this Material Safety Data Sheet relates only to the specific material designated herein.

Section 16 – Measures for fire extinction

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.

Issue date: Jan.13,2018

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