

## MATERIAL SAFETY DATA SHEET

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product name: ZINC-CARBON BATTERY  
Model: R03,R6  
Company: NINGHAI HENGJIU BATTERY Co., Ltd.  
Address: NO.158-1, Xidian South Road, Xidian Town, Ninghai, Zhejiang, 315613,P.R.China  
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Emergency Phone: 86-13958247688  
Msds Date: 2018-01

### SECTION 2: INFORMATION ON INGREDIENTS

Product name: ZINC-CARBON BATTERY

Ingredient	Concentration	CAS NO.	EC No.
Zinc	34~38%	7440-66-6	231-175-3
Electrolytic manganese	23~28%	7439-96-5	231-105-1
Copper	6~10%	7440-50-8	215-159-6
Iro	6%	7439-89-6	231-096-4
Zinc Chloride	4~6%	7646-85-7	231-592-0
Acetylene Black	3.7~4.7%	7440-44-0	231-153-3
Water(H <sub>2</sub> O)	7.3~17%	7732-18-5	231-791-2
Lead	<700ppm	7439-92-1	231-100-4
Cadmium	<10ppm	7440-43-9	231-152-8

### SECTION 3: HAZARDS IDENTIFICATION

#### Hazards Identification:

The battery is not restricted to IATA DGR according to special provision A123 and is not restricted to IMDG CODE according to special provision 304.

#### Emergency Overview:

Avoid contact and inhalation the interials.Emit toxic fumes under fire conditions.

### SECTION 4: FIRST-AID MEASURES

#### Skin Exposure:

If the internal battery materials of an opened battery cell come into contact with the skin, immediately flush with plenty of water.

#### Eye Exposure:

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes.Assure adequate flushing by separating the eyelids with fingers.Call a physician.

#### Inhalation Exposure:

If potential for exposure to nickel fumes or dusts occurs, remove immediately to fresh air and seek medical attention.

**Oral Exposure:**

If swallowed, do not induce vomiting. Seek immediate medical attention.

**SECTION 5: FIRE FIGHTING MEASURES**

**Extinguishing Media:**

Suitable: Dry chemical, carbon dioxide and appropriate foam.

**Firefighting:**

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific hazards: Emit toxic fumes under fire conditions.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Procedure of Personal Precaution:**

Exercise appropriate precautions to minimize direct contact with skin and eyes.

**Methods for Cleaning up:**

Sweep up with spade, place into a dry, clean, lidded container for disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**SECTION 7 :HANDLING AND STORAGE**

**Handlind:**

Wear appropriate protective clothing and safety gloves. Avoid contact and inhalation the internal materials. Keep away from ignition sources, heat and flame. Incompatibilities: strong oxidizing agents, corrosives and foods. Such batteries must be packed in inner packaging in such a manner as to effectively prevent short circuits. No smoking at working site.

**Storage:**

Store in a cool, well-ventilated area. Keep away from ignition sources, heat and flame. Store in a tightly closed container. Incompatibilities: strong oxidizing agents, corrosives and foods.

**SECTION 8: EXPLOSURE CONTROL/PPE**

**Engineering ingcontrols:**

Use ventilation equipment if available. Safety shower and eye bath.

**Personal Protective Equipment:**

Respiratory System: Wear protective mask if needed.

Eys: Wear safety goggles if needed.

Clothing: Wear appropriate protective clothing.

Hand: Wear safety gloves.

**Other Protect:**

No smoking, drinking and eating at working site. Wash thoroughly after handling.

**SECTION 9: PHYSICAL/CHEMICAL PROPERTIES**

**Appearance:** Multicolor cylinder plastics film shell

**Odor:** Odorless

**Melting Point/°C:** >350°C

**Solubility:** Partial soluble in water

## SECTION 10:STABILITY AND REACTIVITY

### Stability:

Stable under normal temperatures and pressures.

### Conditions to Avoid:

Avoid exposure to heat and open flame.Do not puncture,crush or incinerate.Prevent short circuits.

Prevent movement which could lead to short circuits.Do not attempt to recharge this battery.

### Materials to Avoid:

Strong oxidizing agents,corrosives.

### Hazardous Polymerization:

Will not occur.

### Hazardous Decomposition Products:

When exposed to extreme heat/fire,batteries may rupture leaking corrosive material and/or emit toxic fumes.Burning batteries may emit toxic fumes of zinc oxide and manganese oxide.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Toxicity Data:

Not available.

### Irritation Date:

The internal battery materials may cause irritation to eyes and skin.

## SECTION 12: ECOLOGICAL INFORMATION

No data available.

## SECTION 13: DISPOSAL CONSIDERATION

### Appropriate Method of Disposal of Substance:

Dispose of in accordance with all applicable federal,state and local regulations.

## SECTION 14: TRANSPORT INFORMATION

**IATA:** Not restricted to IATA DGR according to special provision A123.

**IMO:** Not restricted to IMDG CODE according to special provision 304.

## SECTION 15: REGULATORY INFORMATION

Manganese Dioxide Battery is unregulated for purpose of transportation by U.S.Department of Transportation (DOT),International Civil Aviation Administration (ICAA),International Air Transport Association (IATA) and the International Maritime Dangerous Goods regulations (IMDG).The only DOT requirement for shipping these 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).”The only requirements for shipping these batteries by ICAO and IATA is Special Provision A123 which states:“An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit(e.g.in the case of batteries,by the effective insulation of exposed terminals:or in the case of equipment,by disconnection of the battery and protection of exposed terminals)is forbidden from transportation.”The International Maritime Dangerous

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## NINGHAI HENGJIU BATTERY CO. ,LTD

### ZINC-CARBON BATTERY(DRY BATTERY 1.5V)

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Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says:“Batteries,dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provisions of this Code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are : alkaline-manganese, zinc-carbon, nickel metal hydride and nickel-cadmium batteries.”The requirements for shipping these batteries,in all modes of transportation,arethat they be separated from each other to prevent short-circuits and to prevent movement that could lead to short-circuits.Products must also be packed in strong packaging that can withstand the rigors normal to transportation.

### SECTION 16: OTHER INFORMATION

**Lastest Edition:** 2018.01.06

**Made By:** NINGHAI HENGJIU BATTERY CO.,LTD

