

Report No.: XLZ20130102

# MSDS Report

Samples                      Zinc-Manganese Dry Battery

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Client Unit                  Suzhou Xinlvzhou Electronics Co., Ltd

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Client Address              No.777# ,West yangchenghu Road,  
Xiangcheng District, Suzhou City, JiangSu Province

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Report in electronic version is only for client's preview and reference.  
For confirmative content, formal test report shall prevail.

## Material Safety Data Sheet

### Section 1 - Chemical Product and Company Identification

**Product Name:** R03P R6P R14P R20P 6F22 Zinc-Manganese Dry Battery

**Trade Name:** Warriors battery

**Sample Code:** XLZ080526

**Manufacture:** Suzhou xinlvzhou Electronics Co., Ltd.

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### Section 2 - Composition/Information on Ingredient

Chemical Name	Molecular Formula	CAS No.	Weight (%)
Zinc	Zn	7440-66-6	26
Manganese Dioxide	MnO <sub>2</sub>	1313-13-9	55
Carbon	C	7440-44-0	12
Zinc Chloride	ZnCl <sub>2</sub>	7646-85-7	6
Ammonium chloride	NH <sub>4</sub> Cl	12125-02-9	1
Copper	Cu	7440-50-8	1
Iron	Fe	7439-89-6	2
Water	H <sub>2</sub> O	7732-18-5	13~17
Polypropylene	(C <sub>3</sub> H <sub>6</sub> ) <sub>n</sub>	9003-07-0	2~3

### Section 3 - Hazards Identification

**No specific health hazards for normal use.**

#### **Routes of Entry**

Eyes, Skin, Inhalation, Ingestion.

#### **Health Hazards**

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents. Leaking material exposure to skin, eyes may cause irritation. Inhalation of fumes may cause respiratory irritation.

#### **Sign/Symptoms of Exposure**

May be a reproductive hazard. Leaking can cause thermal and chemical burns upon contact with the skin.

### Section 4 - First Aid Measures

#### **Eyes**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

#### **Skin**

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

#### **Inhalation**

Remove from exposure and move to fresh air immediately. Use oxygen if available.

#### **Ingestion**

Do not induce vomiting. Call a physician immediately.

### Section 5 - Fire Fighting Measures

**Flash Point:** N/A.

**Auto-Ignition Temperature:** N/A.

#### **Extinguishing Media**

CO<sub>2</sub>, dry chemical.

#### **Special Fire-Fighting Procedures**

Self-contained breathing apparatus.

#### **Unusual Fire and Explosion Hazards**

Cell may vent when subjected to excessive heat-exposing battery contents.

#### **Hazardous Combustion Products**

Carbon monoxide, carbon dioxide, and other metal oxide fumes.

## **Section 6 - Accidental Release Measures**

#### **Steps to be Taken in case Material is Released or Spilled**

If the battery is accidental broken and leaks out, wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can.

The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled material with absorbent.

#### **Waste Disposal Method**

It is recommended to discharge the battery to the end, handing in the abandoned battery to related department unify, dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

## **Section 7 - Handling and Storage**

The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

Do not short circuit terminals, or charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

#### **Precautions to be taken in handling and storing**

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided.

Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

### **Other Precautions**

Do not short or install with incorrect polarity.

## **Section 8 - Exposure Controls, Personal Protection**

### **Respiratory Protection**

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting batteries. Respiratory Protection is not necessary under conditions of normal use.

### **Other Protective Clothing or Equipment**

Not necessary under conditions of normal use.

personal protection is recommended for venting batteries: respiratory protection, protective gloves, protective clothing and safety glass with side shields.

## **Section 9 - Physical and Chemical Properties**

**Nominal Voltage:** 1.5V

**Appearance characters:** Blue with odorless columned battery.

## **Section 10 - Stability and Reactivity**

### **Stability**

Stable for normal.

### **Conditions to Avoid**

Heating, fire, mechanical abuse and electrical abuse.

### **Hazardous Decomposition Products**

When exposed to fire or extreme heat, batteries may emit toxic fumes.

## **Section 11 - Toxicological Information**

Inhalation, skin contact and eye contact are possible when the battery is opened. Exposure to internal contents, the corrosive fumes will be irritation to skin, eyes

and mucous membranes. Overexposure can cause symptoms of non-fibroid lung injury and membrane irritation.

## Section 12 - Ecological Information

When promptly used or disposed the battery does not present environmental hazard. When disposed, keep away from water, rain and snow.

## Section 13 - Disposal Considerations

### **Appropriate Method of Disposal of Substance or Preparation**

Dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency.

## Section 14 - Transport Information

Warriors batteries are considered to be "Dry cell" batteries and are unregulated for purpose of transportation by the U.S. DOT, ICAO, IATA and 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 requirement 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 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 provision of this Code provided the batteries are securely packed and protected against short-circuits. Example of such batteries are : alkali-manganese, zinc carbon, nickel metal hydride and nickel-cadmium batteries. Such battery have been packed in inner packaging in such a manner as to effectively prevent short circuit and movement that could lead to short-circuit.

**Transport Fashion:** By air, by sea, by railway, by highway.

## Section 15 - Regulatory Information

### Law Information

- 《Dangerous Goods Regulation》
- 《Recommendations on the Transport of Dangerous Goods Model Regulations》
- 《International Maritime Dangerous Goods》
- 《Technical Instructions for the Safe Transport of Dangerous Goods》
- 《Classification and code of dangerous goods》
- 《Occupational Safety and Health Act》 (OSHA)
- 《Toxic Substances Control Act》 (TSCA)
- 《Consumer Product Safety Act》 (CPSA)
- 《Federal Environmental Pollution Control Act》 (FEPCA)
- 《The Oil Pollution Act》 (OPA)
- 《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》 (SARA)
- 《Resource Conservation and Recovery Act》 (RCRA)
- 《Safety Drinking Water Act》 (CWA)
- 《California Proposition 65》
- 《Code of Federal Regulations》 (CFR)

In accordance with all Federal, State and Local laws.

## Section 16 - Additional Information

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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