

## Material Safety Data Sheet

According the European directive 2006/66/EC

### 1. Chemical Product

MSDS Name: Dry battery

Manufacturer: Ningbo Osel Battery Co.,Ltd

Add: Wangchun Industrial Park,Ningbo,China

Tel:0086-574-88440668

### 2.Composition/Information on Ingredients

Chemical Nature:Alkaline Manganese Dioxide

INGREDIENTS		APPROXIMATE PERCENT OF TOTAL WEIGHT %
<b>1.1. ACTIVE MATERIALS</b>		
Manganese Dioxide (MnO <sub>2</sub> )		39
Zinc Powder (Zn)		16.6
Water (H <sub>2</sub> O)		8.5
Potassium Hydroxide (KOH)		5.5
Conductive Material		3.0
<b>1.2.PASSIVE MATERIALS</b>		APPROXIMATE PERCENT OF TOTAL WEIGHT %
PIGMENTS	ZnO	0.40
BASS METAL ALLOY	Fe	23.0
	Ni-plating	0.18
	brass	3.8
	Bi	0.01
	In	0.01
OTHERS	PP	1.5
METALLIC TRACES	Hg	<0.0001
	Pb	<0.0040
	Cd	<0.0020

**Heavy metal content is according with 2006/66/EC**

**This product conforms to the requirements of IEC Publication 86.**

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### 3.Hazards identifications:

The battery should not be opened or discarded in fire or recharged or used improvely, or it could leakage or exposure.

The ingredient and their combustion could be harmful.

Electrolyte and Zinc: May cause sensitization by skin touch/when spilled, may raze the surface of plastic, leather and paint, underground and surface water.

### 4. First-aid measures:

- 1)In case of excessive inhalation remove the person to fresh air and at rest obtain medical advice
- 2)Remove contaminated clothing, Wash affected areas with plenty of water and soap, If irritation occurs, consult a physician.
- 3)Rinse eyes immediately with running water for at least ten minutes.Consult an ophthalmologist
- 4)Rinse mouth with water.Give plenty of water to drink. Don't induce vomiting. Obtain medical advice.

### 5.Fire-fighting measures

- 1) Suitable extinguishing media: Carbon Dioxide(CO<sub>2</sub>),foam, dry chemical power
- 2)Extinguishing media not to be used: Never use a direct water jet
- 3)Personal protective equipments: Wear full protective clothing. Use self contained breathing apparatus.
- 4) Because of only keep about 10ml auto perfume in care. Even if fire, It can be extinguished by extinguisher.

### 6.Accidental release measures:

Personal precaution:

\*Keep batteries out of the reach of children, especially those batteries fitting within

\*He limits of the truncated cylinder as defined in ISO/DP 812/2.2 page 17

\*In the case of ingestion of a cell or battery the person involved should seek medical assistance promptly.

\*\*Equipment intended for use by children should have battery compartments which are tamper-proof.

The circuits of equipment designed to use alternative power supplies should be such as to eliminate the possibility of the battery being charged.

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### 7.Storage and handling

\*Storage: Temperature:10℃~25℃ (<30℃) , humidity:40%~90%, store product in well-filled, appropriate coated and rightly closed containers avoiding influence of air,light and humidity, at cool and constant temperature

\*Handling: Accidental short circuit for a few seconds will not seriously affect the battery, but prolonged short circuit will cause the battery to lose energy,and can cause the safety release vent to open.

\*Charging: Recharging can cause battery leakage or high pressure rupture. Inadvertent charging can happen if a battery is installed backwards.

### 8. Personal protection

To protect hands,eyes and skin,the use of appropriate chemical resistant gloves,safety glasses and suitable protective clothing is strictly recommended.

### 9.Physical and chemical Characteristics

Boiling Point N.A.

Melting Point N.A

Solubility in Water N.A

Appearance and Odor Pillar shape,odorless

### 10.Stability and Reactivity

Good stability at standard temperature.

### 11.Toxicological information

The product is multi component mixture for which no toxicological date exists

### 12.Ecological information

Precautions avoid disposing into drainage systems and in the environment

### 13.Disposable considerations

Don't dispose of in environment or into sewerage, if recycling is not possible,the product and its container have to be disposed of in accordance with your local legislation and regulations.

### 14.Transport information

Road/air/sea allowed, but, must be packed well to protect from short-circuiting.

### 15.Regulatory information

Expiration date is at the bottom of battery