

# Material Safety Data Sheet

## 1. Chemical Product and Company Identification

Date of Issue : 1 Jan 2022  
Product Name : Zinc-Manganese Alkaline Battery  
Supplier : Guangzhou Tiger Head Battery Group Co., Ltd  
Floor 28, Top Plaza East Tower, No.222 Xingmin Road,  
Zhujiang New Town, Tianhe District, Guangzhou, China  
Emergency Phone No. : 020-85525623 ext. 8901  
Manufacturer : YuNan Tiger Head Power Supply Science and Technology Ltd.  
Shaziling, Ducheng Town, YuNan County,  
GuangDong Province

## 2. Composition/ Information on Ingredients

Chemical/Size	LR03	LR6	LR14	LR20	CAS
	AAA SIZE	AA SIZE	C SIZE	D SIZE	Registry No
Weight	11.0g	23.5 g	70.0 g	140.0 g	
Mercury	Not Detected	Not Detected	Not Detected	Not Detected	7439-97-6
Cadmium	Not Detected	Not Detected	Not Detected	Not Detected	7440-43-9
Lead	Not Detected	Not Detected	Not Detected	Not Detected	7439-92-1
Zinc Powder	13%	15.5%	16%	18.7%	7440-66-6
Carbon	3.2%	3.5%	3.5%	3.7%	7782-42-5
Manganese Dioxide	36%	41%	40%	42%	1313-13-9
Iron	25%	19%	19.5%	18.8%	7439-89-6
Copper	1.5%	1.5%	1.5%	0.5%	7440-50-8
Polystyrene	1.33%	1.33%	1.2%	1.1%	9003-53-6
Cellulose	0.8%	0.7%	0.8%	0.5%	9004-34-6
Potassium hydroxide	9.4%	8.5%	8.5%	7%	1310-58-3
Water	9.4%	8.5%	8.5%	7%	7732-18-5
Zinc oxide	0.37%	0.47%	0.5%	0.7%	1314-13-2
	100%	100%	100%	100%	

The components in this section may only represent a hazard, if the batteries are damaged.



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## 3. Hazards Identification:

**Warning:** When recharge batteries or discard in the fire or use used battery with new one, or connected improperly may cause battery vent, leak or explode.

Damaged batteries may cause skin and eye burn, may cause respiratory tract irritation.

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## 4. First-aid Measure

General speaking it is not expected to result in situation that requires first-aid measure, except the damaged batteries may cause they release the contents.

**Inhalation:** If vapours or fumes from vented or leaked batteries are irritation, move to fresh air and get medical attention.

**Eyes:** Check for and remove any contact lens, flush eyes with plenty of water, holding eyelids open, for at least 20 minutes, get medical help.

**Skin:** Immediately move the metal fragments and chemical components flush skin with plenty of water at least 15 minutes, get medical, if necessary,

**Ingestion:** Get immediately medical attention, do not induce vomiting or give a liquid to unconscious person.

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## 5. Fire Fighting Measure:

**Extinguishing media:** Use appropriate agent for adjacent fire.

**Flash point:** Not available.

**Auto-ignition temperature:** Not available.

**Flammable limits:** Not available.

**Products of combustion:** Zinc oxide, manganese oxide.

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## 6. Accidental Release Measure:

Not available.

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## 7. Handling and Storage:

Precaution: Handling and transfer the products with care, make sure the packing always in good condition.

Damaged packing may cause batteries contact together, in this case batteries may short circuit or improperly connected, it cause batteries venting, leaking or exploding.

Storage: Store in a dry, cool and well-ventilated area.

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## 8. Exposure control / Personal protection

Exposure control: If necessary, set local exhaust ventilation.

Personal protection: Gloves, safety glass, dust respirator.

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## 9. Physical and Chemical Properties

Physical State and Appearance: Solid.

Melting Point : Not applicable.

Vapour pressure: Not available.

PH (1% soln/water): Not available.

Solubility: Insoluble.

Volatility: Not available.

Specific gravity: (water=1) not applicable

Odour: Odourless.

Taste: Not available.

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## 10. Stability and Reactivity

Stability: The products are stable.

Instability temperature: Not available.

Incompatibility: Reactive with acids and alkalis.

Corrosivity: None.

Hazardous Polymerization: Will not occur.

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## 11. Toxicological information

Note: Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.

Toxicity to Animals: Not applicable.

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Chronic Effects on Human: Not applicable.

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## 12. Ecological information

This product has not been tested for environmental effects.

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## 13. Disposal consideration

Waste disposal: Consult your local or regional authorities, disposal maybe subject to national, state, or local laws.

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## 14. Regulatory information

ACGH: American Conference of Government Industrial Hygiene.

IARC: International Agency for Research Cancer.

NPT: US National Toxicology Program.

NIOSH: National Institute of Occupational Safety and Health

ACGIH, documentation on TLVS and BELS 1992-1993

ACGIH, threshold limit values, current listing

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## 15. Other information

Warning wordings: "Keep out reach of children"

"Do not recharge or discard in fire or use used battery with new one, make sure polarity"

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## 16. Transportation Shipping

The dry cell battery manufactured and sold by Guangzhou Tiger Head Battery Group Co., Ltd. such batteries have been packed in inner packaging in such a manner as to effectively prevent movement which could lead to short circuits, complies with IMDG code, Amendment 40-20 by IMO. The dry cell battery is non-dangerous goods and should not be prohibited for sea shipment by any major international regulatory bodies.

