Safety Data Sheet

According to HCS-2012 APPENDIX D TO §1910.1200

1. Identification

(a) Product identifier

Product name: Zinc Manganese Battery

(b) Other means of identification

Product description: Alkaline battery
Voltage: 12V, 1.5V, 9V

(c) Recommended use of the chemical and restrictions on use

Recommended use: For the remote control.
Restriction on use: No information available.

(d) Details of the supplier of the product

Company name: ZHONGSHAN YONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.
Address: Zhongshan Gangkou Town Meijing Road 5#
Postcode: 528447
E-mail: yongyuan-888@sohu.com
Telephone: +86-760-88480989
Fax: +86-760-86746788

(e) Emergency phone number

+86-18928126958

2. Hazard(s) identification

(a) Classification of the chemical

The battery is considered as an article, and this product is not classified as hazardous.

(b) Label elements

Pictogram(s): No pictogram is used.
Signal word: No signal word is used.
Hazard statements: Not classified.
Precautionary statements: Not classified.

(c) Description of any hazards not otherwise classified

Exposure to the ingredients contained within the battery pack could be harmful under some circumstances.

(d) Ingredient with unknown acute toxicity

No information available.

3. Composition/information on ingredients

(a) Mixtures information: ingredients contained within the battery

Chemical name	CAS No.	Concentration
Zinc	7440-66-6	8.6%
Manganese dioxide	1313-13-9	48.3%
Graphite	7782-42-5	4.27%

Potassium permanganate	7722-64-7	0.8%
Diaphragm paper	11132-73-3	0.01%
Iron	7439-89-6	31.6%
Potassium hydroxide	1310-58-3	3.32%
Plastic material(PVC)	9002-86-2	3.1%

4. First-aid measures

(a) Description of first aid measures

Caution! No effect under routine handling and use. If exposure to internal materials within cell due to damaged outer metal casing, the following actions are recommended.

Inhalation: If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.

Skin contact: If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately.

Eye contact: If electrolyte comes into contact with eyes, wash with copious amounts of water for 15 minutes, and contact a physician.

Ingestion: Ingestion is unlikely under normal condition. If electrolyte leakage occurs and ingested, do not induce vomiting. Get medical aid immediately. Never give anything by mouth to an unconscious person.

(b) Most important symptoms/effects, acute and delayed

Under normal condition of use, the battery is hermetically sealed. Contents of open battery can cause skin irritation, severe eye irritation, and respiratory irritation, serious chemical burns of mouth, esophagus and gastrointestinal tract.

(c) Immediate medical attention and special treatment

No information available.

5. Fire-fighting measures

(a) Extinguishing media

Suitable extinguishing media: Use any class of extinguishing medium.

Unsuitable extinguishing media: No information available.

(b) Special hazards arising from the chemical

Battery can be overheated by an external source or by internal shorting and develop metal hydroxide mist. In fire situations fumes containing, zinc may evolved. Toxic vapor may release in case of fire.

(c) Special protective equipment and precautions for fire-fighters

Cool exterior of battery if exposed to fire to prevent rupture.

Fire fighters should be wear self-contained breathing apparatus.

6. Accidental release measures

(a) Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Review Section 5 and Section 7 sections before proceeding with clean-up. Use proper personal protective equipment as indicated in Section 8. Appropriate ventilation. If electrolyte leaks or spills, do not touch or walk through electrolyte.

(b) Methods and materials for containment and cleaning up

Remove all sources of ignition or heat. Stop leak if safe to do so. Move containers from spill area. Carefully collect undamaged batteries in a clean, dry and appropriate container for reuse or disposal. If electrolyte leaks or spills, collect all released material in an appropriate container before proper disposal.

7. Handling and storage

(a) Precautions for safe handling

Do not dispose in fire, mix with other battery types, charge above specified rate, connect improperly, or short circuit, which may result in overheating, explosion or leakage of cell contents. Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Be sure to avoid prolonged short circuit since the heat can burn attendant skin and even rupture of the battery cell case. Battery bulk container, coins, metal jewelry, metal work table, metal belt or other equipment for assembly battery may be the source for short circuit. Use effective anti short circuit measures. Do not use organic solvents or other chemical cleaners on battery. Do not disassembly or decompose. Avoid contacting with water, avoid straight sunlight.

(b) Conditions for safe storage, including any incompatibilities

Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.

8. Exposure controls/personal protection

(a) Control parameters

Zinc	N/A
MANGANESE (COMPOUNDS AND DUST), as Mn	NIOSH REL: TWA 1 mg/m^3; ST 3 mg/m^3 OSHA PEL-C: 5 mg/m^3
Graphite	N/A
IRON SALTS, SOLUBLE, as Fe	NIOSH REL-TWA: 1 mg/m^3
Potassium hydroxide	NIOSH REL-C: 2 mg/m^3

(b) Appropriate engineering controls

General room ventilation is sufficient during normal use and handing. Do not install these batteries in sealed, unventilated areas. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

(c) Personal protective equipment

Respiratory protection:	Not necessary under normal conditions.
Hand protection:	Not necessary under normal conditions. Use neoprene or natural rubber gloves if handing an open or leaking battery.
Eye/face protection:	Not necessary under normal conditions. Wear safety glasses with side shields if handing an open or leaking battery.
Skin/body protection:	Not necessary under normal conditions.

9. Physical and chemical properties

(a) Appearance	Solid
(b) Odor	Not available.
(c) Odor threshold	Not available.
(d) pH	Not applicable.
(e) Melting point/freezing point	Not available.
(f) Initial boiling point and boiling range	Not available.
(g) Flash point	Not applicable.
(h) Evaporation rate	Not available.
(i) Flammability	Not available.
(j) Upper/lower flammability or explosive limits	Not applicable.
(k) Vapor pressure	Not applicable.
(l) Vapor density	Not available.
(m) Relative density	Not available.
(n) Solubility(ies)	Not available.
(o) Partition coefficient: n-octanol/water	Not available.
(p) Auto-ignition temperature	Not available.
(q) Decomposition temperature	Not available.
(r) Viscosity	Not applicable.

10. Stability and reactivity

(a) Reactivity

Stable under recommended storage and handling conditions.

(b) Chemical stability

Stable under normal condition.

(c) Possibility of hazardous reactions

When a battery cell is exposed to an external short-circuit, crushed, modification, high temperature, open flames, it will be the cause of heat generation and ignition.

(d) Conditions to avoid

Exposed to an external short-circuit, crushed, modification, high temperature, open flames, incompatible materials, direct sunlight and high humidity.

(e) Incompatible materials

Conductive materials, water, seawater, strong oxidizers and acids.

(f) Hazardous decomposition products

Metal oxides, harmful gas and etc.

11. Toxicological information

(a) Information on the likely routes of exposure

Inhalation: No effect under routine handling and use for sealed battery. If battery is broken, inhale

fume/dust may cause irritation, chemical burns or lung oedema.

Ingestion: No effect under routine handling and use for sealed battery. Harmful if swallowed the electrolyte contained inside the battery. Exposure to the electrolyte contained inside the battery may cause severe chemical burn to mouth, esophagus and gastrointestinal system.

Skin contact: No effect under routine handling and use for sealed battery. Exposure to the electrolyte contained inside the battery may result in chemical burns. Exposure to battery particulate may cause dermatitis.

Eye contact: No effect under routine handling and use for sealed battery. Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

(b) Information on toxicological characteristics

Acute toxicity:	No data available.
Skin corrosion/irritation:	No data available.
Serious eye damage/irritation:	No data available.
Respiratory sensitization:	No data available.
skin sensitization:	No data available.
Carcinogenicity:	Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Germ Cell Mutagenicity:	No data available.
Reproductive Toxicity:	No data available.
STOT-Single Exposure:	No data available.
STOT-Repeated Exposure:	No data available.
Aspiration Hazard:	No data available.

12. Ecological information

(a) Ecotoxicity

When promptly used or disposed, the battery does not present severe environmental hazard.

(b) Persistence and Degradability

No data available.

(c) Bioaccumulative potential

No data available.

(d) Mobility in soil

No data available.

(e) Other adverse effects

If the battery is discarded into the environment, the harmful contents inside may be dangerous.

13. Disposal considerations

(a) Safe handling and methods of disposal

The generation of waste should be avoided or minimized wherever possible. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Do not incinerate, since batteries may explode at excessive temperature. Refer to Section 7-Handling and Storage and

Section 8-Exposure Controls/Personal Protection for additional handling information and protection of employees.

14. Transport information

The product is not regulated as a hazardous material for transportation. (UN TDG Rev.17; IMDG CODE 35-10 edition; IATA DGR 53rd edition)

(a) UN number	Not applicable.
(b) UN Proper shipping name	Not applicable.
(c) Transport hazard class(es)	Not applicable.
(d) Packing group (if applicable)	Not applicable.
(e) Marine pollutant (Yes/No)	No
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)	Not applicable.
(g) Special precautions	Batteries must 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. These products are labeled in accordance to requirements for cargo shipments of Li-polymer batteries and cells.

15. Regulatory information

(a) Safety, health and environmental regulations specific for the product in question

CAS No.	USA TSCA	China IECSC	Canada DSL
7440-66-6	Listed	Listed	Listed
1313-13-9	Listed	Listed	Listed
7782-42-5	Listed	Listed	Listed
7722-64-7	Listed	Listed	Listed
7439-89-6	Listed	Listed	Listed
1310-58-3	Listed	Listed	Listed
Remark: The above-mentioned search results are based on the Non-Confidential Inventory.			

16. Other information, including date of preparation or last revision

(a) Preparation and revision information

Date of previous revision: 02/07/2013 Date of this revision: 11/09/2017

Revision summary: The second SDS, Regular review

(b) Abbreviations and acronyms

ACGIH	American Conference of Governmental Industrial Hygienists
OSHA:	The United States Occupational Safety and Health Administration.
TWA:	time-weighted average
STEL:	Short term exposure limit
DOT:	US Department Of Transportation)
IMDG:	International Maritime Dangerous Goods
IATA:	International Air Transport Association

TSCA:	Toxic Substances Control Act, The American chemical inventory.
DSL	Domestic Substances List
IECSC:	Inventory of existing chemical substances in China.

(c) Disclaimer

The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

---------- End of the SDS ----------