
MSDS Report

Report No.: A001R20161223036

Samples	Alkaline Zn-Mn Battery
Model	LR03 AM4 AAA 1.5V
Client	Guangdong Liwang New Energy Co.,Ltd
Issue Date	2017-01-06

深圳市鑫宇环检测有限公司

Attestation of Global Compliance (Shenzhen) Co., Ltd.

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Material Safety Data Sheet

According to ISO11014:2009 & GB/T16483-2008

Section 1 - Chemical Product and Company Identification

Chemical product information

Sample Description: Alkaline Zn-Mn Battery

Sample Model: LR03 AM4 AAA 1.5V

Sample Receiving Date: 2016-12-23

Sample Uses: ---

Company information

Manufacturer: Guangdong Liwang New Energy Co.,Ltd

Address: Shima Village,Tangxia Town,Dongguan City Guangdong Province China

Tel: 0769-86201111

Fax: 0769-87887512

Post code: 523731

Emergency telephone: 0769-86201111

E-mail: qal@liwangbattery.com

Section 2 - Hazards Identification

Emergency overview: No information available

Classification according to GHS: Not a dangerous substance according to GHS.

Label elements	
Hazard pictogram(s)	No available
Signal word	No available
Hazard statement(s)	No available
Precautionary statement(s)	
Prevention	No available
Response	No available
Disposal	No available

Physical and chemical risk: No information available

Health hazard: No information available

Environmental hazards: No information available

Other hazards: No information available

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Section 3 - Composition, Information on Ingredients

Classification of the substance or mixture:
 substance mixture

Chemical Composition	CAS No.	EC#	Weight (%)
Manganese Dioxide	1313-13-9	215-202-6	40
Zinc Metal	7440-66-6	231-175-3	16
Potassium hydroxide	1310-58-3	215-181-3	8
Water	7732-18-5	231-791-2	10
Iron	7439-89-6	231-096-4	17
Paper	9003-33-2	---	1
Copper	7440-50-8	231-159-6	3
Nylon	25038-54-4	---	2
Graphite	7782-42-5	231-955-3	3

Note: CAS: Chemical Abstracts Service (Division of the American Chemical Society)

EC#: European inventory of Existing commercial Chemical Substances

"---": No Data

Section 4 - First Aid Measures

General information: No special measures required.

After inhalation: Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

After skin contact: Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

After eye contact: Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

After swallowing: Do not induce vomiting. Get medical attention.

The main symptoms: No relevant details information.

Health effects: No relevant details information.

To protect the rescuers advice: No relevant details information.

To the doctor's advice: Need timely medical treatment and special symptoms, no relevant details information.

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Section 5 - Fire Fighting Measures

Suitable extinguishing agents: Use extinguishing agent suitable for local conditions and the surrounding environment . Such as dry powder , CO₂.

Special hazards arising from the substance or mixture: Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150°C(302°F)), when damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

Attention extinguishing method and protective measures: Wear self-contained respirator. Wear fully protective impervious suit.

Section 6 - Accidental Release Measures

Homework personnel protective measures, protective equipment and emergency disposal procedures: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

Steps to be taken in case material is spilled or released and Waste disposal method: Remove ignition sources, evacuate area. Sweep up using a method that does not generate dust. Collect as much of the spilled material as possible, placed the spilled material into a suitable disposal container. Keep spilled material out of sewers, ditches and bodies of water. All waste must refer to the United Nations, the national and local regulations for disposal.

To prevent the secondary disasters prevention measures:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7 - Handling and Storage

Precautions for safe handling: Consumption of food and beverage should be avoided in work areas. Wash hands with soap and water before eating, drinking. Ground containers when transferring liquid to prevent static accumulation and discharge.

Information about fire and explosion protection: Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

Conditions for safe storage, including any incompatibilities: Requirements to be met by storerooms and receptacles. Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

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Section 8 - Exposure Controls, Personal Protection

Occupational exposure limit

Ingredients with limit values that require monitoring at the workplace: no relevant details information.

Biological limit: no relevant details information.

Detection: no relevant details information.

Engineering control

General protective and hygienic measures: The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work.

Respiratory Protection: Use suitable respirator when high concentrations are present.

Personal Protection

Protection of hands	Eye protection
 <i>Protective gloves</i>	 <i>Tightly sealed goggles</i>

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties	
Appearance	---
Form	---
Odour	Odorless.
Electrical properties information	
Voltage	1.5V
Electric capacity	1200mAh
Watt-hour	---

Section 10 - Stability and Reactivity

Chemical stability: Stable in normal circumstances.

Possibility of hazardous reactions: Data not available.

Conditions to Avoid: Flames, sparks, and other sources of ignition, incompatible materials.

Incompatibilities: Oxidizing agents, acid, base.

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Hazardous Combustible Products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

Section 11 - Toxicological Information

Information on toxicological effects

Acute toxicity LD/LC50 Values relevant for classification:

Composition	CAS No.	LC50/LD50
Manganese Dioxide	1313-13-9	LD50: 3478mg/kg
Potassium hydroxide (liquid)	1310-58-3	LD50: 273mg/kg

Note: LC50: lethal concentration, 50 percent kill

LD50: lethal dose, 50 percent kill

Skin irritation/corrosion: No further relevant information available.

Eyes stimulus/corrosion: No further relevant information available.

Breathing or skin irritation: No further relevant information available.

Germ cell respectively: No further relevant information available.

Carcinogenicity: No further relevant information available.

Reproductive toxicity: No relevant details information.

Specific target organ system toxicity disposable contact: No further relevant information available.

Specific target organ system toxicity, repeated contact: No further relevant information available..

Inhalation hazard: No further relevant information available.

Potentially harmful effects: No further relevant information available.

Section 12 - Ecological Information

Ecological toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability: No further relevant information available.

Behaviour in environmental systems

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Ecological effects

Additional ecological information

General notes: Do not allow material to be released to the environment without proper governmental permits.

Other adverse effects: No further relevant information available.

Section 13 - Disposal Considerations

Waste treatment methods and Recommendation: Consult state, local or national regulations to ensure

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proper disposal.

Uncleaned packaging and Recommendation: Disposal must be made according to official regulations.

Section 14 - Transport Information

	IATA	IMDG
UN Number	N/A	N/A
UN Proper shipping name	N/A	N/A
Transport hazard class(es)	N/A	N/A
Packing group	N/A	N/A
Marine pollutant:	No	

Note: IATA: International Air Transport Association

IMDG: International Maritime Dangerous Goods

Transport information: Alkaline Zn-Mn Battery (LR03 AM4 AAA 1.5V) is exempt from dangerous goods. It is considered non-dangerous goods by the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) DGR 58th, IATA Special Provisions A123, International maritime Dangerous Goods Regulations (IMDG) (37-14), or the 《Recommendations on the Transport of Dangerous Goods Model Regulations》 (19th).

S.P.A123 This entry applies to Batteries, electric storage, not otherwise listed in Subsection 4.2–List of Dangerous Goods. Examples of such batteries are: alkali-manganese, zinc-carbon, nickel-metal hydride and nickel-cadmium batteries. Any electrical battery or battery powered device, equipment or vehicle having the potential of dangerous evolution of heat must be prepared for transport so as to prevent

(a) 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 transport; and

(b) accidental activation. The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

Separate batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport.

Transport Fashion: By air, by sea.

Section 15 - Regulatory Information

This Material Safety Data Sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture.

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Composition	CAS No.	IECSC	TSCA	DSL/NDSL	EINECS/ ELINCS/ NLP
Manganese Dioxide	1313-13-9	Listed	Listed	Listed	Listed
Zinc Metal	7440-66-6	Listed	Listed	Listed	Listed
Potassium hydroxide	1310-58-3	Listed	Listed	Listed	Listed
Water	7732-18-5	Listed	Listed	Listed	Listed
Iron	7439-89-6	Listed	Listed	Listed	Listed
Paper	9003-33-2	Listed	Listed	Listed	Not Listed
Copper	7440-50-8	Listed	Listed	Listed	Listed
Nylon	25038-54-4	Listed	Listed	Listed	Not Listed
Graphite	7782-42-5	Listed	Listed	Listed	Listed

Note: EINECS: European Inventory of Existing Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 DSL: Canadian Domestic Chemical Substances
 IECSC: Inventory of Existing Chemical Substances in China
 NDSL: Canadian non-domestic Chemical Substances
 TSCA: Toxic Substances Control Act of USA

Section 16 - Additional Information

Declare to reader

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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End of report

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