



Material Safety Data Sheet

MSDS Code: EBO1403054-M117B
ALKALINE BATTERY

Date of Issue: March 20, 2014
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1. Identification Of Substance

Product Details

Product Name:

Product Model:

LR03, LR6, LR14, LR20, 6LR61, LR1, LR61, 23A, 27A, 4LR44

Manufacturer/Supplier By:

SHENZHEN ALLKEY BATTERY CO., LTD

3/F, Block B, Tongfu Bldg., Xin'an 6th Rd., Bao'an Dist., Shenzhen 518101,
China

Tel: +86-755-29957377

Emergency Tel: +86-13823368991

Fax: +86-755-29957977

2. Composition/Data On Components

COMPONENT	CAS #	% by wt.
Zinc	7440-66-6	16%
Manganese Dioxide	1313-13-9	41.8%
Stainless Steel	12681-83-3	16%
Potassium Hydroxide	1310-58-3	15%
Water	7732-18-5	7%
Graphite	7782-42-5	3%
Others	/	1.2%

3. Hazards Identification

Under normal conditions of use, the battery is hermetically sealed.

Ingestion: Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

Inhalation: Contents of an open battery can cause respiratory irritation.

Skin Contact: Contents of an open battery can cause skin irritation and/or chemical burns.

Eye Contact: Contents of an open battery can cause severe irritation and chemical burns.

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: Get medical aid at once. Immediately remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Discard contaminated



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Inhalation: clothing in a manner which limits further exposure. Get medical aid immediately. Remove from exposure and move to fresh air immediately. Use oxygen if available. Use oxygen device such as mask or bag.

Ingestion: Do not induce vomiting. Get medical aid immediately.

Note to Physician: May be toxic to the body. Wash out the solution with water promptly in an emergency. Treat symptomatically and supportively.

5. Fire Fighting Measures

Flash Point: N/A.

Auto-Ignition Temperature: N/A.

Extinguishing Media: Dry chemical, CO₂.

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.

6. Accidental Release Measures

Steps to be Taken in case Material is Released or Spilled

If the battery is accidentally broken and electrolyte 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 battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

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.

7. Handling And Storage

Do not charge. 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.

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

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



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Other Precautions

Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

8. Exposure Controls And 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.
Ventilation:	Not necessary under conditions of normal use.
Protective Gloves:	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.

9. Physical And Chemical Properties

General Information

Form:	Solid
Color:	Black and white gold
Odor:	Odorless
Boiling Point:	Not determined
Melting Point:	Not determined
Vapor Pressure:	Not determined
Vapor Density:	Not determined
Solubility In Water:	Insoluble
Specific Gravity (H ₂ O = 1):	Not determined
pH:	Not determined
Freezing Point:	Not determined
Molecular Weight:	Mixture, Not Applicable

10. Stability And Reactivity

Chemical Stability:	This material is chemically stable under normal and storage and handling conditions.
Conditions to Avoid:	Elevated temperatures fire and ignition sources, mechanical abuse and



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electrical abuse.

Hazardous Decomposition

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

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-fibrotic lung injury and membrane irritation.

12. Ecological Information

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

13. Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Dispose of the battery in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

14. Transport Information

This Battery is unregulated for purpose of transportation by U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAA), International Air Transport Association (IATA) and the International Maritime Dangerous Goods regulations (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 requirements 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.

For marine transportation the product is handled as Non-Dangerous Goods by meeting the IMO International Maritime Dangerous Goods (IMDG Code) 2014 Edition (inc Amdt 36-12).

The requirements for shipping these batteries, in all modes of transportation, are that they 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.

15. Regulations

Law Information



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- 《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.

16. Other 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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