

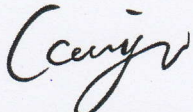


MSDS Report

Name of sample: ALKALINE BATTERY

Client unit: SHENZHEN ALLKEY BATTERY CO., LTD

Address: 3 /F, BLOCK B, TONGFU BLDG., XIN'AN 6TH RD., BAO'AN DIST., SHENZHEN 518101, CHINA

Inspected by: 
Kevin Yu

Date: March 14, 2013





HEALTH	2
FIRE	2
REACTIVITY	0

Material Safety Data Sheet

Printing date March 14, 2013

Reviewed on March 14, 2013

1 Identification of the substance/preparation and of the company/undertaking

- **Product details**
- **Trade name:** ALKALINE BATTERY
- **Product model:** LR03, LR6, LR14, LR20, 6LR61, LR1, LR61, 23A, 27A, 4LR44
- **Manufacturer/Supplier:**

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

Fax: +86-755-29957977

Emergency Tel: +86-755-29957377

- **MSDS Code:** CHE13-MAE030093M

2 Composition/information on ingredients

- **Chemical characterization**
- **Dangerous components:**

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

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4 First aid measures

Inhalation: Provide fresh air and seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact: Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

5 Fire – fighting measures

Hazardous Combustion Products: When burned, hazardous products of combustion including fume of carbon monoxide, carbon dioxide, and fluorine can occur.

Extinguishing Media: Water, carbon dioxide, dry chemical or foam.

Basic Fire Fighting Procedures: Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual Fire & Explosion Hazardous: This material does not represent an unusual fire or explosion hazardous.

6 Accidental release measures

Spill and leaks are unlikely because cells are contained in a hermetically-sealed case. If the battery case is breached, don protective clothing that is impervious to caustic materials and absorb or pack spill residues in inert material. Dispose in accordance with applicable state and federal regulations.

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.

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.

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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: Battery

Color: Black & White

Odor: Odorless

Change in condition

Melting point/Melting range: Not determined

Boiling point/Boiling range: Not determined

Sublimation temperature / start: Not determined

Flash point: Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Vapor pressure: Not determined

Viscosity: Not determined

Density: Not determined

Solubility in / Miscibility with Water: Insoluble

10 Stability and reactivity

Stability: Stable

Incompatibility/Conditions to Avoid: Contents are incompatible with strong oxidizing agents. Do not heat, crush and disassemble short circuit or recharge.

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

Hazardous Polymerization: Will not occur

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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. "The International Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says: "Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provisions of this Code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are : alkaline-manganese, zinc-carbon, nickel metal hydride and nickel-cadmium batteries".

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.

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15 Regulations

Law Information

《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.