MSDS REPORT

Applicant:ShenZhen JKN Battery Co.,Ltd.
Address: Huafeng 2nd Industrial Zone,Hangkong Road,Gushu,Xixiang,
Bao'an,Shenzhen,Guangdong,China

Sample Name: ALKALINE BATTERIES
Model No.:LR20/LR14/LR6/LR03/LR1/LR61/6LR61

Prepared by: Shenzhen Certification Technology Service Co., Ltd.
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Prepared by: Sunny (Engineer)

Approved & Authorized Signer: Sam (~~Manager~~)

Official Seal:

Material Safety Date Sheet

Section 1 – Chemical Product and Company Identification

Product Name: ALKALINE BATTERIES

Manufacture: ShenZhen JKN Battery Co.,Ltd.

Address: Huafeng 2nd Industrial Zone,Hangkong Road,Gushu,Xixiang, Bao'an,Shenzhen,Guangdong,China

Tel: *******

Fax: *******

Section 2 – Composition/Information on Ingredient

Chemical Name	CAS No.	Weight %
Manganese Dioxide	1313-13-9	44%
Zinc	7440-66-6	30%
Potassium Hydroxide	1310-58-3	10%
Carbon	7440-44-0	16%

Section 3 – Hazards Identification

Eyes

Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

Skin

Exposure to the electrolyte contained inside the battery may result inchemical bums.

Inhalation

During normal use inhalation is an unlikely route of exposure due to containment of hazardous materials within the Battery case.However,should the batteries be exposed to extreme heat or pressures causing a breach in the battery

Cell case,exposure to the constituents may occur.

Ingestion

If the battery case is breached in the digestive tract,the electrolyte may cause localized burns.

Section 4 – First Aid Measures

Eyes

Wash thoroughly with running water.Get medical advice if irritation develops.

Skin

If the intemal cell materials of an opened battery cell come into contact with the skin,immediately flush with water for at least 15 minutes.Take off the contaminated clothes immediately.Get medical advice if advice if irritation develops.

Inhalation

Remove to fresh air.Get medical attention for any breathing difficulty.

Ingestion

Do not induce vomiting,seek immediate medical attention.

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Section 5 – Fire Fighting Measures

Extinguishing Media:

Use water,foam or dry powder,as appropriate to extinguish fire.

Fire Fighting Procedures:

In the event of a fire,wear full protective clothing and NIOSH-approved self-contained breathing apparatus with Full-face piece operated in the pressure demand or other positive pressure mode.Fight fire from the maximum Distance.Evacuate area.

Specific Hazards:

When involved in a fire,this material may decompose and produce irritating furmes which is harmful for firefighter.

Section 6 – Accidental Release Measures

Personal Precautions:

Wear appropriate personal protective equipment as specified in Section Vill.

Methods of Clean up:

Spill and leaks are unlikely because cells are contained in a hermetically-sealed case.In the event of a battery rupture, prevent skin contact and collect all released material in a plastic lined metal container.Dispose in accordance with applicable state and federal regulations.

Section 7 – Handling and Storage

Use and store at room temperature.Avoid mechanical or electrical abuse.DO NOT short or install incorrectly.Batteries may explode,pyrolyze or vent if disassembles.crushed,recharged or exposed to high temperature.Install batteries in accordance with equipment instructions.Do not mix battery systems,such as alkaline and zinc carbon,in the same equipment.Replace all batteries in equipment at the same time. Do not carry batteries loose in pocker or bag.

Section 8 – Exposure Controls, Personal Protection

Exposure guidelines:

Manganese Dioxide(as Mn):5.0mg/m3 (OSHA);0.2mg/m3 (ACGIH)

Potassium Hydroxide; 2mg/m3 (ACGIH)

Zinc(as ZnO,dust): 2mg/m3 (ACGIH)

Carbon: 2mg/m3 (ACGIH)

Engineering measure:

Use general ventilation under normal use condition.

Personal protection equipment:

Respiration protection: Not required under normal use.

Eye protection:Not required under normal use.Wear safety glassed or face shield as appropriate when handing leaking batteries.

Hand protection: Not required under normal use.Use gloves when handling leaking batteries.

Skin and Body Protection: Not required under normal use.Use protection clothes when handing leaking batteries.

Recommended decontamination facilities:

Eye bath,safety shower,washing facilities.

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Section 9 – Physical and Chemical Properties

Odor: Odorless
Appearance: Cylindrical solid.
Boiling Point:N/A
Melting Point:N/A
Solubility in Water: Insoluble
Density: N/A
Ignition temperature: N/A

Section 10 – Stability And Reactivity

Stability:

The product is considered stable under normal conditions.

Materials to Avoid:

The battery cells are encased in a non-reactive container,however,if the container is breached or rupture,avoid contact of internal battery components with acids,strong oxidizing agents.

Stability Condition to Avoid:

Avoid heat,open flames,moisture,crush,disassemble,short circuit or recharge.

Hazardous Decomposition Products:

Thermal degradation may produce hazardous fumes of zinc and manganese,hydrogen gas,caustic vapors of potassium hydroxide and other toxic by-products.

Section 11 – Toxicological Information

Managanese Dioxide:

Harmful by inhalation or ingestion.Long term ixposure to manganese compounds may reduce fertility in men.

Toxicity date:

ORL-RAT LD50>3478mg/kg

Zinc:

May be harmful if swallowed or inhaled.May act as an irritant.

Potassium Hydroxide:

Corrosive-may cause serious burns.Harmful by ingestion.ingalation and in contact with skin.If the solid or solution comes into contact with the eyes,serious eye damage may result.

Toxicity date:

ORL-RAT LD50 365mg kg^{-1}

Irritation date:

SKN-HMN 50mg/24h sev

SKN-RBT 50mg/24h/sev

DYE- RBT 1mg/24h/rinse mod

SKN-GPG 50mg/24h/sev

Carbon:

May be harmful if swallowed or inhaled.May act as an irritant.

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Section 12 – Ecological Information

Environmental Precautions:

This product meets the lead,Cadmium and Mercury content requirements of 98/101/EC＆91/157/EEC directives.So it may be non-hazardous in ordinary use and may be discarded in a accordance with applicable governmental regulations and take order with the demand of the environmental protection section.

Environmental Toxicity:

On the basis of available information,this material is not expected to produce any significant adverse environmental effects when recommended use instructions are followed.

Section 13 – Disposal Considerations

Waste Disposal Methods:

Individual consumers may dispose of spent(used) batteries with household trash.This product does not recommend that spent batteries be accumulated(quantities of five gallons or more should be disposed of in a secure landfill).in accordance with Federal.State or Local Laws and Regulations.Do not incinerate,since batteries may explode at excessive temperature.

Note:

This product meets the lead, Cadmium and Mercury content requirements of 98/101/EC＆91/157/EEC directives.

Section 14 – Transportation Information

Dry cell are not subject to dangerous goods regulation for the purpose of transportation by the U.S. Department of Transportation(DOT),the International Civil Aviation Organization(ICAO),the international Air Transport Association(IATA) or the International Maritime Dangerous Goods regulations(IMDG).The only DOT requirement for shipping Nickel Metal Hydride batteries is Special Provision A123 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)."

IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

Section 15 – Regulatory Information

Do not dispose in fire,mix with other battery types,recharge,connect improperly,or short circuit,which may result in overheating,explosion or leakage of cell contents.Observe all warnings and precautions listed for the product before use.The children should be instructed before they make use of the product.

Section 16 – Additional Information

The date is offered in good faith as typical values and not as a product specification.The information is this date sheet was compiled from information supplied by the vendors of the components of this compound.No warranty,either expressed or implied is hereby made.The recommended industrial hygiene and safe handling procedures are believed to be generally applicable.However,each user should review these recommendations in the specific context of the intended used and determine whether they are appropriate.