

# Safety Data Sheet

According to HCS-2012 APPENDIX D TO §1910.1200

Version: 1.0/EN

Product name: ALKALINE BATTERY LR1 Kendal (N)

Revision date: 09-Nov-2017

Printing date: 09-Nov-2017

## 1. Identification

### (a) Product identifier

Product name: ALKALINE BATTERY LR1 Kendal (N)

### (b) Other means of identification

Product description: Model: LR1 (N)  
Nominal Voltage: 1.5V  
Weight: 9.3g  
Dimension: 29.6mm×11.5mm (T×D)

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

Recommended use: Alkaline Battery.  
Restriction on use: No information available.

### (d) Details of the supplier of the product

Company name(China) Guangdong Liwang New Energy Co., Ltd.  
Address: shima District, Tangxia Town, Dongguan City, Guangdong Province, China  
E-mail: qa1@liwangbattery.com  
Telephone: +86-769-86201111-8062

### (e) Emergency phone number

+86-769-86201111-8062

## 2. Hazard(s) identification

### (a) Classification of the chemical

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

### (b) GHS Label elements, including precautionary statements

#### Emergency Overview

Signal word

Danger

#### Hazard Statements

Harmful if swallowed

Harmful in contact with skin

Causes severe skin burns and eye damage

Causes serious eye damage

Causes damage to organs through prolonged or repeated exposure

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This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.

## Precautionary Statements – Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

In case of inadequate ventilation wear respiratory protection

Contaminated work clothing should not be allowed out of the workplace

Wear protective gloves

Do not breathe dust/fume/gas/mist/vapors/spray

## Precautionary Statements – Response

Specific measures (see .? on this label)

IF exposed or concerned: Get medical advice/attention

Specific treatment (see supplemental first aid instructions on this label)

## Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Immediately call a POISON CENTER or doctor/physician

## Skin

IF ON SKIN: Wash with plenty of soap and water

Take off contaminated clothing and wash before reuse

If skin irritation or rash occurs: Get medical advice/attention

## Inhalation

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

**Ingestion:** IF SWALLOWED: Call a POISON CENTER or doctor/physician.

if you feel unwell, Rinse mouth. Don't induce vomiting

**Precautionary Statements – Storage:** Store locked up

**Precautionary Statements – Disposal:** Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC):** Not applicable

## (c) Other information

Very toxic to aquatic life with long lasting effects;

Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

## (d) Interactions with Other Chemicals

Use of alcoholic beverages may enhance toxic effects.

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## 3. Composition/information on ingredients

(a) Mixtures information

Chemical name	CAS No.	Concentration%
Manganese Dioxide	1313-13-9	37.3
Manganese	7439-96-5	2.34
Calcium stearate	1592-23-0	2.13
Zinc	7440-66-6	13.2
Nylon-66	32131-17-2	1.45
Acrylic resin	9003-01-4	0.10
Potassium hydroxide	1310-58-3	6.60
Water	7732-18-5	7.87
Iron	7439-89-6	20.61
Graphite	7782-42-5	8.40

## 4. First-aid measures

### (a) Description of first aid measures

<b>General Advice</b>	First aid is upon rupture of sealed battery. Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.
Skin contact:	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.
Inhalation:	Remove to fresh air. Get medical attention immediately if symptoms occur. May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
Ingestion:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. May produce an allergic reaction. If an allergic reaction occurs, stop use and seek medical help right away. Call a physician or poison control center immediately.
Self-protection of the first aider:	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

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

Most important symptoms and effects	Burning sensation. Itching. Rashes. Hives. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing
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### (c) Indication of any immediate medical attention and special treatment needed

Notes to Physician	May cause sensitization of susceptible persons. Treat symptomatically.
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## 5. Fire-fighting measures

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### **(a) Extinguishing media**

Suitable extinguishing media: Use foam, dry powder or dry sand, CO<sub>2</sub> as appropriate.

Unsuitable extinguishing media: No information available.

### **(b) Special hazards arising from the chemical**

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO<sub>2</sub>, Metal oxides, Irritating fumes

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

Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

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## 6. Accidental release measures

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### **(a) Personal precautions, protective equipment and emergency procedures**

Personal Precautions Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

### **(b) Environmental Precautions**

Environmental Precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

### **(c) Methods and materials for containment and cleaning up**

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

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## 7. Handling and storage

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### **(a) Precautions for safe handling**

In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

### **(b) Conditions for safe storage, including any incompatibilities**

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

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Incompatible Products

Strong acids. Strong oxidizing agents. Strong bases.

## 8. Exposure controls/personal protection

### (a) Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Manganese dioxide 1313-13-9	TWA: 0.02 mg/m <sup>3</sup> Mn TWA: 0.1 mg/m <sup>3</sup> Mn	(vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> Mn	IDLH: 500 mg/m <sup>3</sup> Mn TWA: 1 mg/m <sup>3</sup> Mn STEL: 3 mg/m <sup>3</sup> Mn
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m <sup>3</sup>	(vacated) Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>
Zinc 7440-66-6	STEL: 10mg/m <sup>3</sup> respirable fraction TWA: 2mg/m <sup>3</sup> respirable fraction	TWA: 5mg/m <sup>3</sup> fume TWA: 15mg/m <sup>3</sup> total dust TWA: 5mg/m <sup>3</sup> respirable fraction	IDLH: 50 mg/m <sup>3</sup> Ceiling: 15mg/m <sup>3</sup> dust TWA: 5mg/m <sup>3</sup> dust and fume STEL: 10mg/m <sup>3</sup> fume
Graphite 7782-42-5	TWA: 2 mg/m <sup>3</sup> respirable fraction all forms except graphite fibers	TWA: 15 mg/m <sup>3</sup> total dust synthetic TWA: 5 mg/m <sup>3</sup> respirable fraction synthetic (vacated) TWA: 2.5 mg/m <sup>3</sup> respirable dust natural (vacated) TWA: 10 mg/m <sup>3</sup> total dust synthetic (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m <sup>3</sup> TWA: 2.5 mg/m <sup>3</sup> respirable dust

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992) See section 15 for national exposure control parameters

### (b) Appropriate engineering controls

Engineering Measures

Showers  
Eyewash stations  
Ventilation systems

### (c) Individual protection measures, such as personal protective equipment

Eye/Face Protection

Face protection shield.

Skin and Body Protection

Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.

Respiratory Protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

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## 9. Physical and chemical properties

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(a) Appearance	solid
(b) Odor	Odorless
(c) Odor threshold	Not available.
(d) pH	Not available.
(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 applicable.
(i) Flammability	Non flammable.
(j) Upper/lower flammability or explosive limits	Not available.
(k) Vapor pressure	Not applicable.
(l) Vapor density	Not available.
(m) Relative density	Not available.
(n) Solubility(ies)	Insoluble in water.
(o) Partition coefficient: n-octanol/water	Not available.
(p) Auto-ignition temperature	Not available.
(q) Decomposition temperature	Not available.
(r) Viscosity	Not available.

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## 10. Stability and reactivity

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### *(a) Reactivity*

No data available.

### *(b) Chemical stability*

Stable under recommended storage conditions.

### *(c) Possibility of hazardous reactions*

None under normal processing.

### *(d) Conditions to avoid*

None known based on information supplied.

### *(e) Incompatible materials*

Strong acids. Strong oxidizing agents. Strong bases.

### *(f) Hazardous decomposition products*

Carbon oxides.

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## 11. Toxicological information

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### *(a) Information on the likely routes of exposure*

Product Information

Product does not present an acute toxicity hazard based on known or

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	supplied information.
	In case of rupture:
Inhalation:	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. May cause sensitization of susceptible persons. (based on components)
Ingestion:	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed. (based on components). May cause additional affects as listed under "Inhalation".
Skin contact:	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to skin. Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components).
Eye contact:	Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.

## Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Manganese dioxide 1313-13-9	= 9000 mg/kg ( Rat )		
Iron 7439-89-6	= 984 mg/kg ( Rat )		
Graphite 7782-42-5	> 10000 mg/kg ( Rat )		

### *(b) Information on toxicological characteristics*

#### Symptoms

Erythema (skin redness). May cause redness and tearing of the eyes. May cause blindness. Burning. Itching. Rashes. Hives. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/ or wheezing.

### *(C) Delayed and immediate effects as well as chronic effects from short and long-term exposure*

Sensitization	May cause sensitization of susceptible persons. May cause sensitization by skin contact. May cause sensitization by inhalation.
Mutagenic Effects	No information available.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

## IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive Toxicity No information available

STOT - single exposure No information available

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication

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Chronic Toxicity	Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).
Target Organ Effects	No known effect based on information supplied. Prolonged exposure may cause chronic effects. Repeated contact may cause allergic reactions in very susceptible persons. Contains a known or suspected mutagen. Possible risk of irreversible effects. Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system.
Aspiration Hazard	Respiratory system. Eyes. Skin. May affect the genetic material in germ cells (sperm and eggs). Gastrointestinal tract (GI). Reproductive System. Blood. Central Nervous System (CNS). Kidney. Lungs. Nasal cavities.
	No information available.

## 12. Ecological information

### (a) Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Iron 7439-89-6		96h LC50: = 13.6 mg/L (Morone saxatilis)		
Potassium hydroxide 1310-58-3		96h LC50: = 80 mg/L (Gambusia affinis)		
Zinc 7440-66-6	96h EC50: 0.11 - 0.271 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.09 - 0.125 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 2.16 - 3.05 mg/L (Pimephales promelas) 96h LC50: 0.211 - 0.269 mg/L (Pimephales promelas) 96h LC50: = 2.66 mg/L (Pimephales promelas) 96h LC50: = 30 mg/L (Cyprinus carpio) 96h LC50: = 0.45 mg/L (Cyprinus carpio) 96h LC50: = 7.8 mg/L (Cyprinus carpio) 96h LC50: = 3.5 mg/L (Lepomis macrochirus) 96h LC50: = 0.24 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.59 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.41 mg/L (Oncorhynchus mykiss)		48h EC50: 0.139 - 0.908 mg/L



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## **(b) Persistence and Degradability**

No information available.

## **(c) Bioaccumulative potential**

No information available.

## **(d) Other adverse effects**

No information available.

## 13. Disposal considerations

### **(a) Waste treatment methods**

Disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging Dispose of contents/containers in accordance with local regulations

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Zinc 7440-66-6	Ignitable powder Toxic
Potassium hydroxide 1310-58-3	Toxic Corrosive

## 14. Transport information

<b>DOT</b>	NOT REGULATED
<b>Proper Shipping Name</b>	NON REGULATED
<b>Hazard Class</b>	N/A
<b>TDG</b>	Not regulated
<b>MEX</b>	Not regulated
<b>ICAO</b>	Not regulated
<b>IATA</b>	Not regulated
<b>Proper Shipping Name</b>	NON REGULATED
<b>Hazard Class</b>	N/A
<b>IMDG/IMO</b>	Not regulated
<b>Hazard Class</b>	N/A
<b>Marine Pollutant</b>	Product is a marine pollutant according to the criteria set by IMDG/IMO
<b>RID</b>	Not regulated
<b>ADR</b>	Not regulated
<b>ADN</b>	Not regulated

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## 15. Regulatory information

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

CAS No.	USA TSCA	EU EINECS	Japan ENCS	Korea ECL	China IECSC	Canada DSL
1313-13-9	Listed	Listed	Listed	Listed	Listed	Listed
7439-96-5	Listed	Not listed	Listed	Listed	Listed	Listed
1592-23-0	Listed	Listed	Listed	Listed	Listed	Listed
7440-66-6	Listed	Not listed	Listed	Listed	Listed	Listed
32131-17-2	Listed	Listed	Listed	Listed	Listed	Not listed
9003-01-4	Listed	Listed	Listed	Listed	Listed	Listed
1310-58-3	Listed	Not listed	Listed	Listed	Listed	Listed
7732-18-5	Listed	Listed	Not listed	Listed	Listed	Not listed
7439-89-6	Listed	Not listed	Listed	Listed	Listed	Not listed
7782-42-5	Listed	Listed	Listed	Listed	Listed	Listed

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

### *(a) Preparation and revision information*

Date of previous revision: Not applicable.

Date of this revision: 09-Nov-2017

Revision summary: The first New SDS

### *(b) Abbreviations and acronyms*

TSCA: Toxic Substances Control Act, The American chemical inventory.  
DSL: Domestic Substances List  
EINECS: European Inventory of Existing Commercial chemical Substances  
ENCS: Japanese Existing and New Chemical Substances  
ECL: Existing Chemicals List, the Korean chemical inventory.  
IECSC: Inventory of existing chemical substances in China.

### *(c) Disclaimer*

Because all of our batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. 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 -----