

# Alkaline Zn-Mn Dry Battery LR6AA

## Safety Data Sheet

According to OSHA Hazard Communication Standard 29 CFR 1910.1200  
Date of issue: 02/28/2020      Supersedes: 02/28/2017      Version: 1.0

### SECTION 1: Identification

#### 1.1. Identification

Product form : Article  
Trade name : Alkaline Zn-Mn Dry Battery LR6AA  
Voltage : 1.5 V  
Watt-Hour : 3.9 Wh  
Battery Weight : 23 g

#### 1.2. Recommended use and restrictions on use

Main use category : Power supply provide low voltage and low current  
Restrictions on use : No information available.

#### 1.3. Supplier

Manufacturer : Hangzhou Pow erpack Battery Co.,Ltd  
Address : Rm 1611 Qianjiang Intel Business Center, Qianjiang Road, Hangzhou, Zhejiang Province, China.  
Postal code : 310008  
Phone : +86-571-87831186  
FAX : +86-571-87831187  
E-mail : jim@cnpow erpack.com

#### 1.4. Emergency telephone number

+86-13858182676

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

GHS-US classification  
Not classified

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-US labelling

No labelling applicable  
Hazard pictograms (GHS-US) : None  
Signal word (GHS-US) : None  
Hazard statements (GHS-US) : Not applicable  
Precautionary statements (GHS-US) : Not applicable

#### 2.3. Other hazards which do not result in classification

Batteries contain manganese dioxide which may boost combustion of other substances that may vent, ignite and produce sparks when subjected to high temperature, when damaged or abused (e.g., mechanical damage); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

This product should not present a health hazard when used under reasonable conditions. If contact with the internal components of the battery may be irritating to skin, eyes and mucous membranes. Fire will produce irritating, corrosive and/or toxic gases. Burning batteries may produce toxic hydrogen fluoride gas.

Fumes may cause dizziness or suffocation. If the battery is discarded into the environment, the harmful contents inside may be dangerous

#### 2.4. Unknown acute toxicity (GHSUS)

Not applicable

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

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### 3.2. Mixtures

Name	Product identifier	%
Manganese oxide (MnO <sub>2</sub> )	(CAS-No.) 1313-13-9	42 - 48
Zinc	(CAS-No.) 7440-66-6	15 - 25
Steel	(CAS-No.) 12597-69-2	15 - 22
Potassium hydroxide	(CAS-No.) 1310-58-3	12 - 18
Vinyl acetal polymers, formals	(CAS-No.) 63148-64-1	1 - 3

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

- First-aid measures general : No hazards which require special first aid measures.  
If you feel unwell, seek medical advice (show directions for use or safety data sheet if possible).
- First-aid measures after inhalation : Not an expected route of exposure.
- First-aid measures after skin contact : Not expected to present a skin hazard under anticipated conditions of normal use. No special technical protective measures are necessary.
- First-aid measures after eye contact : Not an expected route of exposure.
- First-aid measures after ingestion : Rinse mouth. Get medical attention. Never give anything by mouth to an unconscious person.

### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after ingestion : Symptoms may include tightness in the chest, flushing, headache, nausea, vomiting, respiratory depression, weakness, irregular heartbeat, abdominal pain, convulsions, and shock.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Dry sand or Class D extinguishing agents. If the battery is burning, water can also be submerged ignition ground.
- Unsuitable extinguishing media : No information available.

### 5.2. Specific hazards arising from the chemical

- Fire hazard : Battery can be overheated by an external source or by internal shorting and develop metal hydroxide mist.  
In fire situations fumes containing manganese, Zinc, etc. may evolved.  
Toxic vapor may release in case of fire.  
Thermal shock may cause battery case to crack open.  
Containers may explode when heated.  
Firefighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.  
On some bad using conditions (e.g., mechanical damage, external short circuit.) and in case of a bad functioning, some electrolyte can be removed from the cell by the security vent.  
Exposure to the ingredients contained within the battery pack could be harmful under some circumstances.
- Hazardous decomposition products in case of fire : Thermal decomposition can lead to release of irritating and toxic gases and vapors.

### 5.3. Special protective equipment and precautions for fire-fighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
- Other information : Evacuate personnel to a safe area. Move containers from fire area if it can be done without personal risk. Cool tanks/drums with water spray/remove them into safety. Stay upwind.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate personnel to a safe area; Ensure adequate ventilation, especially in confined areas; No flames, no sparks. Eliminate all sources of ignition. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes and inhalation of vapors.

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### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Stop leak if safe to do so.

### 6.2. Environmental precautions

Avoid release to the environment. Avoid dispersal of spilled material and runoff and contact with soil, water ways, drains and sewers.

### 6.3. Methods and material for containment and cleaning up

- For containment : Sweep or shovel spills into appropriate container for disposal. Move containers from spill area. If electrolyte leaks or spills, collect all released material in an appropriate container before proper disposal.
- Methods for cleaning up : Mechanically recover the product.
- Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Do not dispose in fire, mix with other battery types, connect improperly, or short circuit, which may result in overheating, explosion or leakage of cell contents  
Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life.  
Be sure to avoid prolonged short circuit since the heat can burn attendant skin and even rupture of the battery cell case  
Do not use organic solvents or other chemical cleaners on battery.  
Do not disassemble or decompose.  
Avoid contacting with water, avoid straight sunlight.  
Handle in accordance with good industrial hygiene and safety practice  
Ensure adequate ventilation, especially in confined areas  
Wash contaminated clothing before reuse  
Keep away from heat, sparks, flame and other sources of ignition
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a cool and dry area, but prevent condensation on cell or battery terminals.  
High temperature may damage the performance of the battery.  
Protect from physical damage and short circuits.  
To avoid risk of fire or explosion, keep sparks and other sources of ignition away from the battery.  
Do not allow metal objects to simultaneously contact both positive and negative terminal of batteries.  
Do not stack battery directly on another battery.  
Do not store batteries on electrically conductive surfaces.  
Keep containers tightly closed in a dry, cool and well-ventilated place  
Keep locked up and out of reach of children  
Keep away from food, drink and animal feeding stuffs  
Store in accordance with local regulations

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>Manganese oxide (MnO<sub>2</sub>) (1313-13-9)</b>
Not applicable
<b>Steel (12597-69-2)</b>
Not applicable
<b>Zinc (7440-66-6)</b>
Not applicable

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Potassium hydroxide (1310-58-3)		
ACGIH	ACGIH Ceiling (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
NIOSH	NIOSH REL (ceiling) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Vinylacetal polymers, formals (63148-64-1)		
Not applicable		

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Remove all sources of ignition. Do not install these batteries in sealed, unventilated areas. Remove jewelry, rings, watches and any other metallic objects while working on battery. All tools should insulate to avoid the possibility of shorting connections. DO NOT lay tools on top of the battery. The work area should be equipped with the corresponding species and quantity of fire equipment and leakage emergency equipment

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Under normal condition of use and handling no special protection is required for sealed battery. In the event of battery case breakage, should be wear appropriate safety gloves

#### Eye protection:

Under normal condition of use and handling no special protection is required for sealed battery. Use appropriate safety glasses when there is the risk of splash

#### Skin and body protection:

Under normal condition of use and handling no special protection is required for sealed battery. It is recommended to wear appropriate protective clothing when the battery case is broken.

#### Respiratory protection:

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable
Vapour pressure	: Not applicable
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: No data available
Solubility	: Insoluble in water
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: No data available

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Explosive properties : Not an explosive  
Oxidising properties : No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions. Fire hazard. Risk of explosion by shock, friction, fire or other sources of ignition

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Risk of explosion if heated under confinement.

When a battery cell is exposed to an external short-circuit, crushed, modification, high temperature, open flames, it will be the cause of heat generation and ignition.

### 10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid contact with incompatible materials

### 10.5. Incompatible materials

Conductive materials, water, seawater, strong oxidants, strong acid, strong bases, etc.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

In case of a fire or high temperature, metal oxides and irritating/harmful fumes/smoke may be generated.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>Manganese oxide (MnO<sub>2</sub>) (1313-13-9)</b>	
LD50 oral rat	> 3480 mg/kg
<b>Potassium hydroxide (1310-58-3)</b>	
LD50 oral rat	333 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/effects after ingestion : Risk of lung oedema.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

<b>Manganese oxide (MnO<sub>2</sub>) (1313-13-9)</b>	
LC50 fish 96h	> 100 % (v/v)
EC50 crustacea 48h	> 100 % (v/v)
EC50 Algae 72h	> 100 % (v/v)
<b>Zinc (7440-66-6)</b>	
LC50 fish 96h	0.211 - 0.269 mg/L

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Zinc (7440-66-6)	
EC50 crustacea 48h	0.068 mg/L

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

Manganese oxide (MnO <sub>2</sub> ) (1313-13-9)	
Log Pow	< 0 (at 20 °C)
Potassium hydroxide (1310-58-3)	
Log Pow	0.83

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on the global warming : No known effects from this product.  
 GWPmix comment : No known effects from this product.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
 Product/Packaging disposal recommendations : Dispose of contents/container in accordance with licensed collector's sorting instructions.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Steel	CAS-No. 12597-69-2	15 - 22%
Vinyl acetal polymers, formals	CAS-No. 63148-64-1	1 - 3%

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Zinc	CAS-No. 7440-66-6	15 - 25%
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Zinc (7440-66-6)	
CERCLA RQ	454 kg no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
Potassium hydroxide (1310-58-3)	
CERCLA RQ	1000 lb

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### 15.2. International regulations

#### CANADA

<b>Manganese oxide (MnO<sub>2</sub>) (1313-13-9)</b>
Listed on the Canadian DSL (Domestic Substances List)
<b>Zinc (7440-66-6)</b>
Listed on the Canadian DSL (Domestic Substances List)
<b>Potassium hydroxide (1310-58-3)</b>
Listed on the Canadian DSL (Domestic Substances List)

#### EJ-Regulations

<b>Manganese oxide (MnO<sub>2</sub>) (1313-13-9)</b>
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
<b>Zinc (7440-66-6)</b>
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
<b>Potassium hydroxide (1310-58-3)</b>
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

<b>Manganese oxide (MnO<sub>2</sub>) (1313-13-9)</b>
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law ) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Pollutant Release and Transfer Register Law (PRTR Law) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CIGR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
<b>Steel (12597-69-2)</b>
Listed on the TCSI (Taiwan Chemical Substance Inventory)
<b>Zinc (7440-66-6)</b>
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CIGR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
<b>Potassium hydroxide (1310-58-3)</b>
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law ) Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Poisonous and Deleterious Substances Control Law Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CIGR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
<b>Vinylacetal polymers, formals (63148-64-1)</b>
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law ) Listed on the Korean ECL (Existing Chemicals List) Listed on the TCSI (Taiwan Chemical Substance Inventory)

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### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

### SECTION 16: Other information

Issue date : 1-Sep-2017  
Revision date : 1-Sep-2017

Full text of H- and E/H-phrases

None :

Key or legend to abbreviations and acronyms used in the safety data sheet

TDG : Transport of Dangerous Goods  
ADR : European Agreement Concerning the International Carriage of Dangerous Goods by Road  
IMDG : International Maritime Dangerous Goods  
IATA : International Air Transport Association  
ADN : European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterway  
RID : Regulations Concerning the International Carriage of Dangerous Goods by Rail  
PBT : Persistent, Bioaccumulative and Toxic  
vPvB : Very Persistent and Very Bioaccumulative  
DNEL : Derived No Effect Level  
PNEC : Predicted No Effect Concentration  
LC50 : Lethal Concentration 50  
LD50 : Lethal Dose 50  
EC50 : Effective Concentration 50  
TWA : Time Weighted Average  
STEL : Short Term Exposure Limit

Key literature references and sources for data

ECHA: <http://echa.europa.eu/>

IFA GESTIS: [http://gestis-en.itrust.de/rxt/gateway.dll?f=templates\\$fn=default.htm\\$vid=gestiseng:sdbeng](http://gestis-en.itrust.de/rxt/gateway.dll?f=templates$fn=default.htm$vid=gestiseng:sdbeng)

HSDB: <http://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

ICSC: <http://www.ilo.org/dyn/icsc/showcard.home>

eChemPortal: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

NITE-CHRIP: [http://www.nite.go.jp/en/chem/chrip/chrip\\_search/srhInput](http://www.nite.go.jp/en/chem/chrip/chrip_search/srhInput)

SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*