Date:28.Jun.2019

No.:JST20190628052M-1

Material Safety Data Sheet (MSDS)

1 Identification of the substance and of the company

.Product name: *Alkaline dry cell*

.Product code: *LR6 LR03 LR14 LR20 6LR61*

.Manufacturer/Supplier: *JIAXING HUARONG BATTERY CO.,LTD*

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.Contact: *Song Xiaochun*

2 Hazards identification

.Classification of the substance or mixture

.Classification according to GHS and CLP : *Not classified as dangerous goods.*

.EMERGENCY OVERVIEW

.WARNING! *Products have a risk of explosion when in the heating or short circuit, Do not heat or dispose of in fire. Do not recharge or disassemble the cell.*

This product may contain Corrosive Components, when the products have leaked contact with skin will causes burns.

.Potential Health Effects: *This product contain much amounts of zinc. Long-term to contact zinc will lead Thirst, chest tightness, dry cough, headache, dizziness, high fever, chills and so on. dust will irritant eye .And Long-term repeated exposure will leadto skin irritation.*

.Eye Contact: *Without any eye contact harm to the product itself, when the products have composition leaked Vapor or mist can cause eye irritant.*

.Skin Contact: *Without any skin contact harm to the product itself, when the products have composition leaked leaked On the skin and mucous membrane and other organizations have a role in stimulating and corrosion.*

.Inhalation: *Leakage of gas and dust by inhalation will cause respiratory tract irritation, difficulty in breathing occurred in severe cases, and pulmonary edema; there are likely to cause supraglottic laryngeal spasm or edema.*

.Ingestion: *Ingestion may be a choking hazard for children, And not give timely treatment will stimulate the gastrointestinal tract.Harmful and toxic if swallowed.*

.Chronic or Special Toxic Effects: *Used batteries if not be reasonable recycling, the environment will be a lot of harm, the battery contained in the various non-degradable material,this material will cause the soil and water pollution,and it will cause the potential chronic health hazards to human.*

.Target Organs: *Overexposure to specific components of this product that are generated in dusts or fumes may cause adverse effects to the ollowing organs or systems: eyes, skin, liver, kidney, central nervous system, cardiovascular system, respiratory system.*

.Other hazards: *See section 11.*

NINGBO JESTON CERTIFICATION SERVICES CO.,LTD MSDS

3 Composition/information on ingredients

.This product contains the following ingredient at levels subject to reporting requirements of:

Components	CAS No.	GHS classification	Approximate (%)byWt.	Air Exposure Limits (mg/m³)	
				ACGIH TLV	OSHA PEL
Manganese dioxide (MnO_2)	1313-13-9	Acute Tox. 4 H332 Acute Tox. 4 H302	39-46%	0.2	5
Carbon (C)	7440-44-0	-- -- --	2.95-3.45%	Not Established	Not Established
Barium sulfate ($BaSO_4$)	7727-43-7	-- -- --	0.88-1.0%	10 Inhalable particulate	15 Total dust
Potassium hydroxide (KOH)	1310-58-3	Acute Tox. 4 H302 Skin Corr. 1A H314	8.93-10.15%	2	2
Zinc	7440-66-6	Aquatic Acute 1 H400 Aquatic Chronic 1 H410	13.88-17.06%	10 Oxide Dust 5 Oxide Fume	10 Oxide Dust 5 Oxide Fume
Plastic	-- -- --	-- -- --	0.98-1.74%	Not Established	Not Established
Copper (Cu)	7440-50-8	-- -- --	0.67-3.06%	1 Dust, 0.2Fume	1 Dust, 0.1Fume
Iron（Fe）	7439-89-6	-- -- --	13.77-21.75%	5 Oxide Dust/Fume	10 Oxide Dust/Fume
Paper	-- -- --	-- -- --	0.86-0.88%	Not Established	Not Established
Water	7732-18-5	-- -- --	5.65-7.75%	Not Established	Not Established

4 First aid measures

.Eye Contact: immediately flush eyes with plenty of water for at least 15 minutes occasionally lifting the eye lids. Get medical attention if irritation persists. Thermal burns should be treated as medical emergencies.

.Skin Contact: wash with plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

.Inhalation: remove to fresh air. Such as difficulty in breathing, give oxygen. Such as respiratory arrest, artificial respiration immediately. Medical treatment.

.Ingestion: Drink enough water, emetic. Gastric lavage, guided China. Medical treatment.

5 Fire-fighting measures

.Autoignition Temperature: Not applicable

.Extinguishing Media: Use dry powder carbon dioxide or sand.

.Special Fire Fighting Procedures: Do not use water on combustion products. Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective.

.Unusual Fire or Explosion Hazards: Charge or the case of short circuit and Combustion products due to internal temperature will produce explosion.

6 Accidental release measures

.Precautions if Material is Spilled or Released: Leak contaminated areas evacuated personnel quickly to a safe area, and isolation and strict restrictions on access. Proposals emergency personnel wearing positive pressure self-contained breathing

apparatus, alkali-base anti-wear overalls. Do not direct contact with leakage. Cut off the source of leakage as possible. To prevent the inflow of sewage.

.Small leakage: *Pick up the Leakage battery.*

.Much leakage: *Check the leaked battery whether broken,there will be no broken to repackaging and shipped the broken battery to the disposal of waste disposal sites.*

.Environmental Precautions: *product may contain reportable quantities of alloying elements. See Section 15 for additional information.*

7 Handling and storage

.Storage Temperatures: *Stable under normal temperatures and pressures.*

.Precautions to be Taken in Handling and Storing: *Store away from strong oxidizers. Dusts or powders may form Explosive mixtures with air. Avoid breathing dusts or fumes.*

8 Exposure controls/personal protection

Operations with potential for generating high concentrations of airborne particulates or fumes should be evaluated and controlled as necessary.

.Eye Protection: *Use safety glasses. Dust resistant safety goggles are recommended under circumstances.*

.Skin: *Appropriate protective gloves should be worn as necessary. Good personal hygiene practices should be followed including cleansing exposed skin several times daily with soap and water and laundering or dry cleaning soiled work clothing.*

.Respiratory Protection: *NIOSH/MSHA approved dust/fume/mist respirator should be used to avoid excessive exposure. See Section 2 for component material information exposure limits. If such concentrations are sufficiently high that this Respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator use, fitting, and training standards and regulations.*

.Ventilation: Provide general and/or local exhaust ventilation to control airborne levels of dust or fumes below exposure Limits, About exposure limits (PEL) or threshold limit values (TLV) See Section 3.

9 Physical and chemical properties

.General Information	
Form:	*Solid*
Color:	*Colored*
Odor:	*No odor*
.Change in condition	
Melting point/Melting range:	*Not available*
Boiling point/Boiling range:	*Not available*
.Danger of explosion:	*When heating or short circuit will have.*
.Solubility in/Miscibility with	
Water:	*Not miscible*
.Density:	*Not available*
.Viscosity:	
Dynamic:	*Not available*
.Nominal Voltage:	*1.5V*

10 Stability and reactivity

.Reactivity and Chemical Stability: Stable under normal temperatures and pressures.

.Possibility of hazardous reactions: When heated above 70℃ the risk of rupture occurs.
Hazardous polymerization will not occur.

.Conditions to Avoid: Products to avoid violent collision, Avoid short circuit.

.Incompatible Materials: Acidic, acidic metal, water, strong reducing agents, flammable or combustible.

.Hazardous decomposition Products: Metallic fumes may be produced during burning, grinding, and possibly machining or any situation with the potential for thermal decomposition.

11 Toxicological information

Breathing fumes or dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides. These oxides are produced by heating various metals including cadmium, zinc, nickel, mercury cobalt, manganese, lead, beryllium, chromium, aluminum, selenium, iron, arsenic and so on.

. Toxicity to Animals: LD/LC50 values relevant

7440-66-6	Zinc	Oral	LD50 : >2000 mg/kg (rat) .
1313-13-9	Manganese dioxide	Oral	LD50 : 3478 mg/kg (rat) .
1310-58-3	Potassium hydroxide	Oral	LD50 : 273 mg/kg (rat) .

.Irritation: This product may contain Irritating Components, avoid contact leaked material.

.Chronic Effects on Humans: No further relevant information available.

12 Ecological information

.Aquatic Ecotoxicological Data, Environmental Fate Data

The hazardous substances on the environment, special attention should be on the water and soil pollution.
Ecotoxical effects: Toxic to aquatic organisms.
General notes:Water hazard class 2 (German Regulation) (Self-assessment): Hazardous for water.
Do not allow product to reach ground water, water course or sewage system.

13 Disposal consideration

.Product: Must be disposed of in accordance with applicable Federal, state and local regulations.
Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts.

.Recommendation: Must not be dispose together with household garbage. Do not allow product to reach sewage system.

.Uncleaned packaging: Recommendation Disposal must be made according to official regulations.

14 Transport information

.UN Proper Shipping Name: Not applicable.

.UN Number: Not applicable.

.Packing Group: Not applicable.

.Packing: Insulation packaging, Meets 2019 IATA 60th edition of the Air Transport "Dangerous Goods Regulations".

.PI packaging requirements: *Not available.*

Products is "dry cell" batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and the International Maritime Organization (IMO). The only requirements for shipping these cells by DOT 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 cells 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 bateery 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: alkali-manganese, zinc-carbon, nickel metal hydride

.Transport fashion: *By air, by sea, by land.*

15 Regulatory information

Special requirement be according to the local regulatories.

. CALIFORNIA PROPOSITION 65:*This product may contains chemicals (antimony [oxide], arsenic, beryllium, chromium [hexavalent], cobalt, cadmium, lead,nickel) known to the State of California to cause cancer and chemicals (cadmium, lead) known to the State of California to cause birth defects or other reproductive harm.*

. Regulatory Lists: *Some components of this product may be specifically listed by individual states; other product-specific health and safety Data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.*

. Toxic Substances Control Act (TSCA) : *Most Components of this product are listed on the TSCA Inventory.*

. EINECS: *Some substances of this product are listed on the EINECS.*

. REACH Regulation List of Substances of very high concern (SVHC): *None of the ingredients is listed.*

16 Other information

Relevant hazard statements:

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage

H332 Harmful by inhalation

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

The contents and format of this MSDS are in accordance with ISO Commission Directive ISO11014:2009.

DISCLAIMER OF LIABILITY

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

· *Abbreviations and acronyms:*

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning theInternational Transport of Dangerous Goods by Rail).

IMDG: International Maritime Code for Dangerous Goods.

IATA: International Air Transport Association.

ICAO: International Civil Aviation Organization.

TDG: Transportation of Dangerous Goods Program of canada.

DOT: U.S. Department of Transportation.

GHS: Globally Harmonized System of Classification and Labelling of Chemicals.

EINECS: European Inventory of Existing Commercial Chemical Substances.

ELINCS: European List of Notified Chemical Substances.

CAS: Chemical Abstracts Service (division of the American Chemical Society).

ACGIH: American Conference of Governmental Industrial Hygienists.

NFPA: National Fluid Power Association.

TSCA: Toxic Substances Control Act.

DNEL: Derived No-Effect Level (REACH).

PNEC: Predicted No-Effect Concentration (REACH).

LC50: Lethal concentration, 50 percent.

LD50: Lethal dose, 50 percent.

PBT: Persistent, Bioaccumulative and Toxic.

vPvB: very Persistent and very Bioaccumulative.

**********The End**********