



Revision Date: 10/2/2014

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY**

Product Name: Greenview Lawn Food 22-0-4

Product Identity: Mixed granular fertilizer.

Recommended use

This product is a mixed granular fertilizer for landscape use.

Supplier/Manufacturer**Lebanon Seaboard Corporation****1600 East Cumberland Street****Lebanon PA 17042**

800-233-0628

(717-273-1685)

Emergency telephone numbers:

Chemtrec (Spill) 1-800-424-9300

Prosar (Health) 888-208-1368

**2. HAZARDS IDENTIFICATION**

Signal Word: None

Hazard Category: None

Hazard Statements:

Keep out of reach of children.

Pictogram: None

Precautionary Statements for handling: See Section 7.

Precautionary Statements for disposal - Dispose in accordance with all federal, state and local regulations. See Section 13.

**Hazards not otherwise classified (HNOC):** None

Unknown acute toxicity: &lt;1% of the mixture consists of ingredients of unknown toxicity

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	Weight %
Non hazardous fertilizer ingredients and fillers	Various	100

**4. FIRST AID MEASURES**

Eye Contact	Rinse eyes cautiously with water for several minutes. Remove any contact lenses if easy to do, and continue rinsing. If discomfort or irritation persists contact a physician.
Skin Contact	Wash with soap and water. If injury occurs, or if discomfort or irritation persists or rash occurs, contact a physician.
Inhalation	If inhaled and discomfort occurs, move to fresh air, and keep person at rest in a position comfortable for breathing. If difficulty in breathing occurs and/or persists, administer oxygen and get medical attention. If medical advice is needed, have product container or label on hand.

Ingestion Rinse mouth. Drink Plenty of water. If you feel unwell, call a poison control center or seek medical attention. Do not induce vomiting of an unconscious person.

Self-protection of the first aider: Use any appropriate personal protective equipment as required for nuisance dusts.

Most important symptoms and effects, both acute and delayed: Nuisance dust irritation may occur with nasal discomfort under highly dusty conditions.

Indication of any immediate medical attention and special treatment needed: Treat Symptoms. Consult physician if discomfort or irritation persists. Get medical advice or attention if you feel unwell.

**5. FIRE FIGHTING MEASURES**

**Suitable extinguishing media**

Use extinguishing media suitable to local circumstances and the surrounding environment. Options in this case include water, CO<sub>2</sub>, ABC Dry Chemical extinguisher, or foam. Avoid stirring up dust extinguisher stream.

**Specific hazards arising from the chemical**

Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire, do not breathe fumes.

**Explosion data**

Sensitivity to mechanical impact: None

Sensitivity to static discharge: None

Note: Excessive amounts of any burnable dusts can produce explosive mixtures if allowed to disperse in the air in confined areas where ignition sources occur. Prevent excessive dust dispersal in areas of use, storage, or production.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and standard protective (bunker) gear.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment, and emergency procedures**

Personal Precautions	Use dust mask and gloves as needed or other reasonable personal protective equipment as required to prevent contact with eyes or skin. Remove ignition sources prior to clean-up.
Environmental precautions	Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.
Methods for containment	Prevent further leakage or spillage, if safe to do so.
Methods for clean-up	Use dust mask and/or reasonable personal protective equipment as required to avoid breathing dusts. Moisten or cover powder spill with plastic sheet or tarp to minimize spreading. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Soak up excess with inert absorbent material. Clean contaminated surface thoroughly.

**7. HANDLING AND STORAGE**

Safe Handling Read and understand all safety precautions before handling. Ensure adequate ventilation, especially in confined areas. Use personal protective equipment as required to avoid breathing product dusts or mists, and to prevent eye contact. Wash hands thoroughly after handling.

Storage Conditions Keep containers tightly closed in a cool, well- ventilated place. Keep out of the reach of children.

Incompatible materials Avoid strong acids or alkali, or other reactive substances.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH*
Nuisance Dusts	10 mg/m <sup>3</sup> (TWA- Total dust)	15 mg/m <sup>3</sup> (TWA total) 50 mppcf (TWA total) 5 mppcf (TWA respirable)	Not Established

\*IDLH refers to amounts that are "Immediately Dangerous to Life or Health"

Other Information:

Engineering controls: Use with adequate ventilation and follow safe work practices to prevent dust buildup in air.

**Individual protection measures**

- Eye protection Safety glasses, or goggles if eye contact is likely
- Skin and Body Protection Gloves and standard work coveralls recommended.
- Respiratory Protection Dust mask recommended for dusty or misty conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
- General Hygiene When using product, do not eat, drink or smoke. Wash hands thoroughly after handling. Wash contaminated clothing before reuse.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	Solid
Appearance	Granules
Color	Mixed, various
Odor	Slight
Odor Threshold	No information available
pH	Not applicable
Melting point/freezing point	Not applicable
Boiling point / boiling range	Not applicable
Flash point	No information available
Evaporation rate	Not applicable
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	Not applicable
Vapor density	Not applicable
Specific Gravity	Not applicable
Water solubility	Mostly Insoluble in water, although some ingredients may dissolve.
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Oxidizing properties	No information available

**10. STABILITY AND REACTIVITY**

**Reactivity**

No data available

**Chemical stability**

Stable.

**Possibility of Hazardous Reactions**

May release heat and fumes when mixed in solution with incompatible reactive materials.

**Hazardous polymerization**

Will not occur.

**Conditions to avoid**

High heat, sparks and open flames, as some ingredients may be burnable.

**Incompatible materials**

Strong acids or alkali, or other reactive substances.

**Hazardous Decomposition Products**

May emit toxic fumes under fire conditions, such as Nitrogen oxides (NOx), Ammonia, Oxides of sulfur, Hydrogen chloride and Carbon monoxide.

**11. TOXICOLOGICAL INFORMATION**

Routes of exposure: Ingestion, eyes (contact), skin (contact), dust inhalation

Symptoms	May irritate the digestive tract if ingested in quantity, causing nausea, vomiting and diarrhea.
Sensitization	No information available.
Germ cell mutagenicity	No information available
Carcinogenicity	Not listed as carcinogenic.
Reproductive toxicity	No information available
STOT - single exposure	No information available
STOT - repeated exposure	No information available
Chronic toxicity	No information available
Target Organ Effects	No information available
Aspiration hazard	No information available

**12. ECOLOGICAL INFORMATION**

Fertilizers may be harmful to aquatic life with short term effects, causing algal bloom and increased BOD, depending on the amount released.

Persistence and degradability	No information available
Bioaccumulation	No information available
Other adverse effects	No information available

**13. DISPOSAL CONSIDERATIONS**

This material, as supplied is not a hazardous waste according to federal regulations (40 CFR 261).

**Disposal of wastes:**

This product is a non-hazardous waste material suitable for approved solid waste landfills.

No EPA Waste Numbers are applicable for this product’s components.  
 Dispose of in accordance with Local, State, and Federal regulations.

**Contaminated packaging**

No US Federal special packaging considerations at the date of this document. Follow local regulations.

**14. TRANSPORT INFORMATION**

<b>DOT:</b>	Not Regulated	<b>ADR:</b>	Not Regulated
Proper Shipping Name:	Non Regulated	<b>ADN:</b>	Not Regulated
Hazard Class:	Not Applicable	<b>RID:</b>	Not Regulated
<b>IATA:</b>	Not Regulated	<b>IATA:</b>	Not Regulated
Proper Shipping Name:	Non Regulated	<b>TDG:</b>	Not Regulated
Hazard Class:	Not Applicable	<b>ICAO:</b>	Not Regulated
<b>IMDG/IMO</b>	Not Regulated	<b>MEX:</b>	Not Regulated
Hazard Class	Not Applicable		
Marine Pollutant	Yes		

**IMDG:** Not a dangerous good.  
**ICAO/IATA:** Not a dangerous good.

**15. REGULATORY INFORMATION**

**SARA 313** Superfund Amendments: This product contains no chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal regulations, Part 372.

**SARA 311/312 Hazard Categories**

Acute:	No
Chronic:	No
Fire:	No
Sudden release of pressure:	No
Reactive:	No

**CERCLA:** This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material .

**Clean Water Act:** This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**State Regulations**

**California Proposition 65:** This product may contain detectable quantities of a substance (sand mineral: silica) known to the State of California to cause cancer by prolonged, repeated inhalation over a long period of time (months to years).

**International Inventories**

TSCA (USA): Complies

**General Product Information:** This product is not federally regulated as a hazardous material.  
**Clean Air Act:** No information is available.  
**Clean Water Act:** No information is available.

**State Regulations – General:** This product is not regulated by any State as a hazardous material.  
**Component Analysis – State** None of this product’s components are on the state lists from CA, FL, MA, MN, NJ, or PA.  
**Component Analysis – WHMIS IDL** No components are listed in the WHMIS IDL.

**16. OTHER INFORMATION**

Disclaimer

The information provided in this material safety data sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section I - Information of Manufacturer

Manufacturer's Name: Dongguan CityNuoXingElectronicCo.,Ltd
Address:: NORTH KANGLE ROAD NO.1 HOUJIE TOWN, DONGGUAN CITY GUANGDONG PROVINCE
Telephone number/FAX number: TEL:0086-769-85991992FAX : 0086-769-85889734
Web site: <a href="http://www.nuoxingdz.com">http:// www.nuoxingdz.com</a> Email:lcyfeng@163.com
Battery type: LR03/LR6/LR14/LR20/LR1/6LR61
MSDS Creation Date: Jan 29 <sup>th</sup> 2013

### Section II - Hazardous Ingredients / Identity Information

Description	CAS No.	% of Total Weight	
Manganese Dioxide	1313-13-9	40	Wt%
Zinc Metal	7440-66-6	16	Wt%
Potassium hydroxide	1310-58-3	8	Wt%
Water	7732-18-5	10	Wt%
Iron	7439-89-6	17	Wt%
Paper	RR-01108-5	1	Wt%
Copper	7440-50-8	3	Wt%
Nylon	9008-75-7	2	Wt%
Graphite	7782-42-5	3	Wt%

### Section III - Physical / Chemical Characteristics

Boiling Point: N.A	Specific Gravity(H <sub>2</sub> O=1): N.A
Vapor Pressure(mm Hg): N.A	Vapor Density (AIR=1): N.A
Solubility in Water: N.A	Melting Point : N.A
Appearance and Odor	Cylindrical Shape, odorless

### Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): N.A	Flammable Limits : N.A.
LEL: N.A	UEL: N.A
Extinguishing Media: . Carbon Dioxide, Dry Chemical or Foam extinguishers. Do not dispose of battery in fire - may explode. Special Fire Fighting Procedures: N.A. Do not short-circuit battery - may cause burns.	

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section V - Reactivity Data

Stability : Stable
Incompatibility (Materials to Avoid): Hazardous Decomposition or Byproducts
Polymerization: Will Not Occur

### Section VI - Health Hazard Data

Route(s) of Entry: Inhalation? N.A ; Skin? N.A; Ingestion? N.A
<b>Health Hazard (Acute and Chronic) / Toxic logical information</b> ◆ In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte. In contact with electrolyte can cause severe irritation and chemical burns.

### Section VII – First Aid Measures

<b>First Aid Procedures:</b> ◆ If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately. ◆ If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.
---

### Section VIII– Accidental Release or Spillage

<b>Steps to Be Taken in Case Material is Released or Spilled</b> ◆ Batteries that are leakage should be handled with rubber gloves. ◆ Avoid direct contact with electrolyte.
--

### Section IX – Handling and Storage

<b>Safe handling and storage advice</b> ◆ Batteries should be handled and stored carefully to avoid short circuits. ◆ Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries ◆ Never disassemble a battery. ◆ Do not touch internal material with bare hands. ◆ Keep batteries between -30°C and 35°C.
---

### SectionX – Ecological Information

◆ <b>Ecological Information</b> : N.A
---------------------------------------



# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section XI – Exposure Controls / Person Protection

- ◆Occupational Exposure Limits: LTEP N.A.
- ◆Respiratory Protection (Specify Type): N.A.
- ◆Ventilation Local Exhausts: N.A. ◆Protective Gloves: N.A.
- ◆Eye Protection: N.A.
- ◆Other Protective Clothing or Equipment: N.A.

### Section XII – Disposal Method

- ◆Dispose of batteries according to government regulations.

### Section XIII –Regulation Information

#### Regulation Information

- ◆Special requirement be according to the local regulations

### Section XIV – Transportation Information

**Kendal** primary alkaline cylindrical batteries are considered to be “dry cell” batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civic Aviation Administration(ICAO), International Air Transport Association (IATA), the International Maritime Organization (IMO), the “Accord Européen Relatif au Transport International des Marchandises Dangereuses par Route” (ADR) ) and the “Règlement concernant le transport international ferroviaire de marchandises Dangereuses” (RID).

**Kendal** batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

Regulatory Body	Special Provisions
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Special Provision 130
IATA	A123
ICAO	Not regulated

**IATA DGR:** Special Provision A123: “Examples of such batteries are: alkali-manganese, zinc-carbon,, nickel-metal hydride and nickel-cadmium batteries. Any electrical battery ... having the potential of a dangerous evolution of heat must be prepared for transport as to prevent (a) a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals...) is forbidden from transport; and (b) accidental activation. The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6,when an Air Waybill is issued.”

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

**EU:** As primary alkaline cylindrical cells/batteries are not explicitly mentioned in RID/ADR, there are no special Dangerous Goods shipment requirements for these products.

**USA:** 49 CFR § 172.102 Special Provision 130: "For other than a dry battery specifically covered by another entry in the § 172.101 Table, "Batteries, dry" are not subject to the requirements of this subchapter when they are securely packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits."

### **Code of practice for packaging and shipment of primary batteries given in IEC**

**60086-1:** The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture. Shock and vibration shall be kept to a minimum. For instance, boxes should not be thrown off trucks, slammed into position or piled so high as to overload battery containers below. Protection from inclement weather should be provided.

### **Section XV-Other Information**

◆The data in this Material Safety Data Sheet relates only to the specific material designated herein.

### **Section XVI – Measures for fire extinction**

◆In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

◆Fire fighters should wear self-contained breathing apparatus.

Report No:1303163-180

# MSDS Report

**Sample** ALKALINE BATTERY(LR6)

---

**Client Unit** DONGGUAN POEAE ELECTRONICS CO.,LTD.

---

**Client Address** NO 22,Yuanmei Road, Southern District,  
Dongguan ,Guangdong,China

---

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

**Product Name:** Alkaline zinc-manganese Dry Battery

**Battery Type:** LR6 AM-3 SIZE AA 1.5V

**Trade Name:** POEAE

**Manufacturer:** CHONGQING TAIER BATTERY CO.,LTD

**Address:** Private Industrial Park,Shanglonghu Street,Yubei District,Chongqing city, China.

**Post Code:** 523000

**Tel:** 0769-23034357

**Emergency Telephone:** 0769-23034357

**Fax:** 0769-89032816

**E-mail:** poeae@poeae.com

## Section 2 – Composition/information on Ingredient

Chemical Name	Molecular Formula	CAS No.	Weight(%)
Zinc	Zn	7440-66-6	17-25
Manganese Dioxide	MnO <sub>2</sub>	13-13-9	35-43
Graphite	C	7782-42-5	3-4
Potassium hydroxide(liquid)	KOH	1310-58-3	9-12.5
Copper	CU	7440-50-8	1
Iron	Fe	7439-89-6	15-18
Water	H <sub>2</sub> O	7732-18-5	10-12
Nylon	---	24937-16-4	2-3

## Section 3 – Hazards Identification

Reference as follow if contact Potassium hydroxide.

### Eye

Causes severe eye burns. May cause irreversible eye injury. Contact may cause ulcerations of the conjunctiva and cornea. Eye damage may be delayed.

### Skin

Causes skin burns. May cause deep, penetrating ulcers of the skin.

### Inhalation

Irritation may lead to chemical pneumonitis and pulmonary edema. Cause

severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, an possible coma.

### **Ingestion**

Harmful if swallowed.

### **Health Hazards(Acute and Chronic)**

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents.

### **Sign/symptoms of Exposure**

A shorted battery can cause thermal and chemical burns contact with the skin, May be a reproductive hazard.

## **Section 4 – First Aid Measures**

### **Eye**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the Upper and lower eyelids. Get medical aid.

### **Skin**

Get medical aid at once. Immediately remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Discard contaminated clothing in a manner which limits further exposure.

### **Inhalation**

Get medical aid immediately, Remove from exposure and move to fresh air immediately. Use oxygen if available. Use oxygen device such as mask or bag.

### **Ingestion**

Do not induce vomiting. Get medical aid immediately.

### **Note to physician**

May be toxic to the body, Wash out the solution with water promptly in an emergency. Treat symptomatically and supportively.

## **Section 5 – Fire Fighting Measures**

### **Extinguishing Media**

Water, CO<sub>2</sub>, dry chemical.

### **Firefighting**

In case of fire in an adjacent area, use water, CO<sub>2</sub> or dry chemical extinguishers if the battery in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged batteries use suitable extinguishers. In this case, do not use water.

## **Section 6 – Accidental Release Measures**

### **Steps to be Taken in case Material is Released or Spilled**

If the battery is accidentally broken and electrolyte leaks out, wipe it up with a

cloth, and dispose of it in a plastic bag and put into a steel can.

The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

#### **Waste Disposal Method**

It is recommended to discharge the battery to the end, handing in the abandoned battery to related department unify, dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

## **Section 7 – Handling and Storage**

Do not charge. The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

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.

Storage at  $-30^{\circ}\text{C} \sim +35^{\circ}\text{C}$

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.

## **Section 8 – Exposure Controls, 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.

## **Section 9 – Physical and Chemical Properties**

**Nominal Voltage:** 1.5V.

**Appearance characters:** Blue and yellow with odorless cylindrical battery.

**Chemical uses:** For Electron and electrical appliance.

## **Section 10 – Stability and Reactivity**

### **Stability**

Stable

### **Conditions to Avoid**

Elevated temperatures fire and ignition sources, mechanical abuse and electrical abuse.

### **Hazardous Decomposition Products**

N/A.

## **Section 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.

## **Section 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.

## **Section 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.

## **Section 14 – Transport Information**

### **Not a hazard material or hazard goods for transportation.**

Separate alkaline batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Please refer to Section

7-HANDLING AND STORAGE also.

**Transport Fashion:** By air, by sea, by railway, by highway.

## **Section 15 – Regulatory Information**

### **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》

OSHA Hazard Communication Standard Status

Toxic Substances Control Act (TSCA) Status

SARA Title III

RCRA

California Proposition 65

In accordance with all Federal, State and Local laws.

## **Section 16 – Additional 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.

MSDS Creation Date: March 16, 2013



# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section I - Information of Manufacturer

Manufacturer's Name: Dongguan CityNuoXingElectronicCo.,Ltd
Address:: NORTH KANGLE ROAD NO.1 HOUJIE TOWN, DONGGUAN CITY GUANGDONG PROVINCE
Telephone number/FAX number: TEL:0086-769-85991992FAX : 0086-769-85889734
Web site: <a href="http://www.nuoxingdz.com">http:// www.nuoxingdz.com</a> Email:lcyfeng@163.com
Battery type: LR03/LR6/LR14/LR20/LR1/6LR61
MSDS Creation Date: Jan 29 <sup>th</sup> 2013

### Section II - Hazardous Ingredients / Identity Information

Description	CAS No.	% of Total Weight	
Manganese Dioxide	1313-13-9	40	Wt%
Zinc Metal	7440-66-6	16	Wt%
Potassium hydroxide	1310-58-3	8	Wt%
Water	7732-18-5	10	Wt%
Iron	7439-89-6	17	Wt%
Paper	RR-01108-5	1	Wt%
Copper	7440-50-8	3	Wt%
Nylon	9008-75-7	2	Wt%
Graphite	7782-42-5	3	Wt%

### Section III - Physical / Chemical Characteristics

Boiling Point: N.A	Specific Gravity(H <sub>2</sub> O=1): N.A
Vapor Pressure(mm Hg): N.A	Vapor Density (AIR=1): N.A
Solubility in Water: N.A	Melting Point : N.A
Appearance and Odor	Cylindrical Shape, odorless

### Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): N.A	Flammable Limits : N.A.
LEL: N.A	UEL: N.A
Extinguishing Media: . Carbon Dioxide, Dry Chemical or Foam extinguishers. Do not dispose of battery in fire - may explode. Special Fire Fighting Procedures: N.A. Do not short-circuit battery - may cause burns.	

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section V - Reactivity Data

Stability : Stable
Incompatibility (Materials to Avoid): Hazardous Decomposition or Byproducts
Polymerization: Will Not Occur

### Section VI - Health Hazard Data

Route(s) of Entry: Inhalation? N.A ; Skin? N.A; Ingestion? N.A
<b>Health Hazard (Acute and Chronic) / Toxic logical information</b> ◆ In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte. In contact with electrolyte can cause severe irritation and chemical burns.

### Section VII – First Aid Measures

<b>First Aid Procedures:</b> ◆ If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately. ◆ If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.
---

### Section VIII– Accidental Release or Spillage

<b>Steps to Be Taken in Case Material is Released or Spilled</b> ◆ Batteries that are leakage should be handled with rubber gloves. ◆ Avoid direct contact with electrolyte.
--

### Section IX – Handling and Storage

<b>Safe handling and storage advice</b> ◆ Batteries should be handled and stored carefully to avoid short circuits. ◆ Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries ◆ Never disassemble a battery. ◆ Do not touch internal material with bare hands. ◆ Keep batteries between -30°C and 35°C.
---

### SectionX – Ecological Information

◆ <b>Ecological Information</b> : N.A
---------------------------------------

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section XI – Exposure Controls / Person Protection

- ◆Occupational Exposure Limits: LTEP N.A.
- ◆Respiratory Protection (Specify Type): N.A.
- ◆Ventilation Local Exhausts: N.A. ◆Protective Gloves: N.A.
- ◆Eye Protection: N.A.
- ◆Other Protective Clothing or Equipment: N.A.

### Section XII – Disposal Method

- ◆Dispose of batteries according to government regulations.

### Section XIII –Regulation Information

#### Regulation Information

- ◆Special requirement be according to the local regulations

### Section XIV – Transportation Information

**Kendal** primary alkaline cylindrical batteries are considered to be “dry cell” batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civic Aviation Administration(ICA0), International Air Transport Association (IATA), the International Maritime Organization (IMO), the “Accord Europeén Relatif au Transport International des Marchandises Dangereuses par Route” (ADR) ) and the “Règlement concernant le transport international ferroviaire de marchandises Dangereuses” (RID).

**Kendal** batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

Regulatory Body	Special Provisions
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Special Provision 130
IATA	A123
ICA0	Not regulated

**IATA DGR:** Special Provision A123: “Examples of such batteries are: alkali-manganese, zinc-carbon,, nickel-metal hydride and nickel-cadmium batteries. Any electrical battery ... having the potential of a dangerous evolution of heat must be prepared for transport as to prevent (a) a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals...) is forbidden from transport; and (b) accidental activation. The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6,when an Air Waybill is issued.”

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

**EU:** As primary alkaline cylindrical cells/batteries are not explicitly mentioned in RID/ADR, there are no special Dangerous Goods shipment requirements for these products.

**USA:** 49 CFR § 172.102 Special Provision 130: "For other than a dry battery specifically covered by another entry in the § 172.101 Table, "Batteries, dry" are not subject to the requirements of this subchapter when they are securely packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits."

### **Code of practice for packaging and shipment of primary batteries given in IEC**

**60086-1:** The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture. Shock and vibration shall be kept to a minimum. For instance, boxes should not be thrown off trucks, slammed into position or piled so high as to overload battery containers below. Protection from inclement weather should be provided.

### **Section XV-Other Information**

◆The data in this Material Safety Data Sheet relates only to the specific material designated herein.

### **Section XVI – Measures for fire extinction**

◆In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

◆Fire fighters should wear self-contained breathing apparatus.

Report No:1303163-180

# MSDS Report

**Sample** ALKALINE BATTERY(LR6)

---

**Client Unit** DONGGUAN POEAE ELECTRONICS CO.,LTD.

---

**Client Address** NO 22,Yuanmei Road, Southern District,  
Dongguan ,Guangdong,China

---

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

**Product Name:** Alkaline zinc-manganese Dry Battery

**Battery Type:** LR6 AM-3 SIZE AA 1.5V

**Trade Name:** POEAE

**Manufacturer:** CHONGQING TAIER BATTERY CO.,LTD

**Address:** Private Industrial Park,Shanglonghu Street,Yubei District,Chongqing city, China.

**Post Code:** 523000

**Tel:** 0769-23034357

**Emergency Telephone:** 0769-23034357

**Fax:** 0769-89032816

**E-mail:** poeae@poeae.com

## Section 2 – Composition/information on Ingredient

Chemical Name	Molecular Formula	CAS No.	Weight(%)
Zinc	Zn	7440-66-6	17-25
Manganese Dioxide	MnO <sub>2</sub>	13-13-9	35-43
Graphite	C	7782-42-5	3-4
Potassium hydroxide(liquid)	KOH	1310-58-3	9-12.5
Copper	CU	7440-50-8	1
Iron	Fe	7439-89-6	15-18
Water	H <sub>2</sub> O	7732-18-5	10-12
Nylon	---	24937-16-4	2-3

## Section 3 – Hazards Identification

Reference as follow if contact Potassium hydroxide.

### Eye

Causes severe eye burns. May cause irreversible eye injury. Contact may cause ulcerations of the conjunctiva and cornea. Eye damage may be delayed.

### Skin

Causes skin burns. May cause deep, penetrating ulcers of the skin.

### Inhalation

Irritation may lead to chemical pneumonitis and pulmonary edema. Causes

severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, an possible coma.

### **Ingestion**

Harmful if swallowed.

### **Health Hazards(Acute and Chronic)**

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents.

### **Sign/symptoms of Exposure**

A shorted battery can cause thermal and chemical burns contact with the skin, May be a reproductive hazard.

## **Section 4 – First Aid Measures**

### **Eye**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the Upper and lower eyelids. Get medical aid.

### **Skin**

Get medical aid at once. Immediately remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Discard contaminated clothing in a manner which limits further exposure.

### **Inhalation**

Get medical aid immediately, Remove from exposure and move to fresh air immediately. Use oxygen if available. Use oxygen device such as mask or bag.

### **Ingestion**

Do not induce vomiting. Get medical aid immediately.

### **Note to physician**

May be toxic to the body, Wash out the solution with water promptly in an emergency. Treat symptomatically and supportively.

## **Section 5 – Fire Fighting Measures**

### **Extinguishing Media**

Water, CO<sub>2</sub>, dry chemical.

### **Firefighting**

In case of fire in an adjacent area, use water, CO<sub>2</sub> or dry chemical extinguishers if the battery in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged batteries use suitable extinguishers. In this case, do not use water.

## **Section 6 – Accidental Release Measures**

### **Steps to be Taken in case Material is Released or Spilled**

If the battery is accidentally broken and electrolyte leaks out, wipe it up with a

cloth, and dispose of it in a plastic bag and put into a steel can.

The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

#### **Waste Disposal Method**

It is recommended to discharge the battery to the end, handing in the abandoned battery to related department unify, dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

## **Section 7 – Handling and Storage**

Do not charge. The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

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.

Storage at  $-30^{\circ}\text{C}$  ~  $+35^{\circ}\text{C}$

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.

## **Section 8 – Exposure Controls, 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.



## **Section 9 – Physical and Chemical Properties**

**Nominal Voltage:** 1.5V.

**Appearance characters:** Blue and yellow with odorless cylindrical battery.

**Chemical uses:** For Electron and electrical appliance.

## **Section 10 – Stability and Reactivity**

### **Stability**

Stable

### **Conditions to Avoid**

Elevated temperatures fire and ignition sources, mechanical abuse and electrical abuse.

### **Hazardous Decomposition Products**

N/A.

## **Section 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.

## **Section 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.

## **Section 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.

## **Section 14 – Transport Information**

### **Not a hazard material or hazard goods for transportation.**

Separate alkaline batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Please refer to Section

7-HANDLING AND STORAGE also.

**Transport Fashion:** By air, by sea, by railway, by highway.

## **Section 15 – Regulatory Information**

### **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》

OSHA Hazard Communication Standard Status

Toxic Substances Control Act (TSCA) Status

SARA Title III

RCRA

California Proposition 65

In accordance with all Federal, State and Local laws.

## **Section 16 – Additional 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.

MSDS Creation Date: March 16, 2013

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section I - Information of Manufacturer

Manufacturer's Name: Dongguan CityNuoXingElectronicCo.,Ltd
Address:: NORTH KANGLE ROAD NO.1 HOUJIE TOWN, DONGGUAN CITY GUANGDONG PROVINCE
Telephone number/FAX number: TEL:0086-769-85991992FAX : 0086-769-85889734
Web site: <a href="http://www.nuoxingdz.com">http:// www.nuoxingdz.com</a> Email:lcyfeng@163.com
Battery type: LR03/LR6/LR14/LR20/LR1/6LR61
MSDS Creation Date: Jan 29 <sup>th</sup> 2013

### Section II - Hazardous Ingredients / Identity Information

Description	CAS No.	% of Total Weight	
Manganese Dioxide	1313-13-9	40	Wt%
Zinc Metal	7440-66-6	16	Wt%
Potassium hydroxide	1310-58-3	8	Wt%
Water	7732-18-5	10	Wt%
Iron	7439-89-6	17	Wt%
Paper	RR-01108-5	1	Wt%
Copper	7440-50-8	3	Wt%
Nylon	9008-75-7	2	Wt%
Graphite	7782-42-5	3	Wt%

### Section III - Physical / Chemical Characteristics

Boiling Point: N.A	Specific Gravity(H <sub>2</sub> O=1): N.A
Vapor Pressure(mm Hg): N.A	Vapor Density (AIR=1): N.A
Solubility in Water: N.A	Melting Point : N.A
Appearance and Odor	Cylindrical Shape, odorless

### Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): N.A	Flammable Limits : N.A.
LEL: N.A	UEL: N.A
Extinguishing Media: . Carbon Dioxide, Dry Chemical or Foam extinguishers. Do not dispose of battery in fire - may explode. Special Fire Fighting Procedures: N.A. Do not short-circuit battery - may cause burns.	

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section V - Reactivity Data

Stability : Stable
Incompatibility (Materials to Avoid): Hazardous Decomposition or Byproducts
Polymerization: Will Not Occur

### Section VI - Health Hazard Data

Route(s) of Entry: Inhalation? N.A ; Skin? N.A; Ingestion? N.A
<b>Health Hazard (Acute and Chronic) / Toxic logical information</b> ◆ In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte. In contact with electrolyte can cause severe irritation and chemical burns.

### Section VII – First Aid Measures

<b>First Aid Procedures:</b> ◆ If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately. ◆ If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) minutes, and contact a physician.
---

### Section VIII– Accidental Release or Spillage

<b>Steps to Be Taken in Case Material is Released or Spilled</b> ◆ Batteries that are leakage should be handled with rubber gloves. ◆ Avoid direct contact with electrolyte.
--

### Section IX – Handling and Storage

<b>Safe handling and storage advice</b> ◆ Batteries should be handled and stored carefully to avoid short circuits. ◆ Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries ◆ Never disassemble a battery. ◆ Do not touch internal material with bare hands. ◆ Keep batteries between -30°C and 35°C.
---

### SectionX – Ecological Information

◆ <b>Ecological Information</b> : N.A
---------------------------------------

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

### Section XI – Exposure Controls / Person Protection

- ◆Occupational Exposure Limits: LTEP N.A.
- ◆Respiratory Protection (Specify Type): N.A.
- ◆Ventilation Local Exhausts: N.A. ◆Protective Gloves: N.A.
- ◆Eye Protection: N.A.
- ◆Other Protective Clothing or Equipment: N.A.

### Section XII – Disposal Method

- ◆Dispose of batteries according to government regulations.

### Section XIII –Regulation Information

#### Regulation Information

- ◆Special requirement be according to the local regulations

### Section XIV – Transportation Information

**Kendal** primary alkaline cylindrical batteries are considered to be “dry cell” batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civic Aviation Administration(ICA0), International Air Transport Association (IATA), the International Maritime Organization (IMO), the “Accord Europeén Relatif au Transport International des Marchandises Dangereuses par Route” (ADR) ) and the “Règlement concernant le transport international ferroviaire de marchandises Dangereuses” (RID).

**Kendal** batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

Regulatory Body	Special Provisions
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Special Provision 130
IATA	A123
ICA0	Not regulated

**IATA DGR:** Special Provision A123: “Examples of such batteries are: alkali-manganese, zinc-carbon,, nickel-metal hydride and nickel-cadmium batteries. Any electrical battery ... having the potential of a dangerous evolution of heat must be prepared for transport as to prevent (a) a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals...) is forbidden from transport; and (b) accidental activation. The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6,when an Air Waybill is issued.”

# DONGGUAN NUO XING ELECTRONIC CO.,LTD

## Material Safety Data Sheet for Alkaline Batteries

Ref.No.:LW2013012901

**EU:** As primary alkaline cylindrical cells/batteries are not explicitly mentioned in RID/ADR, there are no special Dangerous Goods shipment requirements for these products.

**USA:** 49 CFR § 172.102 Special Provision 130: "For other than a dry battery specifically covered by another entry in the § 172.101 Table, "Batteries, dry" are not subject to the requirements of this subchapter when they are securely packaged and offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals) and protects against short circuits."

### **Code of practice for packaging and shipment of primary batteries given in IEC**

**60086-1:** The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture. Shock and vibration shall be kept to a minimum. For instance, boxes should not be thrown off trucks, slammed into position or piled so high as to overload battery containers below. Protection from inclement weather should be provided.

### **Section XV-Other Information**

◆The data in this Material Safety Data Sheet relates only to the specific material designated herein.

### **Section XVI – Measures for fire extinction**

◆In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

◆Fire fighters should wear self-contained breathing apparatus.

Report No:1303163-180

# MSDS Report

**Sample** ALKALINE BATTERY(LR6)

---

**Client Unit** DONGGUAN POEAE ELECTRONICS CO.,LTD.

---

**Client Address** NO 22,Yuanmei Road, Southern District,  
Dongguan ,Guangdong,China

---

# Material Safety Data Sheet

## Section 1 – Chemical Product and Company Identification

**Product Name:** Alkaline zinc-manganese Dry Battery

**Battery Type:** LR6 AM-3 SIZE AA 1.5V

**Trade Name:** POEAE

**Manufacturer:** CHONGQING TAIER BATTERY CO.,LTD

**Address:** Private Industrial Park,Shanglonghu Street,Yubei District,Chongqing city, China.

**Post Code:** 523000

**Tel:** 0769-23034357

**Emergency Telephone:** 0769-23034357

**Fax:** 0769-89032816

**E-mail:** poeae@poeae.com

## Section 2 – Composition/information on Ingredient

Chemical Name	Molecular Formula	CAS No.	Weight(%)
Zinc	Zn	7440-66-6	17-25
Manganese Dioxide	MnO <sub>2</sub>	13-13-9	35-43
Graphite	C	7782-42-5	3-4
Potassium hydroxide(liquid)	KOH	1310-58-3	9-12.5
Copper	CU	7440-50-8	1
Iron	Fe	7439-89-6	15-18
Water	H <sub>2</sub> O	7732-18-5	10-12
Nylon	---	24937-16-4	2-3

## Section 3 – Hazards Identification

Reference as follow if contact Potassium hydroxide.

### Eye

Causes severe eye burns. May cause irreversible eye injury. Contact may cause ulcerations of the conjunctiva and cornea. Eye damage may be delayed.

### Skin

Causes skin burns. May cause deep, penetrating ulcers of the skin.

### Inhalation

Irritation may lead to chemical pneumonitis and pulmonary edema. Cause



severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, an possible coma.

### **Ingestion**

Harmful if swallowed.

### **Health Hazards(Acute and Chronic)**

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. The most likely risk is acute exposure when a battery vents.

### **Sign/symptoms of Exposure**

A shorted battery can cause thermal and chemical burns contact with the skin, May be a reproductive hazard.

## **Section 4 – First Aid Measures**

### **Eye**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the Upper and lower eyelids. Get medical aid.

### **Skin**

Get medical aid at once. Immediately remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Discard contaminated clothing in a manner which limits further exposure.

### **Inhalation**

Get medical aid immediately, Remove from exposure and move to fresh air immediately. Use oxygen if available. Use oxygen device such as mask or bag.

### **Ingestion**

Do not induce vomiting. Get medical aid immediately.

### **Note to physician**

May be toxic to the body, Wash out the solution with water promptly in an emergency. Treat symptomatically and supportively.

## **Section 5 – Fire Fighting Measures**

### **Extinguishing Media**

Water, CO<sub>2</sub>, dry chemical.

### **Firefighting**

In case of fire in an adjacent area, use water, CO<sub>2</sub> or dry chemical extinguishers if the battery in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged batteries use suitable extinguishers. In this case, do not use water.

## **Section 6 – Accidental Release Measures**

### **Steps to be Taken in case Material is Released or Spilled**

If the battery is accidentally broken and electrolyte leaks out, wipe it up with a

cloth, and dispose of it in a plastic bag and put into a steel can.

The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

#### **Waste Disposal Method**

It is recommended to discharge the battery to the end, handing in the abandoned battery to related department unify, dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

## **Section 7 – Handling and Storage**

Do not charge. The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

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.

Storage at  $-30^{\circ}\text{C} \sim +35^{\circ}\text{C}$

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.

## **Section 8 – Exposure Controls, 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.

## **Section 9 – Physical and Chemical Properties**

**Nominal Voltage:** 1.5V.

**Appearance characters:** Blue and yellow with odorless cylindrical battery.

**Chemical uses:** For Electron and electrical appliance.

## **Section 10 – Stability and Reactivity**

### **Stability**

Stable

### **Conditions to Avoid**

Elevated temperatures fire and ignition sources, mechanical abuse and electrical abuse.

### **Hazardous Decomposition Products**

N/A.

## **Section 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.

## **Section 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.

## **Section 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.

## **Section 14 – Transport Information**

### **Not a hazard material or hazard goods for transportation.**

Separate alkaline batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Please refer to Section

7-HANDLING AND STORAGE also.

**Transport Fashion:** By air, by sea, by railway, by highway.

## **Section 15 – Regulatory Information**

### **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》

OSHA Hazard Communication Standard Status

Toxic Substances Control Act (TSCA) Status

SARA Title III

RCRA

California Proposition 65

In accordance with all Federal, State and Local laws.

## **Section 16 – Additional 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.

MSDS Creation Date: March 16, 2013