

Safety DATA SHEET

FICHE DE DONNÉES SUR LA SÉCURITÉ

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

1. IDENTIFICATION DE LA SUBSTANCE/PRÉPARATION ET DE LA ENTREPRISE/ENTREPRISE

Product identifier

Identificateur de produit

Product Name

Nom du produit

alkaline zinc manganese battery

Batterie de bouton de manganèse alcalin sans mercure

Model name

AA,AAA,LR41,LR1130,LR44

Details of the supplier of the Safety data sheet

Détails du fournisseur de la fiche de données de sécurité

Supplier Name

Nom du fournisseur

AGAWO NEW ENERGY TECHNOLOGY CO.,LTD

Supplier Address

Adresse du fournisseur

3# STANDARD WORKSHOP ,HIGH-TECH DEVELOPMENT ZONE II
QINZHOU ,GUANGXI,China

Supplier Phone Number

Numéro de téléphone du fournisseur

Phone:+86 0754-85835955

Téléphone :+86 755-6182 8818

Supplier Email

Courriel du fournisseur

2881007099@qq.com

2. HAZARDS IDENTIFICATION

2. HAZARDS IDENTIFICATION

Classification

Classification

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

Ce produit chimique n'est pas considéré comme dangereux par la norme de communication des dangers de l'OSHA 2012 (29 CFR 1910.1200) Ce produit est un article qui est une batterie scellée et qui, à ce titre, ne nécessite pas de SMDPar selon la norme de communication sur les risques de l'OSHA, à moins d'être rompu. Les dangers indiqués sont pour une batterie rompue.

Serious eye damage/eye irritation Lésions oculaires graves/irritation des yeux	Category 1 Catégorie 1
Skin corrosion/irritation Corrosion/irritation de la peau	Category 1 Sub-category B Catégorie 1 Sous-catégorie B
Acute toxicity – Oral Toxicité aiguë - Oral	Category 4 Catégorie 4
Acute toxicity –Dermal Toxicité aiguë -Dermal	Category 4 Catégorie 4
Acute toxicity - Inhalation (Gases) Toxicité aiguë - Inhalation (Gaz)	Category 4 Catégorie 4
Acute toxicity - Inhalation (Dusts/Mists) Toxicité aiguë - Inhalation (Poussières/Brumes)	Category 4 Catégorie 4
Specific target organ toxicity (repeated exposure) Toxicité spécifique des organes cibles (exposition répétée)	Category 2 Catégorie 2

GHS Label elements, including precautionary statements

Éléments de l'étiquette GHS, y compris les déclarations de précaution

Emergency Overview

Vue d'ensemble d'urgence

Signal word

Mot de signal

Danger

Danger

Hazard Statements

Déclarations de dangers

Causes serious eye damage

Cause de graves lésions oculaires

Causes severe skin burns and eye damage

Provoque de graves brûlures cutanées et des lésions oculaires

Harmful in contact with skin

Nocif au contact de la peau

Harmful if swallowed

Nocif s'il est avalé

Harmful inhaled

Inhalé nocif

Cause damage to organs through prolonged or repeated exposure

Causer des dommages aux organes par une exposition prolongée ou répétée



This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance.

This is a battery. In case of rupture: the above hazards exist.

Ce produit est un article qui contient une substance chimique. Des informations sur la sécurité sont données pour l'exposition à l'article tel qu'il a été vendu. L'utilisation prévue du produit ne devrait pas entraîner l'exposition à la substance chimique. C'est une batterie. En cas de rupture : les dangers ci-dessus existent.

Appearance

Silver

Physical State

Solid

Odor

Odorless

Apparence

Silver

État physique

Liquide solide contenant

Odeur

Inodore

Precautionary Statements – Prevention

Déclarations de précaution – Prévention

Wash face, hands and any exposed skin thoroughly after handling

Lavez le visage, les mains et toute peau exposée à fond après la manipulation

Wear protective gloves/protective clothing/eye protection/face protection

Portez des gants de protection/vêtements de protection/protection oculaire/protection du visage

Wear eye/face protection

Portez une protection pour les yeux et le visage

Precautionary Statements – Response

Déclarations de précaution - Réponse

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

Traitement spécifique (voir instructions de premiers soins supplémentaires sur cette étiquette)

Eyes

Yeux

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

SI EN YEUX: Rincer prudemment avec de l'eau pendant plusieurs minutes. Enlever les lentilles cornéennes, si elles sont présentes et faciles à faire.

Continuer le rinçant

If eye irritation persists: Get medical advice/attention

Si l'irritation oculaire persiste : Obtenez des conseils médicaux/attention

Skin

Peau

IF ON SKIN: Wash with plenty of soap and water

SI SUR SKIN: Laver avec beaucoup de savon et d'eau

Take off contaminated clothing and wash before reuse

Enlever les vêtements contaminés et les laver avant de les réutiliser

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

En cas d'irritation ou d'éruption cutanée : Obtenez des conseils médicaux/attention

Precautionary Statements – Storage

Déclarations de précaution - Stockage

Store locked up

Magasin verrouillé

Precautionary Statements – Disposal

Déclarations de précaution - Disposition

Dispose of contents/container to an approved waste disposal plant

Disposer du contenu/conteneur dans une usine d'élimination des déchets approuvée

Hazards not otherwise classified (HNOC)

Risques non classés autrement

Not applicable

Non applicable

Interactions with Other Chemicals

Interactions avec d'autres produits chimiques

No information available

Aucune information disponible

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.COMPOSITION/INFORMATION SUR INGREDIENTS

Chemical Name	CAS No	Weight-%
Zinc	7440-66-6	8
Graphite	7782-42-5	3
Manganese dioxide	1313-13-9	30
Potassium Hydroxide	1310-58-3	10
Iron	7439-89-6	37
Water	7732-18-5	12

4. FIRST AID MEASURES

4.MESURES DE PREMIERS SOINS

First aid measures

Mesures de premiers secours

General Advice

Conseils généraux

First aid is upon rupture of sealed battery. Show this Safety data sheet to the doctor in attendance

Les premiers soins sont sur la rupture de la batterie scellée. Montrez cette fiche de données sécurité au médecin présent

Eye Contact

Contact visuel

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area

Rincer immédiatement avec beaucoup d'eau, également sous les paupières, pendant au moins 15 minutes. Gardez les yeux grands ouverts tout en rinçant. Retirez les lentilles cornéennes, si elles sont présentes et faciles à faire. Continuer le rinçant. Obtenir des soins médicaux si l'irritation se développe et persiste. Ne frottez pas la zone touchée

Skin Contact

Contact peau

Wash off immediately with soap and plenty of water for at least 15 minutes. In the case of skin irritation or allergic reactions see a physician. May cause an allergic skin reaction.

Laver immédiatement avec du savon et beaucoup d'eau pendant au moins 15 minutes. Dans le cas d'une irritation de la peau ou des réactions allergiques voir un médecin. Peut provoquer une réaction cutanée allergique.

Inhalation

Remove to fresh air. If symptoms persist, call a physician. Get medical

Inhalation	attention immediately if symptoms occur. Retirer à l'air frais. Si les symptômes persistent, appelez un médecin. Obtenez immédiatement des soins médicaux en cas de symptômes.
Ingestion Ingestion	Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician. Ne pas induire des vomissements. Rincer la bouche immédiatement et boire beaucoup d'eau. Ne donnez jamais rien par la bouche à une personne inconsciente. Appelez un médecin.
Self-protection of the first aider Autoprotection du secouriste	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8) Évitez tout contact avec la peau, les yeux ou les vêtements. Utilisez de l'équipement de protection individuelle au besoin. Porter des vêtements de protection individuelle (voir la section 8)

Most important symptoms and effects, both acute and delayed

Les symptômes et effets les plus importants, aigus et retardés

Most Important Symptoms and Effects

Symptômes et effets les plus importants

Coughing and/ or wheezing. Itching.
Toux et/ou respiration sifflante. Démangeaisons.**Indication of any immediate medical attention and special treatment needed**

Indication de toute attention médicale immédiate et traitement spécial nécessaire

Notes to Physician

Notes au médecin

Treat symptomatically
Traiter symptomatiquement**5. FIRE-FIGHTING MEASURES**

5.MESURES DE LUTTE CONTRE L'INCENDIE

Suitable Extinguishing Media

Médias d'extinction appropriés

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Utiliser des mesures d'extinction adaptées aux circonstances locales et aux Environnement.

Unsuitable Extinguishing Media

Médias d'extinction inappropriés

CAUTION: Use of water spray when fighting fire may be inefficient

CAUTION: L'utilisation de pulvérisation d'eau lors de la lutte contre l'incendie peut être inefficace

Specific Hazards Arising from the Chemical

Risques spécifiques découlant de la

No information available.

Aucune information disponible.

Hazardous Combustion Products

Produits de combustion dangereux

Carbon Oxides

Oxydes de carbone

Protective equipment and precautions for firefighters

Équipement de protection et précautions pour les pompiers

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

Comme dans tout incendie, porter un appareil respiratoire autonome à la demande de pression,MSHA/NIOSH (approuvé ou équivalent) et un équipement de protection complet.

6. ACCIDENTAL RELEASE MEASURES

6.MESURES DE LIBÉRATION ACCIDENTELLE

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Précautions personnelles

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Évitez tout contact avec la peau, les yeux ou les vêtements. Assurer une ventilation adéquate. Utilisez de l'équipement de protection individuelle au besoin. Évacuer le personnel vers des zones sûres.

Other Information
Autres informations

Refer to protective measures listed in Sections 7 and 8

Se référer aux mesures de protection énumérées aux articles 7 et 8

Environmental Precautions
Précautions environnementales

Refer to protective measures listed in Sections 7 and 8.

Se référer aux mesures de protection énumérées aux articles 7 et 8

Methods for cleaning up
Méthodes de nettoyage

Pick up and transfer to properly labeled containers

Ramassage et transfert dans des contenants correctement étiquetés

Methods for Containment
Méthodes de confinement

Prevent further leakage or spillage if safe to do so.

Empêchez d'autres fuites ou déversements s'ils sont sécuritaires.

Methods for cleaning up
Méthodes de nettoyage

Pick up and transfer to properly labeled containers.

Ramassage et transfert dans des contenants correctement étiquetés.

7. HANDLING AND STORAGE

7.MANIPULATION ET STOCKAGE

Precautions for safe handling

Précautions pour une manipulation sécuritaire

Handling
Manipulation

In case of rupture. Use personal protection equipment. Avoid contact with skin, eyes or clothing.

En cas de rupture. Utilisez de l'équipement de protection individuelle. Évitez tout contact avec la peau, les yeux ou les vêtements.

Conditions for safe storage, including any incompatibilities

Conditions d'entreposage sécuritaire, y compris les incompatibilités

Storage
Stockage

Keep containers tightly closed in a dry, cool and well-ventilated place.

Gardez les contenants bien fermés dans un endroit sec, frais et bien aéré.

Incompatible Products
Produits incompatibles

Strong acids. Strong oxidizing agents. Strong bases.

Des acides forts. Agents oxydants forts. Des bases solides.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.CONTRÔLES D'EXPOSITION/PROTECTION PERSONNELLE

Control parameters

Paramètres de contrôle

Exposure Guidelines

Ligne directrice sur l'exposition

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Potassium hydroxide 1310-58-3	TWA: 2 mg/m ³	(vacated) Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³
Manganese dioxide 1313-13-9	TWA: 0.02 mg/m ³ Mn TWA: 0.1 mg/m ³ Mn	(vacated) Ceiling: 5 mg/m ³ Ceiling: 5 mg/m ³ Mn	IDLH: 500 mg/m ³ Mn TWA: 1 mg/m ³ Mn STEL: 3 mg/m ³ Mn
Zinc 7440-66-6	STEL: 10 mg/m ³ respirable fraction TWA: 2 mg/m ³ respirable fraction	TWA: 5 mg/m ³ fume TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction	IDLH: 500 mg/m ³ Ceiling: 15 mg/m ³ dust TWA: 5 mg/m ³ dust and fume STEL: 10 mg/m ³ fume

Graphite 7782-42-5	TWA: 2 mg/m ³ respirable fraction all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m ³ respirable dust natural (vacated) TWA: 10 mg/m ³ total dust synthetic (vacated) TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m ³ TWA: 2.5 mg/m ³ respirable dust
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ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL:

Occupational Safety and Health

Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

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

Occupational Safety and Health Administration - Limites d'exposition admissibles immédiatement dangereuses pour la vie ou la santé

Other Exposure Guidelines

Autres lignes directrices sur
l'exposition

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

Limites libérées révoquées par la décision de la Cour d'appel dans l'affaire AFL-CIO c. OSHA, 965 F.2d 962 (11e cir., 1992) Voir l'article 15 des paramètres nationaux de contrôle de l'exposition

Appropriate engineering controls

Contrôles techniques appropriés

Engineering Measures

Mesures techniques

Showers

Douches

Eyewash stations

Stations de lavage des yeux

Ventilation systems

Systèmes de ventilation

Individual protection measures, such as personal protective equipment

Mesures de protection individuelles, telles que l'équipement de protection individuelle

Eye/Face Protection

Protection œil/visage

If splashes are likely to occur: Wear Safety glasses with side shields (or goggles). None required for consumer use.

Si des éclaboussures sont susceptibles de se produire: Portez des lunettes de sécurité avec des boucliers latéraux (ou des lunettes). Aucun n'est requis pour l'usage du consommateur.

Skin and Body Protection

Protection de la peau et du corps

Wear protective gloves and protective clothing. Long sleeved clothing.

Impervious gloves

Portez des gants de protection et des vêtements de protection. Vêtements à manches longues. Gants imperméables

Respiratory Protection

Protection respiratoire

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

Aucun équipement de protection n'est nécessaire dans des conditions d'utilisation normales. Si les limites d'exposition sont dépassées ou si l'irritation est ressentie, une ventilation et une évacuation peuvent être nécessaires.

Hygiene Measures

Mesures d'hygiène

Handle in accordance with good industrial hygiene and Safety practice.

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

Poignée conformément aux bonnes pratiques d'hygiène et de sécurité. Ne mangez pas, ne buvez pas ou ne fumez pas lorsque vous utilisez ce produit. Enlever les vêtements contaminés et les laver avant de les réutiliser. Évitez tout contact avec la peau, les yeux ou les vêtements. Portez des gants appropriés et une protection pour les yeux et le visage. Lavez-vous les mains avant de se briser et immédiatement après la manipulation du produit.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

Physical and Chemical Properties

Propriétés physiques et chimiques

Physical State État physique	Solid containg liquid Liquide solide contenant		
Appearance Apparence	Silver Silver	Odor Odeur	Odorless Inodore
Color Couleur	No information available Aucune information disponible	Odor Threshold Seuil d'odeur	No information available Aucune information disponible
Property Propriété		Values Valeurs	Remarks/ Method Remarques/Méthode
Ph Ph		No data available Aucune information disponible	None known Inconnu
Melting / freezing point Point de fusion / point de congélation		No data available Aucune information disponible	None known Inconnu
Boiling point / boiling range Point d'ébullition / gamme d'ébullition		No data available Aucune information disponible	None known Inconnu
Flash Point Point d'éclair		No data available Aucune information disponible	None known Inconnu
Evaporation Rate Taux d'évaporation		No data available Aucune information disponible	None known Inconnu
Flammability (solid, gas) Flammabilité (solide, gaz)		No data available Aucune information disponible	None known Inconnu
Flammability Limit in Air Limite d'inflammabilité dans l'air			
Upper flammability limit Limite supérieure d'inflammabilité		No data available Aucune information disponible	
Lower flammability limit Limite d'inflammabilité inférieure		No data available Aucune information disponible	
Vapor pressure Pression de vapeur		No data available Aucune information disponible	None known Inconnu
Vapor density Densité de vapeur		No data available Aucune information disponible	None known Inconnu
Specific Gravity Spécifique Gravité		No data available Aucune information disponible	None known Inconnu
Water Solubility Hydrosolubilité		No data available Aucune information disponible	None known Inconnu
Solubility in other solvents Solubilité dans d'autres solvants		No data available Aucune information disponible	None known Inconnu
Partition coefficient: n-octanol/water Coefficient de partition : n-octanol/eau		0.00001 0.00001	None known Inconnu
Autoignition temperature Température d'auto-allumage		No data available Aucune information disponible	None known Inconnu
Decomposition temperature Température de décomposition		No data available Aucune information disponible	None known Inconnu
Kinematic viscosity Viscosité cinématique		No data available Aucune information disponible	None known Inconnu
Dynamic viscosity		0.00001	None known

Viscosité dynamique	0.00001	Inconnu
Explosive properties	No data available	
Propriétés explosives	Aucune information disponible	
Oxidizing Properties	No data available	
Propriétés oxydantes	Aucune information disponible	

Other Information
Autres informations

Softening Point	No data available
Point d'adoucissement	Aucune information disponible
VOC Content (%)	No data available
Contenu DE COV (%)	Aucune information disponible
Particle Size	No data available
Taille des particules	Aucune information disponible

10. STABILITY AND REACTIVITY

10. STABILITÉ ET RÉACTIVITÉ

Reactivity

Réactivité
No data available
Aucune donnée disponible

Chemical stability

Stabilité chimique
Stable under recommended storage conditions.
Stable dans les conditions d'entreposage recommandées.

Possibility of Hazardous Reactions

Possibilité de réactions dangereuses
None under normal processing.
Aucun dans le cadre d'un traitement normal.

Hazardous Polymerization

Polymérisation dangereuse
Hazardous polymerization does not occur.
La polymérisation dangereuse ne se produit pas.

Conditions to avoid

Conditions à éviter
None known based on information supplied.
inconnu s'appuyant sur les informations fournies.

Incompatible materials

Matériaux incompatibles
Strong acids. Strong oxidizing agents. Strong bases.
Des acides forts. Agents oxydants forts. Des bases solides.

Hazardous Decomposition Products

Produits de décomposition dangereux
Carbon oxides.
Des oxydes de carbone.

11. TOXICOLOGICAL INFORMATION

11. INFORMATIONS TOXICOLOGIQUES

Information on likely routes of exposure

Product Information

Informations sur les produits

Product does not present an acute toxicity hazard based on known or supplied information In case of rupture
Le produit ne présente pas de risque de toxicité aigu fondé sur des informations connues ou fournies en cas de rupture

Inhalation

Inhalation

Specific test data for the substance or mixture is not available.

Corrosive by inhalation.(based on components).

Les données d'essai spécifiques pour la substance ou le mélange ne sont pas disponibles. Corrosif par inhalation. (basé sur des composants).

Eye Contact

Contact visuel

Specific test data for the substance or mixture is not available.

Expected to be and irritant based on components. Irritating to eyes.

May cause redness, itching, and pain. May cause temporary eye irritation.

Les données d'essai spécifiques pour la substance ou le mélange ne sont pas disponibles. Prévu pour être irritant basé sur les composants. Irritant pour les yeux. Peut causer des rougeurs, des démangeaisons et de la douleur. Peut causer une irritation temporaire des yeux.

Skin Contact

Contact peau

Specific test data for the substance or mixture is not available.

Expected to be an irritant based on components. Irritating to skin.

Prolonged contact may cause redness and irritation.

Les données d'essai spécifiques pour la substance ou le mélange ne sont pas disponibles. On s'attend à être un irritant basé sur des composants. Irritant pour la peau. Un contact prolongé peut causer des rougeurs et de l'irritation.

Ingestion

Ingestion

Specific test data for the substance or mixture is not available.

Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Les données d'essai spécifiques pour la substance ou le mélange ne sont pas disponibles. L'ingestion peut causer une irritation des muqueuses. L'ingestion peut causer une irritation gastro-intestinale, des nausées, des vomissements et de la diarrhée.

Component Information

Informations sur les composants

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Potassium hydroxide 1310-58-3	= 214 mg/kg (Rat)	-	-
Manganese dioxide 1313-13-9	= 9000 mg/kg (Rat)	-	-
Iron 7439-89-6	= 984 mg/kg (Rat)	-	-
Graphite 7782-42-5	> 10000 mg/kg (Rat)	-	-

Information on toxicological effects

Informations sur les effets toxicologiques

Symptoms

Symptômes

Erythema (skin redness). May cause redness and tearing of the eyes.

Coughing and/ or wheezing.Itching.

Érythème (rougeur de peau). Peut causer des rougeurs et des déchirures des yeux. Toux et/ou respiration sifflante. Démangeaisons.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Effets retardés et immédiats ainsi que effets chroniques de l'exposition à court et à long terme

Sensitization

Sensibilisation

May cause sensitization of susceptible persons. May cause sensitization by skin contact.

Peut provoquer la sensibilisation des personnes sensibles. Peut provoquer une sensibilisation par contact cutané.

Mutagenic Effects

Effets mutagènes

No information available

Aucune information disponible

12. ECOLOGICAL INFORMATION**12.INFORMATIONS ÉCOLOGIQUES****Ecotoxicity**

Very toxic to aquatic life with long lasting effects.

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

Persistence and Degradability

Persistence et dégradabilité

No information available.

Aucune information disponible.

Bioaccumulation

Bioaccumulation

No information available

Aucune information disponible.

Other adverse effects

Autres effets indésirables

No information available.

Aucune information disponible.

13. DISPOSAL CONSIDERATIONS

13. CONSIDÉRATIONS D'ÉLIMINATION

Waste treatment methods

Méthodes de traitement des déchets

Disposal methods

Méthodes d'élimination

Contaminated Packaging

Emballage contaminé

Should not be released into the environment.

Ne doit pas être libéré dans l'environnement.

Dispose of in accordance with federal, state and local regulations.

Disposer conformément aux réglementations fédérales, étatiques et locales.

California Hazardous Waste Codes 141

Codes de déchets dangereux de la Californie 141

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

14. TRANSPORT INFORMATION

14. INFORMATIONS SUR LES TRANSPORTS

DOT**Proper Shipping Name**

Nom d'expédition approprié

Hazard Class

Catégorie de danger

TDG**MEX****ICAO****IATA****Proper Shipping Name**

Nom d'expédition approprié

Hazard Class

Catégorie de danger

IMDG/IMO**Proper Shipping Name**

Nom d'expédition approprié

Hazard Class

Catégorie de danger

EmS No.**RID****ADR****AND**

NOT REGULATED

NON RÉGLEMENTÉ

NOT REGULATED

NON RÉGLEMENTÉ

N/A

N/A

Not regulated

NON RÉGLEMENTÉ

Not regulated

NON RÉGLEMENTÉ

Not regulated

NON RÉGLEMENTÉ

Not regulated

NON RÉGLEMENTÉ

Not regulated

NON RÉGLEMENTÉ

N/A

N/A

Not regulated

NON RÉGLEMENTÉ

NON-REGULATED PER SP 188

N/A

F-A, S-I

Not regulated

NON RÉGLEMENTÉ

Not regulated

NON RÉGLEMENTÉ

Not regulated

NON RÉGLEMENTÉ

NOT REGULATED

NON RÉGLEMENTÉ

15. REGULATORY INFORMATION**15. INFORMATIONS RÉGLEMENTAIRES****International Inventories**

Inventaires internationaux

TSCA

Complies

Conforme

DSL

All components are listed either on the DSL or NDSL.

Tous les composants sont répertoriés soit sur le DSL ou NDSL

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

TSCA - United States Toxic Substances Control Act Section 8(b) Inventaire

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List Liste des substances domestiques

DSL/NDSL - Canadiennes/Liste des substances non domestiques

US Federal Regulations

Règlement fédéral des États-Unis

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

L'article 313 du Titre III de la Superfund Amendments and Reauthorization Act of 1986 (SARA). Ce produit contient un produit chimique ou chimique qui est assujéti aux exigences de déclaration de la Loi et du titre 40 du Code de réglementation fédérale, Partie 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Manganese dioxide	1313-13-9	30	1.0
Zinc	7440-66-6	8	1.0

SARA 311/312 Hazard Categories

SARA 311/312 Catégories de dangers

Acute Health Hazard	No
Risque aigu pour la santé	non
Chronic Health Hazard	No
Risque chronique pour la santé	non
Fire Hazard	No
Incendie Risque	non
Sudden release of pressure hazard	No
Libération soudaine du risque de pression	non
Reactive Hazard	No
Risque réactif	non

CWA (Clean Water Act)**CWA (Loi sur l'eau propre)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Ce produit contient les substances suivantes qui sont des polluants réglementés en vertu de la Loi sur l'eau propre (40 CFR 122,21 et 40 CFR 122,42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zinc		X	X	
Potassium hydroxide	1000 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Ce matériel, tel qu'il est fourni, contient une ou plusieurs substances réglementées comme substance dangereuse en vertu de la Loi sur l'indemnisation et la responsabilité en matière d'indemnisation et de responsabilité environnementales globales (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Zinc 7440-66-6	1000 lb		RQ 454 kg final RQ RQ 1000 lb final RQ
Potassium hydroxide 1310-58-3	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

Règlement des États-Unis

California Proposition 65

Proposition de la Californie 65

This product does not contain the Proposition 65 chemicals.

Ce produit ne contient pas les produits chimiques de la Proposition 65

U.S. State Right-to-Know Regulations

Règlement sur le droit de savoir des États-Unis

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Manganese dioxide 1313-13-9		X	X	X	
Zinc 7440-66-6	X	X	X		X
Potassium hydroxide 1310-58-3	X	X	X		X
Graphite 7782-42-5	X	X	X		

International Regulations

Règlement international

Mexico**National occupational exposure limits**

Limites nationales d'exposition professionnelle

Component	Carcinogen Status	Exposure Limits
Manganese dioxide 1313-13-9		Mexico: TWA= 0.2 mg/m ³
Graphite 7782-42-5		Mexico: TWA= 2 mg/m ³

Mexico - Occupational Exposure Limits – Carcinogens

Mexico - Limites d'exposition professionnelle - Cancérogène

16. OTHER INFORMATION

16.AUTRES INFORMATIONS

Prepared By

Préparé par

AGAWO NEW ENERGY TECHNOLOGY CO.,LTD

Revision Date

Date de révision

27-Jan-2020

Revision Note

Note de révision

No information available

Aucune information disponible

End of Safety Data Sheet

Feuille de données de fin de sécurité

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 Powerpack 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@cnpowerpack.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

Alkaline Zn-Mn Dry Battery LR6AA

Safety Data Sheet

According to OSHA Hazard Communication Standard 29 CFR 1910.1200

3.2. Mixtures

Name	Product identifier	%
Manganese oxide (MnO ₂)	(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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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

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 disassembly 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

Manganese oxide (MnO₂) (1313-13-9)
Not applicable
Steel (12597-69-2)
Not applicable
Zinc (7440-66-6)
Not applicable

Alkaline Zn-Mn Dry Battery LR6AA

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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

Potassium hydroxide (1310-58-3)

ACGIH	ACGIH Ceiling (mg/m³)	2 mg/m³
NIOSH	NIOSH REL (ceiling) (mg/m³)	2 mg/m³

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

Alkaline Zn-Mn Dry Battery LR6AA

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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

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

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

Alkaline Zn-Mn Dry Battery LR6AA

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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

Zinc (7440-66-6)

EC50 crustacea 48h	0.068 mg/L
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Manganese oxide (MnO₂) (1313-13-9)

Log Pow	< 0 (at 20 °C)
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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
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Potassium hydroxide (1310-58-3)

CERCLA RQ	1000 lb
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Alkaline Zn-Mn Dry Battery LR6AA

Safety Data Sheet

According to OSHA Hazard Communication Standard 29 CFR 1910.1200

15.2. International regulations

CANADA

Manganese oxide(MnO₂) (1313-13-9)
Listed on the Canadian DSL (Domestic Substances List)
Zinc (7440-66-6)
Listed on the Canadian DSL (Domestic Substances List)
Potassium hydroxide (1310-58-3)
Listed on the Canadian DSL (Domestic Substances List)

EJ-Regulations

Manganese oxide(MnO₂) (1313-13-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Zinc (7440-66-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Potassium hydroxide (1310-58-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Manganese oxide(MnO₂) (1313-13-9)
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 CIQR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Steel(12597-69-2)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Zinc (7440-66-6)
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 CIQR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Potassium hydroxide (1310-58-3)
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 CIQR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Vinylacetal polymers, formals (63148-64-1)
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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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

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 EUH-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

NITE-CHIRP: 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

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

Alkaline Zn-Mn Dry Battery LR6AA

Safety Data Sheet

According to OSHA Hazard Communication Standard 29 CFR 1910.1200

3.2. Mixtures

Name	Product identifier	%
Manganese oxide (MnO ₂)	(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.

Alkaline Zn-Mn Dry Battery LR6AA

Safety Data Sheet

According to OSHA Hazard Communication Standard 29 CFR 1910.1200

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 disassembly 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

Manganese oxide (MnO₂) (1313-13-9)
Not applicable
Steel (12597-69-2)
Not applicable
Zinc (7440-66-6)
Not applicable

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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

Potassium hydroxide (1310-58-3)

ACGIH	ACGIH Ceiling (mg/m³)	2 mg/m³
NIOSH	NIOSH REL (ceiling) (mg/m³)	2 mg/m³

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

Alkaline Zn-Mn Dry Battery LR6AA

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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

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

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

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

Alkaline Zn-Mn Dry Battery LR6AA

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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

Zinc (7440-66-6)

EC50 crustacea 48h	0.068 mg/L
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Manganese oxide (MnO₂) (1313-13-9)

Log Pow	< 0 (at 20 °C)
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Potassium hydroxide (1310-58-3)

Log Pow	0.83
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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
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Potassium hydroxide (1310-58-3)

CERCLA RQ	1000 lb
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Alkaline Zn-Mn Dry Battery LR6AA

Safety Data Sheet

According to OSHA Hazard Communication Standard 29 CFR 1910.1200

15.2. International regulations

CANADA

Manganese oxide(MnO₂) (1313-13-9)
Listed on the Canadian DSL (Domestic Substances List)
Zinc (7440-66-6)
Listed on the Canadian DSL (Domestic Substances List)
Potassium hydroxide (1310-58-3)
Listed on the Canadian DSL (Domestic Substances List)

EJ-Regulations

Manganese oxide(MnO₂) (1313-13-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Zinc (7440-66-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Potassium hydroxide (1310-58-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Manganese oxide(MnO₂) (1313-13-9)
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 CIQR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Steel(12597-69-2)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Zinc (7440-66-6)
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 CIQR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Potassium hydroxide (1310-58-3)
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 CIQR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Vinylacetal polymers, formals (63148-64-1)
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 EUH-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

NITE-CHRIIP: 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

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 Powerpack 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 ₂)	(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.

Alkaline Zn-Mn Dry Battery LR6AA

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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

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 disassembly 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

Manganese oxide (MnO₂) (1313-13-9)
Not applicable
Steel (12597-69-2)
Not applicable
Zinc (7440-66-6)
Not applicable

Alkaline Zn-Mn Dry Battery LR6AA

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According to OSHA Hazard Communication Standard 29 CFR 1910.1200

Potassium hydroxide (1310-58-3)

ACGIH	ACGIH Ceiling (mg/m³)	2 mg/m³
NIOSH	NIOSH REL (ceiling) (mg/m³)	2 mg/m³

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

Alkaline Zn-Mn Dry Battery LR6AA

Safety Data Sheet

According to OSHA Hazard Communication Standard 29 CFR 1910.1200

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

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

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

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Zinc (7440-66-6)

EC50 crustacea 48h	0.068 mg/L
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12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Manganese oxide (MnO₂) (1313-13-9)

Log Pow	< 0 (at 20 °C)
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Potassium hydroxide (1310-58-3)

Log Pow	0.83
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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
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Potassium hydroxide (1310-58-3)

CERCLA RQ	1000 lb
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15.2. International regulations

CANADA

Manganese oxide(MnO₂) (1313-13-9)
Listed on the Canadian DSL (Domestic Substances List)
Zinc (7440-66-6)
Listed on the Canadian DSL (Domestic Substances List)
Potassium hydroxide (1310-58-3)
Listed on the Canadian DSL (Domestic Substances List)

EJ-Regulations

Manganese oxide(MnO₂) (1313-13-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Zinc (7440-66-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Potassium hydroxide (1310-58-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Manganese oxide(MnO₂) (1313-13-9)
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 CIOCR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Steel(12597-69-2)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Zinc (7440-66-6)
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 CIOCR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Potassium hydroxide (1310-58-3)
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 CIOCR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)
Vinylacetal polymers, formals (63148-64-1)
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 EUH-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

NITE-CHIRP: 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