Safety Data Sheet

This sheet is only provided as technical information and is referred normal use of the product in question. Pairdeer makes no warranty expressed or implied.

Section 1- Identification

● Product Name Alkaline zinc-manganese dioxide batteries	Sizes LR6/LR03/LR20/LR14
● Company: Zhongyin (Ningbo) Battery Co., Ltd.	Telephone Numbers: +86 574 87491087 / 87493214
● Address: 128 Xingguang Road, Hi-Tech Park Ningbo China	Fax Numbers: +86 574 87493903
	Date of preparation Jan.1, 2024

Section 2-Hazards Identification

This contains potassium hydroxide solution (KOH), and other combustible materials, all sealed in steel can. For this reason, improper handling of the battery could lead to distortion, leakage*, overheating, explosion and cause human injury or equipment trouble. Please strictly observe safety instructions.

(*leakage is defined as an unintended escape of liquid from a battery.)

GHS classification: N/A

Signal Word: N/A

Hazard Classification: N/A

Under normal conditions of use, the battery is hermetically sealed.

Ingestion: Swallowing may lead to serious injury or death in as little as 2 hours due to chemical burns and potential perforation of the

esophagus. Immediately see doctor; have doctor phone (202) 625-3333. Do not induce vomiting or give food or drink.

Inhalation: Contents of an open battery can cause respiratory irritation.

Skin Contact: Contents of an open battery can cause skin irritation.

Eye Contact: Contents of an open battery can cause severe irritation.

Caution printed on each package to notify consumers: May explode or leak, and cause burn injury, if recharged, disposed of in fire, mixed with a different battery type, inserted backward or disassembled. Replace all used batteries at the same time. Do not carry batteries loose in your pocket or purse.

Section 3-Composition/Information on Ingredients

Ingredient	CAS#	Approximate Content(wt%)			
		LR6	LR03	LR14	LR20
Manganese Dioxide (MnO_2)	1313-13-9	42.6	40.9	40.6	41.8
Zinc (Zn)	7440-66-6	16.1	14.8	16.0	17.4
Water (H_2O)	7732-18-5	12.2	11.7	11.0	11.1
Potassium Hydroxide (KOH)	1310-58-3	5.2	4.8	7.0	7.0
Graphite	7782-42-5	3.0	1.7	3.2	3.4
Brass	12597-71-6	2.4	3.0	1.2	0.8
Iron	7439-89-6	15.7	20.4	18.6	16.3
Nickel	7440-02-0	0.3	0.3	0.2	0.2
Nylon-66	32131-17-2	1.6	1.5	1.6	1.4
Polyvinyl alcohol	9002-89-5	0.9	0.9	0.6	0.6

Section 4-First -Aid Measures

None unless internal materials exposure. If contents are leaked out, observe following instructions

Inhalation Fumes can cause respiratory irritation. Remove to fresh air and consult a physician.

Skin Immediately flush skin with plenty of water. If itch or irritation by chemical burn persists, consult a physician.

Eyes Immediately flush eye with plenty of water for at least 15 minutes. Consult a physician immediately

NA=Not Applicable

Ingestion If swallowing a battery, consult a physician immediately.
If contents come into mouth, immediately rinse by plenty of water and consult a physician.

Section 5-Fire-Fighting Measures

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

Fire fighters should wear self-contained breathing apparatus.

Section 6-Accidental Release Measures

Steps to be taken in case material is released or spilled.

Batteries that are leakage should be handled with rubber gloves.

Avoid direct contact with electrolyte.

Wear protective clothing and a positive pressure Self-Contained Breathing Apparatus (SCBA).

Section 7-Handling and Storage

1) Handling

Never swallow. Never charge. Never heat. Never expose to open flame. Never disassemble. Never reverse the positive and negative terminals when mounting. Never short-circuit the battery. Never weld the terminal or wire to the body of the battery directly. Never use different batteries together. Never touch the liquid leaked out of battery. Never bring fire close to battery liquid. Never keep in touch with battery.

2) Storage

Never store the battery in hot and high humid place.

Section 8-Exposure Controls/Personal Protection

No engineering measure is necessary during normal use. If internal cell materials are leaked, the information in Section 4 & Section 6 will be useful.

Section 9-Physical and Chemical Characteristics

Nominal Voltage: 1.5V

Appearance	Solid object
Odor	None
Odor threshold	Not Measured
pH	NA
Melting point / freezing point	NA
Initial boiling point and boiling range	NA
Flash Point	NA
Evaporation rate (Ether = 1)	NA
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** NA
	Upper Explosive Limit: NA
Vapor pressure (Pa)	NA
Vapor Density	NA
Specific Gravity	NA
Solubility in Water	Insoluble
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	NA
Decomposition temperature	NA
Viscosity (cSt)	NA
VOC %	NA

Section 10-Stability and Reactivity

Stability	Stable
Hazardous polymerization	Will not occur
Condition to avoid	See section 7.
Hazardous Decomposition or Byproducts	Hydrogen

Section 11-Toxicological Information

NA

Section 12-Ecological Information

NA

Section 13-Disposal Considerations

The battery may be regulated by national or local regulation. Please follow the instructions of proper regulation. As electric capacity is left in a discarded battery and it comes into contact with other metals, it could lead to distortion, leakage, overheating, or

explosion, so make sure to cover the (+)and (-) terminals with friction tape or some other insulator before disposal.

Section 14-Transportation Information

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in “strong outer packaging” that prevents spillage of contents. All original packaging for Pairdeer alkaline batteries has been designed to be compliant with these regulatory concerns.

Alkaline batteries (sometimes referred to as “Dry cell” batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Good Regulations, IATA Dangerous Goods Regulations, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

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

All Pairdeer alkaline batteries are packed in such a way to prevent short circuits or the generation dangerous quantities of heat and meet the special provisions listed above. In addition, the 2022 IATA (63rd edition) Dangerous Goods Regulations and ICAO Technical Instructions require the words “not restricted” and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

Section 15-Regulatory Information

USA EPA Mercury Containing & Rechargeable Battery Management Act of 1996: No mercury added

EU Battery Directive 2006/66/EC Amended 2013/56/EU: Pairdeer batteries are compliant with all aspects of the Directive

Section 16-Other Information

NA=Not Applicable

If you want further information, please contact Pairdeer sales representative

NA=Not Applicable

Safety Data Sheet

According to HCS-2012 APPENDIX D TO §1910.1200 & WHMIS 2015

Version: 1.0/EN
Product name: Alkaline Battery

Revision date: 01/01/2020
Issue date: 23/10/2020

1. Identification

identification

(a) Product identifier

étiquette d'un produit

Product name:	Alkaline Manganese Dioxide-Zinc Battery
Nom du produit:	Batterie alcaline au dioxyde de manganèse-zinc

(b) Other means of identification

Autres moyens d'identification

Product description:	Model: LR03（AAA）; LR6（AA）; LR14（C）; LR20（D）; LR61（AAAA）; 6LR61（9V）
Description du produit:	Modèle: LR03（AAA）; LR6（AA）; LR14（C）; LR20（D）; LR61（AAAA）; 6LR61（9V）

(b) Recommended use of the chemical and restrictions on use

Utilisation recommandée du produit chimique et restrictions d'utilisation

Recommended use:	Alkaline Manganese Dioxide-Zinc Battery
Utilisation recommandée:	Batterie alcaline au dioxyde de manganèse-zinc
Restriction on use:	No information available.
Pas d'information disponible.	Pas d'information disponible.

(c) Details of the supplier of the product

Détails du fournisseur du produit

Company name Nom de la compagnie	Fujian Nanping Nanfu Battery Co., Ltd.
Address: Adresse:	109 Industry Road, Nanping, Fujian, P.R.C., 353000
E-mail: Email:	Service@nanfu.com
Telephone: Téléphone:	+86 599 8735117

(e) Emergency phone number

Numéro de téléphone d'urgence

+86 599 8735117

2. Hazard(s) identification Identification des dangers

Hazards Identification： Identification des dangers

The battery is not restricted to IATA DGR according to special provision A123

La batterie n'est pas limitée à IATA DGR selon la disposition spéciale A123

This substance is considered to be non-hazardous for transport.

Cette substance est considérée comme non dangereuse pour le transport.

Emergency Overview： Aperçu des urgences

Avoid contact and inhalation the internal materials. Emit toxic fumes fire conditions.

Évitez le contact et l'inhalation des matériaux internes. Emettre des fumées toxiques en cas d'incendie.

3. Composition/information on ingredients

Composition / informations sur les composants

(a) Mixtures information Informations sur les mélanges

Chemical name	CAS No.	Concentration%
Manganese Dioxide	1313-13-9	41
Zinc	7440-66-6	17.5
Water (H2O)	7732-18-5	17
Graphite	7782-42-5	11.5
Potassium Hydroxide	1310-58-3	2.9
Iron	7439-89-6	5.47
Brass	12597-71-6	2.3
Zinc Oxide	1314-13-2	2.33

4. First-aid measures

Premiers secours

(a) Description of first aid measures

Description des premiers secours

General Advice First aid is upon rupture of sealed cell.

Conseil général Les premiers secours sont à la rupture de lacell scellée.

Eye contact: Show this safety data sheet to the doctor in attendance.

Lentilles de contact: 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.
Montrer cette fiche de données de sécurité au médecin traitant.
Rincer immédiatement à grande eau, y compris sous les paupières, pendant au moins 15 minutes. Gardez les yeux grands ouverts pendant le rinçage. Retirez les lentilles cornéennes, si elles sont présentes et faciles à faire. Continuer à rincer. Consulter un médecin si une irritation se développe et persiste. Ne pas frotter la zone touchée.

Skin contact:
Contact avec la peau:
Remove contaminated clothes and rinse the skin with plenty of water. Get medical advice / attention if you feel unwell.
Retirer les vêtements contaminés et rincer la peau à grande eau. Consulter un médecin si vous ne vous sentez pas bien.

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen. Get medical advice / attention if you feel unwell.
Sortir à l'air frais. En cas d'arrêt respiratoire, pratiquer la respiration artificielle. Si la respiration est difficile, (du personnel qualifié devrait) donner de l'oxygène. Consulter un médecin si vous ne vous sentez pas bien.

Ingestion:
Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical aid.
Rincer la bouche immédiatement et boire beaucoup d'eau. Ne portez rien à la bouche d'une personne inconsciente. NE PAS faire vomir. Obtenez de l'aide médicale.

Self-protection of the first aider
Autoprotection du secouriste
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
Assurez-vous que le personnel médical connaît le (s) matériau (s) impliqué (s), prenez des précautions pour vous protéger et éviter la propagation de la contamination.

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

Principaux symptômes / effets, aigus et différés

Contact with internal components may cause allergic skin sensitization (rash) and irritate eyes, skin, nose, throat, respiratory system. Cobalt and Cobalt compounds are considered to be possible human carcinogen(s).

Le contact avec des composants internes peut provoquer une sensibilisation allergique de la peau (éruption cutanée) et irriter les yeux, la peau, le nez, la gorge et les voies respiratoires. Le cobalt et les composés de cobalt sont considérés comme des cancérogènes possibles pour l'homme.

(c) Immediate medical attention and special treatment

Soins médicaux immédiats et traitement spécial

No information available.
Pas d'information disponible.

5. Fire-fighting measures

Mesures de lutte contre l'incendie

(a) Extinguishing media

Moyens d'extinction

Suitable extinguishing media:	Use foam, dry powder or dry sand, CO_2 as appropriate.
Moyen d'extinction approprié:	Utilisez de la mousse, de la poudre sèche ou du sable sec et du CO2, selon le cas.
Unsuitable extinguishing media:	No information available.
Moyens d'extinction inappropriés:	Pas d'information disponible.

(b) Special hazards arising from the chemical

Dangers particuliers résultant du produit chimique

Under fire conditions,cells may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO_2, Metal oxides, Irritating fumes

En cas d'incendie, lescells peuvent éclater et libérer des produits de décomposition dangereux lorsqu'elles sont exposées à un incendie. Cela pourrait entraîner la libération de matériaux inflammables ou corrosifs. Produits de combustion dangereux: CO, CO2, Oxydes métalliques, Vapeurs irritantes

(C) Special protective equipment and precautions for fire-fighters

Équipements de protection spéciaux et précautions spéciales pour les pompiers

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

Les pompiers doivent porter un équipement de protection résistant au feu et un appareil respiratoire approprié. Le personnel doit être équipé d'un masque filtrant (masque complet) ou d'un appareil respiratoire isolé. Le personnel doit porter des vêtements qui peuvent protéger du feu et des gaz toxiques. Éteignez le feu dans la direction du vent. Retirez le conteneur dans l'espace ouvert dès que possible. Pulvérisez de l'eau sur les récipients dans le foyer pour les garder au frais jusqu'à l'extinction finale.

6. Accidental release measures

Mesures à prendre en cas de dispersion accidentelle

(a) Personal precautions, protective equipment and emergency procedures

Précautions individuelles, équipement de protection et procédures d'urgence

If the cell material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area, dispose the case after thecells cool and vapors dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors.

Si le matériau de lacell est libéré, éloignez le personnel de la zone jusqu'à ce que les vapeurs se dissipent. Fournir une ventilation maximale pour éliminer les gaz dangereux. La meilleure solution consiste à quitter la zone, à jeter le boîtier une fois les piles refroidies et les vapeurs dissipées. Fournir une ventilation maximale. Eviter le contact avec la peau et les yeux ou l'inhalation de vapeurs.

(b) Environmental Precautions
Précautions environnementales

Prevent material from contaminating soil and from entering sewers or waterways.
Empêcher le matériau de contaminer le sol et de pénétrer dans les égouts ou les voies navigables.

(c) Methods and materials for containment and cleaning up

Méthodes et matériel de confinement et de nettoyage

If the cell casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

Si le boîtier de lacell est démonté, de petites quantités d'électrolyte peuvent fuir.Récuplez tout le produit libéré dans un récipient doublé de plastique.Éliminer conformément à la loi et aux règles en vigueur Eviter que les substances lessivées pénètrent dans la terre, dans les canaux ou dans les eaux.

7. Handling and storage

Manutention et stockage

(a) Precautions for safe handling

Précautions à prendre pour une manipulation sans danger

Always follow the warning information on thecells and in the manuals of devices. Only use the recommended cell types. Keepcells away from children. For devices to be used by children, the cell casing should be protected against unauthorized access. Unpackedcells shall not lie about in bulk. In case of cell change always replace allcells by new ones of identical type and brand. Do not swallowcells. Do not throwcells into water. Do not throwcells into fire. Avoid deep discharge. Do not short-circuitcells Use recommended charging time and current.

Toujours après les informations d’avertissement figurant sur lescells et dans les manuels des appareils. Utilisez uniquement les types decell recommandés. Gardez lescells hors de portée des enfants. Pour les appareils destinés à être utilisés par des enfants, le boîtier de lacell doit être protégé par un accès non autorisé. En cas de changement de pile, remplacez toujours toutes les piles par des neuves du même type et de même marque. Ne jetez pas les piles dans l'eau. Ne jetez pas les piles au feu. Ne jetez pas les piles au feu. Circuit descells Utilisez le temps de charge et le

courant recommandés.

(b) Conditions for safe storage, including any incompatibilities

Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités

If the cell is subject to storage for such a long term as more than 3 months, it is recommended to recharge the cell periodically. And recommended at -5℃~45℃ for 1 month storage, at -5℃~35℃ for 3 months storage. Do not storage the cell haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. Keep out of reach of children.

Si lacell est stockée pendant une période aussi longue que plus de 3 mois, il est recommandé de la recharger périodiquement, à une température comprise entre -5 ° C et 45 ° C pendant 1 mois, entre -5 ° C et 35 ° C pendant 3 mois. Mois de stockage Ne rangez pas lacell au hasard dans une boîte ou un tiroir où elle pourrait se court-circuiter ou être court-circuitée par d'autres objets métalliques.

8. Exposure controls/personal protection

Contrôles de l'exposition / protection individuelle

(a)Control parameters Paramètres de contrôle

ACGIH TLV: American Conference of Governmental Industrial Hygienists -Threshold Limit Value
Conférence américaine des hygiénistes industriels gouvernementaux - Valeur limite de seuil

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous t
Life or Health
Administration de la sécurité et de la santé au travail - Limites d'exposition admissibles immédiatemen
dangereuses pour la vie ou la santé

Other Exposure Guidelines: Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2
962(11th Cir., 1992) See section 15 for national exposure control parameters
Autres directives d'exposition： Limites annulées révoquées par la décision de la Cour d'appel dans AFL-CIO c. OSHA
965 F.2d 962 (11th Cir., 1992) Voir la section 15 pour les paramètres nationaux de contrôle de l'exposition

(b) Appropriate engineering controls Contrôles d'ingénierie appropriés

Engineering Measures: 1. Showers Douches
Mesures d'ingénierie 2. Eyewash stations Douches oculaires
3. Ventilation systems Systèmes de ventilation

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

Mesures de protection individuelle, telles que les équipements de protection individuelle

Eye/Face Protection: **Protection des yeux / du visage**	Not necessary under normal conditions, wear safety glasses if handling an open or leaking battery. Pas nécessaire dans des conditions normales, portez des lunettes de sécurité si vous manipulez une batterie ouverte ou qui fuit.
Skin and body Protection: **Protection de la peau et du corps**	Not necessary under normal conditions, wear protective gloves and protective clothing such as long-sleeved clothing, impervious gloves, chemical resistant apron, and antistatic boots if handling an open or leaking battery. Pas nécessaire dans des conditions normales, portez des gants de protection et des vêtements de protection tels que des vêtements à manches longues, des gants imperméables, un tablier résistant aux produits chimiques et des bottes antistatiques si vous manipulez une batterie ouverte ou qui fuit.
Respiratory Protection: **Protection respiratoire**	Not necessary under normal conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Pas nécessaire dans des conditions normales. En cas de dépassement des limites d'exposition ou d'irritation, une ventilation et une évacuation peuvent être nécessaires.
Hygiene Measures: **Mesures d'hygiène**	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink, or smoke in work area. Maintain good housekeeping. Manipuler conformément aux bonnes pratiques d'hygiène industrielle et de sécurité. Évitez tout contact avec la peau, les yeux ou les vêtements. Porter des gants appropriés et une protection oculaire / faciale. Ne pas manger, boire ou fumer dans la zone de travail. Maintenez un bon entretien ménager.

9. Physical and chemical properties

Propriétés physiques et chimiques

(a) Appearance		Silver Solid	Argent massif
(b) Odor	**Odeur**	Odorless	Inodore
(c) Odor threshold	**Seuil d'odeur**	Not available.	Indisponible
(d) pH		Not available.	Indisponible
(e) Melting point/freezing point **Point de fusion / point de congélation**		Not available.	Indisponible
(f) Initial boiling point and boiling range **Point d'ébullition initial et intervalle d'ébullition**		Not available.	Indisponible
(g) Flash point	**point de rupture**	Not applicable.	Indisponible
(h) Evaporation rate	**Taux d'évaporation**	Not applicable.	Indisponible
(i) Flammability	**Inflammabilité**	Nonflammable.	Ininflammable

(j) Upper/lower flammability or explosive limits **Limites supérieures / inférieures d'inflammabilité ou d'explosivité**	Not available.	Indisponible
(k) Vapor pressure La pression de vapeur	Not applicable.	N'est pas applicable
(l) Vapor density La densité de vapeur	Not available.	Indisponible
(m) Relative density Densité relative	Not available.	Indisponible
(n) Solubility(ies) Solubilité (s)	Insoluble in water.	Insoluble dans l'eau
(o) Partition coefficient: n-octanol/water **Coefficient de partage: n-octanol / eau**	Not available.	Indisponible
(p) Auto-ignition temperature **La température d'auto-inflammation**	130℃	
(q) Decomposition temperature **température de décomposition**	Not available.	Indisponible
(r) Viscosity Viscosité	Not available.	Indisponible

10. Stability and reactivity

Stabilité et réactivité

(a) Reactivity ***Réactivité***

Stable under recommended storage and handling conditions.
Stable dans les conditions de stockage et de manipulation recommandées.

(b) Chemical stability ***Stabilité chimique***

Stable under normal conditions. Stable dans des conditions normales.

(c) Possibility of hazardous reactions ***Possibilité de réactions dangereuses***

When heated above 150°C the risk of rupture occurs. Due to special safety construction, rupture implies controlled release of pressure without ignition.
Au-dessus de 150 ° C, le risque de rupture est présent. En raison de la construction de sécurité spéciale, la rupture implique une libération contrôlée de la pression sans inflammation.

(d) Conditions to avoid ***Conditions à éviter***

Do not subject the cell to mechanical shock. Keep away from open flames, high temperature.
Ne soumettez pas lacell à des chocs mécaniques. Tenir à l'abri des flammes nues, des températures élevées.

(e) Incompatible materials ***Matériaux incompatibles***

Strong oxidizer, strong acid. Oxydant fort, acide fort.

(f) Hazardous decomposition products ***Produits de décomposition dangereux***

Under fire conditions, the electrode materials can form carcinogenic nickel and cobalt oxides.
En cas d'incendie, les matériaux des électrodes peuvent former des oxydes cancérigènes du nickel et du cobalt.

11. Toxicological information

Informations toxicologiques

(a) Information on the likely routes of exposure

Informations sur les voies d'exposition probables

Inhalation:	Inhalation of a large number of vapors or fumes released due to heat may cause respiratory. L'inhalation d'un grand nombre de vapeurs ou de vapeurs dégagées par la chaleur peut causer des problèmes respiratoires.
Ingestion:	Ingestion of cell contents may cause mouth, throat and intestinal burns and damage. L'ingestion du contenu de lacell peut provoquer des brûlures et des dommages à la bouche, à la gorge et à l'intestin.
Skin contact:	Contact with cell electrolyte may cause burns and skin irritation.
Contact avec la peau:	Le contact avec l'électrolyte de lacell peut provoquer des brûlures et une irritation de la peau.
Eye contact:	Contact with cell electrolyte may cause burns. Eye damage is possible.
Lentilles de contact:	Le contact avec l'électrolyte de lacell peut provoquer des brûlures. Les dommages aux yeux sont possibles.

Under normal conditions (during charge and discharge) release of ingredients does not occur. If accidental release occurs see information in section 4. Swallowing of a cell can be harmful. Call the local Poison Control Centre for advice and follow-up.

Dans des conditions normales (pendant le chargement et le déchargement), les ingrédients ne sont pas libérés. Si une libération accidentelle se produit, voir les informations de la section 4. L'ingestion d'une pile peut être nocive. Appelez le centre antipoison local pour obtenir des conseils et un suivi.

(b) Information on toxicological characteristics

Informations sur les caractéristiques toxicologiques

Acute toxicity: **Toxicité aiguë:**	No data available.	Pas de données disponibles
Skin corrosion/irritation: **Corrosion cutanée / irritation cutanée:**	The liquid in the cell irritates. Le liquide dans lacell irrite.	
Serious eye damage/irritation: **Lésions oculaires graves / irritation:**	The liquid in the cell irritates. Le liquide dans lacell irrite.	
Respiratory sensitization: **Sensibilisation respiratoire:**	The liquid in the cell may cause sensitization to some person. Le liquide dans lacell peut provoquer une sensibilisation chez une personne.	
Skin sensitization: **Sensibilisation de la peau:**	The liquid in the cell may cause sensitization to some person. Le liquide dans lacell peut provoquer une sensibilisation chez une personne.	
Carcinogenicity: **Cancérogénicité:**	Cobalt and Cobalt compounds are considered to be possible human carcinogen(s). Le cobalt et les composés de cobalt sont considérés comme des cancérogènes possibles pour l'homme.	
Germ Cell Mutagenicity: **Mutagénicité des cellules germinales:**	No data available.	Pas de données disponibles

Reproductive Toxicity:	No data available.	Pas de données disponibles
Toxicité pour la reproduction:		
STOT-Single Exposure:	No data available.	Pas de données disponibles
Exposition simple STOT:		
STOT-Repeated Exposure:	No data available.	Pas de données disponibles
Exposition répétée STOT:		
Aspiration Hazard:	No data available.	Pas de données disponibles
Danger d'aspiration:		

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

Effets retardés et immédiats ainsi que les effets chroniques d'une exposition à court et à long terme

Sensitization:	No data available.	Pas de données disponibles
Sensibilisation:		
Mutagenic Effects:	No data available.	Pas de données disponibles
Effets mutagènes:		
Carcinogenicity:	No data available.	Pas de données disponibles
Cancérogénicité:		
Reproductive Toxicity:	No data available.	Pas de données disponibles
Toxicité pour la reproduction:		
Chronic Toxicity:	No data available.	Pas de données disponibles
Toxicité chronique:		
Target Organ Effects:	No data available.	Pas de données disponibles
Effets sur les organes cibles:		
Aspiration Hazard:	No data available.	Pas de données disponibles
Danger d'aspiration:		

12. Ecological information

Information écologique

(a) Ecotoxicity ***Écotoxicité***

Water hazard class 1(Self-assessment): slightly hazardous for water.
Classe de danger pour l'eau 1 (Auto-évaluation): légèrement dangereux pour l'eau.

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

No information available. Pas d'information disponible.

(c) Bioaccumulative potential ***Potentiel bioaccumulatif***

No information available. Pas d'information disponible.

(d) Mobility in soil ***Mobilité dans le sol***

No information available. Pas d'information disponible.

(e) Other adverse effects

No information available.

Autres effets indésirables

Pas d'information disponible.

13. Disposal considerations

Considérations relatives à l'élimination

Safe handling and methods of disposal

Manipulation et méthodes d'élimination sûres

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Local regulations may be more stringent than regional or national requirements.
Product disposal recommendation: Observe local, state and federal laws and regulations.
Packaging disposal recommendation: Be aware discardedcells may cause fire, tape the cell terminals to insulate them. Don't disassembly the cell. Completely discharge containers (no tear drops, no powder rest, scraped carefully). Containers may be recycled or re-used. Observe local, state and federal laws and regulations.
The potential effects on the environment and human health of the substances used incells and accumulators; the desirability of not disposing of wastecells and accumulators as unsorted municipal waste and of participating in their separate collection so as to facilitate treatment and recycling.

L'élimination doit être conforme aux lois et réglementations régionales, nationales et locales applicables.
Les réglementations locales peuvent être plus strictes que les exigences régionales ou nationales.
Recommandation concernant l'élimination des produits: Respectez les lois et réglementations locales, provinciales et fédérales.
Recommandation sur la mise au rebut de l'emballage: Sachez que les piles jetées peuvent provoquer un incendie, fixez-les avec du ruban adhésif pour les isoler. Ne démontez pas lacell. Déchargez complètement les récipients (pas de larmes, pas de poudre, soigneusement raclés). Les conteneurs peuvent être recyclés ou réutilisés. Respectez les lois et règlements locaux, provinciaux et fédéraux.
Les effets potentiels sur l'environnement et la santé humaine des substances utilisées dans les piles et les accumulateurs; l'opportunité de ne pas éliminer les déchets de piles et d'accumulateurs en tant que déchets municipaux non triés et de participer à leur collecte séparée afin de faciliter le traitement et le recyclage.

14. Transport information

Informations sur le transport

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents. All original packaging for alkaline batteries has been designed to be compliant with these regulatory concerns.

En général, toutes les batteries de tous les modes de transport (terrestre, aérien ou océanique) doivent être emballées de manière sûre et responsable. Les préoccupations réglementaires de toutes les agences pour un emballage sûr exigent que les piles soient emballées de manière à éviter les courts-circuits et à être contenues dans

un «emballage extérieur solide» qui empêche le déversement du contenu. Tous les emballages d'origine des piles alcalines ont été conçus pour être conformes à ces préoccupations réglementaires.

Alkaline batteries (sometimes referred to as “Dry cell” batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Good Regulations, IATA Dangerous Goods Regulations, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

Les piles alcalines (parfois appelées «piles sèches») ne sont pas répertoriées comme marchandises dangereuses en vertu de l'Accord européen ADR concernant le transport international des marchandises dangereuses par route, du Code maritime international des marchandises dangereuses IMDG, du Règlement sur les marchandises dangereuses de l'ONU, des marchandises dangereuses de l'IATA Réglementation, instructions techniques de l'OACI et réglementation américaine sur les matières dangereuses (49 CFR). Ces batteries ne sont pas soumises à la réglementation sur les marchandises dangereuses à condition qu'elles répondent aux exigences contenues dans les dispositions spéciales suivantes.

Regulatory Body Organisme de réglementation	Special Provisions Dispositions spéciales
ADR	Not regulated Non réglementé
IMDG	Not regulated Non réglementé
UN	Not regulated Non réglementé
US DOT	49 CFR 172.102 Provision 130
IATA	A123
ICAO	Not regulated Non réglementé

All alkaline batteries are packed in such a way to prevent short circuits or the generation dangerous quantities of heat and meet the special provisions listed above. In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words “not restricted” and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

Toutes les piles alcalines sont emballées de manière à éviter les courts-circuits ou la génération de quantités dangereuses de chaleur et répondent aux dispositions spéciales énumérées ci-dessus. De plus, le Règlement de l'IATA sur les marchandises dangereuses et les Instructions techniques de l'OACI exigent que les mots «sans restriction» et le numéro de disposition spéciale A123 soient indiqués sur la lettre de transport aérien, lorsqu'une lettre de transport aérien est émise.

15. Regulatory information

Informations réglementaires

OSHA hazard communication standard (29 CFR 1910.1200)

Norme de communication des dangers OSHA (29 CFR 1910.1200)

_____ ***Hazardous Dangereux*** _____V_____ ***Non-hazardous Non dangereux***

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

Autres informations, y compris date de préparation ou dernière révision

(a) Preparation and revision information

Informations de préparation et de révision

Date of previous revision: Not applicable.
Date de la révision précédente: Non applicable.

Date of this revision: 01/01/2020
Date de cette révision: 01/01/2020

Revision summary: The first New SDS
Résumé de la révision: La première nouvelle SDD

(b)Abbreviations and acronyms

Abréviations et acronymes

TSCA:	Toxic Substances Control Act, The American chemical inventory. Toxic Substances Control Act, inventaire américain des produits chimiques.
DSL	Domestic Substances List Liste intérieure des substances
EINECS:	European Inventory of Existing Commercial chemical Substances Inventaire européen des substances chimiques commerciales existantes
ENCS	Japanese Existing and New Chemical Substances Substances chimiques existantes et nouvelles du Japon
ECL:	Existing Chemicals List, the Korean chemical inventory. Liste des produits chimiques existants, inventaire coréen des produits chimiques.
IECSC:	Inventory of existing chemical substances in China. Inventaire des substances chimiques existantes en Chine.

(c) Disclaimer Avertissement

Because all of ourcells are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

Étant donné que toutes noscells sont définies comme des "articles", elles sont exemptées des exigences de la norme de communication des dangers. Les informations contenues dans cette fiche signalétique contiennent toutes les données pertinentes de manière complète et sincère. Toutefois, les informations sont fournies sans aucune garantie quant à leur étendue et leur exactitude absolues. Cette FDS a été préparée pour fournir des mesures de sécurité

préventives aux utilisateurs ayant reçu une formation professionnelle. L'utilisateur personnel qui a obtenu cette fiche de données de sécurité doit décider en toute indépendance de son applicabilité dans des conditions particulières. Dans ces cas particuliers, nous n'assumons aucune responsabilité pour les dommages.

---------- End of the SDS ----------

---------- Fin de la SDS ----------

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1Product Identifier

Name of Product: Rechargeable Lithium-ion Polymer Battery

1.2 Other means of identification

Product Models: 890-01775-B
Nominal Voltage: 7.66V
Nominal capacity: 2293mAh
Nominal Power: 17.57Wh
Weight: 89.2g

1.3 Recommended use of the chemical and restriction on use

Recommended Use: Rechargeable Li-ionBattery
Restriction on Use: No information available

1.4 Information Of Supplier:

Company Name: Huizhou Desay Battery Co.,LTD
Address: No.15 Zone, Zhong Kai Hi_Tech Development Zone, Huizhou, Guangdong, China
Zip code: 516006
Contact person: Guocheng Wei
Tel: 86-752-2629634
E-mail: desay_certification@desay.com

1.5 Emergency Telephone

86-0752-2629750

2. Hazard(s) Identification

2.1 Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

2.2 Label elements

2.2.1 Signal WordDanger

2.2.2 Hazard Statements

Causes skin irritation
Causes serious eye damage
Suspected of causing cancer
Causes damage to organs through prolonged or repeated exposure

2.2.3 Symbol

This product is an article which contains a chemical substance. Safety information is given for exposure to the article as solid. 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.

2.3 Precautionary Statements

2.3.1 Precautionary Statements – Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Wash face, hands and any exposed skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Keep away from flames and hot surface –no smoking.
Do not breathe dust/fume/gas/mist/vapors/spray.
Do not eat, drink or smoke when using this product.

2.3.2Precautionary Statements – Response

If exposed or connected: Get medical advice/attention.
Specific treatment (see supplemental first aid/instruction on this label).

Skin

If ON SKIN: wash with plenty of soap and water.
Take off contaminated clothing and water before reuse.
If skin irritation or rash occurs: get medical advice/attention if feel unwell.

Eye

If IN EYES: Rinse cautiously with water for several minutes, remove contact lenses, if present and easy to do, Continue rinsing. Call a POISON CENTER or doctor/physician.

Inhalation

If inhalation: if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or doctor/physician.

Ingestion

If swallowed: rinse mouth, do not induce vomiting, Call a poison center or doctor/physician if feel unwell.

2.3.3 Precautionary Statements – Storage

Store locked up

2.3.4 Precautionary Statements – Disposal

Dispose of contents/container to an approved waste disposal plant.

2.4 Hazards not otherwise classified (HNOC)

Not applicable

2.5 Unknown Toxicity

39% of the mixture consists of ingredient(s) of unknown toxicity.

2.6 Other information

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.7 Interactions with other chemicals

Use of alcoholic beverages may enhance toxic effect.

3. Composition/ Information on Ingredients

Chemical Name	CAS No.	Weigh%
Cobalt lithium dioxide	12190-79-3	28
Ethy1 propionate	105-37-3	15
Copper foil	7440-50-8	9
Aluminum foil	7429-90-5	10
Graphite	7782-42-5	16.2
Ethylene Carbonate	96-49-1	1.2
Propylene Carbonate	108-32-7	2.4
Lithium Hexafluorophosphate(1-)	21324-40-3	15
1,3-propanesultone	1120-71-4	0.2
Separator	9002-88-4	3

4. First Aid Measures

4.1 General Advice

First aid is upon rupture of sealed battery.

4.1.1 Eye contact

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. Do not rub affected area. Seek immediate medical attention/advice.

4.1.2 Skin Contact

Wash off immediately with plenty of water and soap for at least 15 minutes. Remove and isolate contaminated clothing and shoes. Get medical attention if irritation develops and persists.

4.1.3 Inhalation of Vented Gas

Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen.

4.1.4 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 or poison control center immediately.

4.1.5 Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved. Take precaution to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personnel protective equipment as required. Wear personnel protective clothing (see section8).

4.2 Most important symptoms and effects, both acute and delayed

Burning sensation, Itching. Rashes. Hives, Coughing.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization of susceptible persons. Treat symptomatically.

5. Fire – Fighting Measures

5.1 Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.Dry chemical, CO_2,water spray or regular foam. Move containers from fire area if you can do it without risk.

5.2 Unsuitable Extinguishing Media

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

5.3 Specific Hazards Arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Product is or contains a sensitizer.

Hazardous Combustion products

Carbon oxides

5.4 Explosion Data

Sensitivity to Mechanical Impact:None.
Sensitivity to Static Discharge: None.

5.5 Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/IOSH (approved or equivalent) and full protective gear.Move containers from fire area if you can do it without risk.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental Precautions

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

6.3 Methods for containment

Prevent further leakage or spillage if safe to do so.Absorb with earth, sand or othernon-combustible material and transfer to containers for later disposal.

6.4 Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. Handling and Storage

7.1 Precaution for safe handling

In case of rupture, use personal protection equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.

7.2 Conditions for safe storage, including any incompatibilities

Storage

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

Incompatible products

Strong acids.Strong oxidizing agent. Strong bases.

8. Exposure Controls/Personal Protection

8.1 Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Graphite 7782-42-5	TWA:2mg/m^3 respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m^3 total dust synthetic TWA: 5 mg/m^3respirable fraction synthetic (vacated) TWA: 2.5 mg/m^3respirable dust natural (vacated) TWA: 10 mg/m^3 total dust synthetic (vacated) TWA: 5 mg/m^3respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m^3 TWA: 2.5 mg/m^3 respirable dust
Lithium Cobalt Oxide 12190-79-3	TWA:0.02mg/m^3	-	-

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.

Other Exposure Guidelines:

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

8.2 Appropriate engineering controls

Engineering Measures:

Showers、 Eyewash stations、Ventilation systems

8.3 Individual protection measures, such as personal protective equipment

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

Eye /face protection:if splashes are likely to occur: Wear safety glasses with side shields(or goggles). None required for consumer use.

Skin protection: Wear protective gloves and protective clothing. Long sleeved clothing. Imperious gloves.

Hygiene Measure: 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. For environmental protection, remove and wash all contaminated protective equipment before re-use. No information available.

9. Physical and Chemical Properties

Physical State: Solid

Color: Black

Odor: Odorless

Odor Threshold: No information available

pH: No data available

Melting/freezing point: No data available

Boiling point/boiling range: No data available

Flash Point: No data available

Evaporation Rate: No data available

Flammability(Solid, gas): No data available

Flammability Limit in Air: No data available

Upper flammability limit: No data available

Lower flammability limit: No data available

Vapor pressure: No data available

Vapor density: No data available

Specific Gravity: No data available

Solubility: Insoluble in water

Partition coefficient: n-octanol/water: No data available

Autoignition temperature: No data available

Decomposition temperature: No data available

Kinematic viscosity: No data available

Dynamic viscosity: No data available

10. Stability and Reactivity

Reactivity:
No data available

Chemical stability:
Stable under recommended storage conditions.

Possibility of Hazardous Reactions:
None under normal processing.

Hazardous Polymerization:
Hazardous polymerization does not occur.

Conditions to avoid:
Do not subject battery to mechanical shock. Keep away from open flames, high temperature.

Incompatible materials:
Strong acids, Strong oxidizing agents. Strong bases.

Hazardous decomposition products:
Carbon oxides

11. Toxicological Information

11.1 Information on likely routes of exposure

Product information:
Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:

Inhalation:
Specific test data for the substance or mixture is not available. Corrosive by inhalation(base on components). Inhalation of corrosion fumes/gases may cause coughing, choking, headache, dizziness and weakness for several hour. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure and increased heart rate. Inhaled corrosion substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye Contact:
Specific test data for the substance or mixture is not available. Cause burns. (based on components). Corrosion to the eyes and may cause severe damage including blindness. Cause serious eye damage. May cause irreversible damage to eyes.

Skin Contact:
Specific test data for the substance or mixture is not available.Corrosion (based on components). Cause burns. Toxic in contact with skin.May be absorbed through the skin in harmful amounts.

Ingestion:

Specific test data for the substance or mixture is not available. Cause burns. (based on components). Ingestion cause burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite 7782-42-5	> 10000mg/kg (Rat)	-	-

11.2 Information on toxicological effects

Symptoms:

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

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

Sensitization: May cause sensitization of susceptible person, May cause sensitization by skin contact. May cause sensitization by inhalation.

Mutagenic Effects: No information available.

Carcinogenicity: the table below whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Lithium Cobalt Oxide12190-79-3	A3	Group 2B		X

ACGIH (American Conference of Governmental Industrial Hygienists)
A3- Animal Carcinogen
IARC (International Agency for research on Cancer)
Group 2B- Possibly Carcinogenic to humans
NTP (National Toxicology Program)Reasonably Anticipated- reasonably anticipated to be a human Carcinogenic.
OSHA(Occupational safety and Health Administration of the US Department of Labor)
X-Present

Reproductive Toxicity: No information available.

STOT- single exposure: No information available.

STOT- repeated exposure: Cause damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE)

Chronic Toxicity: Prolonged exposure may cause chronic effects. Repeated contact may cause

allergic reactions in very susceptible persons. Contain a known or suspected carcinogen. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system.May cause adverse liver effects.

Target Organ Effects: Respiratory system. Eyes.Skin. Gastrointestinal tract(GI). Blood. Central Nervous System(CNS). Kidney.Liver.Lungs.Nasal cavities.

Aspiration Hazard: No information available.

11.4 Numerical measures of toxicity product information

The following values are calculated based on chapter 3.1 of the GHS document.

ATE mix(oral):6513mg/kg

ATE mix(dermal): 5141mg/kg (ATE)

12. Ecological Information

Ecotoxicity :

Chemical name	Toxicity to Aglae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
-	-	-	-	-

Persistence and Degradability: No information available

Bioaccumulation: No information available

Other adverse effects: No information available

13. Disposal Considerations

13.1Waste treatment methods

Disposal methods:

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

Contaminated Packaging:

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

California Hazardous Waste Codes 141

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

Chemical Name	California Hazardous Waste

Lithium Cobalt Oxide 12190-79-3	Toxic

14. Transportation Information

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment",or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods"when shipped in accordance with "PI965-967 section II of IATA-DGR" or "special provision188 of IMO-IMDG Code"

DOT: NOT REGULATED

Proper Shipping Name: NON REGULATED

Emergency Response Guide Number: 147

Hazard Class: N/A

TDG: Not regulated

MEX: Not regulated

ICAO: Not regulated

IATA: Not regulated

Proper Shipping Name: Not regulated

Hazard Class: Not regulated

IMDG/IMO: Not regulated

Proper Shipping Name: NON REGULATED

Hazard Class: N/A

Ems No.: F-A,S-1

RID: Not regulated

ADR: Not regulated

AND: Not regulated

15. Regulatory information

15.1International Inventories

TSCA Complies
DSL All components are listed either on the DSL or NDSL.
TSCA – United State Toxic Substance Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substance List/Non-Domestic Substance List

15.2 US Federal Regulations

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

Chemical Name	CAS No.	Weight (%)	SARA313-Threshold values(%)
Lithium Cobalt Oxide	12190-79-3	15-40	0.1

15.3SARA 311/312Hazard Categories

Acute Health Hazard No
Chronic Health Hazard No
Fire Hazard No
Sudden release of pressure hazard No
Reactive Hazard No

15.4CWA (Clean Water Act)

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

15.5CERCLA

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

15.6 US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
-	Carcinogen

U.S State Right-to-Know Regulations

Chemical Name	NewJersey	Massachusetts	Pennsylvania	RhodeIsland	IIIinois
Graphite 7782-42-5	×	×	×		
Lithium Cobalt Oxide 12190-79-3	×	×	×	×	×

15.7 International Regulations

Mexico

National occupational exposure limits

Chemical Name	Carcinogen Status	Exposure Limits
Graphite		Mexico: TWA= 2 mg/m^3

Canada

WHMIS Hazard Class
Non-controlled

16. Other Information

Disclaimer:

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

Prepared By: Guangzhou MCM Certification and Testing Co., Ltd.

Issuing Date: Nov. 13, 2024

Revision Date: Nov. 13, 2024

--- End of SDS ---

SAFETY DATA SHEETS

In Accordance with OSHA Standard 1910.1200 App D (USA) Date: 01/01/2023

1. Identification

(a) Product identifier used on the label:

AA/LR6 / AM3/单 3 形 1.5V

(b) Other means of identification:

Alkaline

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

Do not throw in fire! Not rechargeable!

(d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Manufacturer: HANGZHOU POWERPACK BATTERY CO., LTD.

Address: 1307,Shipping Mansion Shangcheng District Hangzhou Zhejiang, China.

Tel / Fax: +86-571-87831186

(e) Emergency phone number.

Tel: +86-571-87831186

2. Hazard(s) identification

(a) Classification of the chemical in accordance with paragraph (d) of §1910.1200

Chemical power source

(b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200. (Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., flame, skull and crossbones)

N/A

(c) Describe any hazards not otherwise classified that have been identified during the classification process

The chemical materials concluded in the Product is sealed up, thus being stable, safe and eco-friendly under common conditions, may not cause physical / chemical hazards.

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(d) Where an ingredient with unknown acute toxicity is used in a mixture at a concentration ≥1% and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required

No such an ingredient is contained in the product.

3. Composition/information on ingredients

Except as provided for in paragraph (i) of §1910.1200 on trade secrets:

For Substances:

(a) Chemical name

(b) Common name and synonyms

(c) CAS number and other unique identifiers

(d) Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance

Chemical Name	CAS #	Content (approximate Wt %)
Manganese dioxide	1313-13-9	36.7 %
Carbon	7440-44-0	1.4 %
Graphite	7782-42-5	1.4 %
Zinc	7440-66-6	18 %
Potassium hydroxide	1310-58-3	8 %
Iron	7439-89-6	23 %
Brass (pin)	7440-50-8	1.4 %
Nylon (gasket)	32131-17-2	1.1 %
Water	7732-18-5	9%

For Mixtures

In addition to the information required for substances:

(a) The chemical name and concentration (exact percentage) or concentration ranges of all

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ingredients which are classified as health hazards in accordance with paragraph (d) of §1910.1200 and,

(1) Are present above their cut-off/concentration limits; or

(2) Present a health risk below the cut-off/concentration limits.

No such an ingredient is contained in the product.

(b) The concentration (exact percentage) shall be specified unless a trade secret claim is made in accordance with paragraph (i) of §1910.1200, when there is batch-to-batch variability in the production of a mixture, or for a group of substantially similar mixtures (See A.0.5.1.2) with similar chemical composition. In these cases, concentration ranges may be used.

No such a situation would happen during the production from batch to batch.

For All Chemicals Where a Trade Secret is claimed

Where a trade secret is claimed in accordance with paragraph (i) of §1910.1200, a statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

4. First-aid measures

(a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion

Inhalation: Not applicable.

Skin Contact: Wash with clean water immediately once leakage happens and the inner liquid splashes onto skin.

Eye contact: Rinse eyes immediately with running water for at least ten minutes. Consult an ophthalmologist.

Ingestion: Seek medical assistance or treatment immediately.

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

The liquid if leaked from the product may be smelly, mild irritant to skin, etc.

(c) Indication of immediate medical attention and special treatment needed, if necessary

Wash with clean water immediately.

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5. Fire-fighting measures

(a) Suitable (and unsuitable) extinguishing media.

Carbon dioxide (CO_2), foam, or dry chemical powder extinguishing media is suitable.

(b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).

The product is not inflammable; the liquid, if leaked from the product, may cause corrosion to paper, plastic, or any other tender material(s) near by.

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

The fire-fighters are suggested wearing full protective clothing and using self contained breathing apparatus.

6. Accidental release measures

(a) Personal precautions, protective equipment, and emergency procedures.

Wear protective clothing. Keep unprotected persons away.

(b) Methods and materials for containment and cleaning up.

Collect spilled material with an insert standard absorbent like sand or silica.
Care for well-Ventilated conditions. Recycle or dispose of the materials in an appropriate way.

7. Handling and storage

(a) Precautions for safe handling.

Obey the common known rules and precautions for handling with chemical power sources.

(b) Conditions for safe storage, including any incompatibilities.

Store product in clean, cool and ventilated place with a temperature between 10℃ and 30℃ (no higher than 40℃ in the ordinary course of events) and a relative humidity no higher than 65%; the storage time should not be too long; the batteries should be well-arranged, and do avoid sort-circuit caused by the contact of the positive and negative electrodes.

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8. Exposure controls/personal protection

(a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

N/A

(b) Appropriate engineering controls.

Do not disassemble the product without professional basis.

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

No special equipment is required for handling, carrying or using the product.
The chemical materials concluded in the Product is sealed up, thus being stable, safe and eco-friendly under common conditions.

9. Physical and chemical properties

(a) Appearance (physical state, color, etc.)	:	Cylindrical battery with PET label in white, blue, golden and black colours, etc.
(b) Odor	:	not applicable
(c) Odor threshold	:	not applicable
(d) pH	:	not applicable
(e) Melting point/ freezing point	:	not applicable
(f) Initial boiling point and boiling range	:	not applicable
(g) Flash point	:	not applicable
(h) Evaporation rate	:	not applicable
(i) Flammability (solid, gas)	:	not applicable
(j) Upper/lower flammability or explosive limits	:	not applicable

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(k) Vapor pressure	:	not applicable
(l) Vapor density	:	not applicable
(m) Relative density	:	not applicable
(n) Solubility(ies)	:	not applicable
(o) Partition coefficient: n-octanol/ water	:	not applicable
(p) Auto-ignition temperature	:	not applicable
(q) Decomposition temperature	:	not applicable
(r) Viscosity	:	not applicable

10. Stability and reactivity

(a) Reactivity

N/A

(b) Chemical stability

Stable.
The chemical materials concluded in the Product are sealed up, thus being stable, safe and eco-friendly under common conditions.

(c) Possibility of hazardous reactions

No.

(d) Conditions to avoid (e.g., static discharge, shock, or vibration)

Environmental temperature higher than 40℃, relative humidity below 45% or higher than 65% is recommended to be avoided for product storage or working.

(e) Incompatible materials

N/A

(f) Hazardous decomposition products

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No.

11. Toxicological information

Description of the various toxicological (health) effects and the available data used to identify those effects, including

(a) Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact)

The chemical materials concluded in the Product are sealed up, thus being stable, safe and eco-friendly under common conditions;
The liquid (alkaline solution), if leaked from the product, may cause corrosion to paper, plastic, or any other tender material(s) near by, but not toxicological.

(b) Symptoms related to the physical, chemical and toxicological characteristics

People might feel itching, if the inner liquid splashes onto skin.

(c) Delayed and immediate effects and also chronic effects from short- and long-term exposure

N/A

(d) Numerical measures of toxicity (such as acute toxicity estimates)

N/A

(e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA

No.

12. Ecological information (Non-mandatory)

(a) Ecotoxicity (aquatic and terrestrial, where available): N/A

(b) Persistence and degradability: N/A

(c) Bio-accumulative potential: N/A

(d) Mobility in soil: N/A

(e) Other adverse effects (such as hazardous to the ozone layer) : No.

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13. Disposal considerations (Non-mandatory)

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

The used product (waste) is recommended to be disposed-of in separate collection, so as to avoid improper disassembly or recycling method that may lead to pollution or corrosion caused by the alkaline solution inside it.

14. Transport information (Non-mandatory)

(a) UN number: N/A

(b) UN proper shipping name: N/A

(c) Transport hazard class(es) : N/A

(d) Packing group, if applicable: N/A

(e) Environmental hazards (e.g., Marine pollutant (Yes/No)) No.

(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

The product can be treated as ordinary goods in transportation;
Products in bulk shall be packed in inner packaging in such a manner that can prevent movement or short-circuit effectively.

(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Avoid high-temperature, high-humidity condition.

15. Regulatory information (Non-mandatory)

Safety, health and environmental regulations specific for the product in question

The product is eco-friendly and in accordance with the safety regulations in ANSI C18.1M_ Part2 Standard, and complying with the environmental requirements in EU Directives 2006/66/EC (Battery Directive).

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

The date of preparation of the SDS or the last change to it

This Safety Date Sheets (SDS) is issued on January 1st, 2023 as a third version according to requirements of the USA's OSHA Standard 1910.1200 App D.

For any other question, please contact the manufacturer for further information.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Name of Product: Rechargeable Lithium-ion polymer battery

1.2 Other means of identification

Product Models:890-02297-B
Nominal Voltage: 3.87V
Nominal capacity: 4879mAh
Nominal Power: 18.88Wh
Weight: 68.1g

1.3 Recommended use of the chemical and restriction on use

Recommended Use: Rechargeable Li-ion Battery
Restriction on Use: No information available

1.4 Information Of Supplier:

Company Name: Huizhou Desay Battery Co., Ltd.
Address: No.15 Zone, Zhongkai Hi-Tech Development Zone, Huizhou, Guangdong, China
Contact person: Guocheng Wei
Tel: 86-752-2629634
E-mail: desay_certification@desay.com

1.5 Emergency Telephone

86-0752-2629750

2. Hazard(s) Identification

2.1 Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

2.2 Label elements

2.2.1 Signal Word Danger

2.2.2 Hazard Statements

Causes skin irritation
Causes serious eye damage
Suspected of causing cancer
Causes damage to organs through prolonged or repeated exposure

2.2.3 Symbol

This product is an article which contains a chemical substance. Safety information is given for exposure to the article as solid. 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.

2.3 Precautionary Statements

2.3.1 Precautionary Statements – Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Wash face, hands and any exposed skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Keep away from flames and hot surface –no smoking.
Do not breath dust/fume/gas/mist/vapors/spray.
Do not eat, drink or smoke when using this product.

2.3.2 Precautionary Statements – Response

If exposed or connected: Get medical advice/attention.
Specific treatment(see supplemental first aid/instruction on this label).

Skin

If ON SKIN: wash with plenty of soap and water.
Take off contaminated clothing and water before reuse.
If skin irritation or rash occurs: get medical advice/attention if feel unwell.

Eye

If IN EYES: Rinse cautiously with water for several minutes, remove contact lenses, if present and easy to do, Continue rinsing. Call a POISON CENTER or doctor/physician.

Inhalation

If inhalation: if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or doctor/physician.

Ingestion

If swallowed: rinse mouth, do not induce vomiting ,Call a poison center or doctor/physician if feel unwell.

2.3.3 Precautionary Statements – Storage

Store locked up

2.3.4 Precautionary Statements – Disposal

Dispose of contents/container to an approved waste disposal plant.

2.4 Hazards not otherwise classified (HNOC)

Not applicable

2.5 Unknown Toxicity

40% of the mixture consists of ingredient(s) of unknown toxicity.

2.6 Other information

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.7 Interactions with other chemicals

No information available.

3. Composition/ Information on Ingredients

Chemical Name	CAS No.	Weigh%
Graphite	7782-42-5	25
Binder SBR	9003-55-8	2.5
Copper foil	7440-50-8	5.2
Lithium Cobalt Oxide	12190-79-3	27
Carbon	7440-44-0	0.8
Binder PVDF	24937-79-9	0.3
Al foil	7429-90-5	3.5
Lithium Hexafluorophosphate	21324-40-3	13.87
Propyl Propionate	106-36-5	8
Ethyl Propionate	105-37-3	6
Ethylene Carbonate	96-49-1	5.5
Propylene Carbonate	108-32-7	2.3
1,3-Propanesultone 1,3-	1120-71-4	0.03

4. First Aid Measures

4.1 General Advice

First aid is upon rupture of sealed battery.

4.1.1 Eye contact

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. Do not rub affected area. Seek immediate medical attention/advice.

4.1.2 Skin Contact

Wash off immediately with plenty of water and soap for at least 15 minutes. Remove and isolate contaminated clothing and shoes. Get medical attention if irritation develops and persists.

4.1.3 Inhalation of Vented Gas

Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration. If breathing is difficult, (trained personnel should) give oxygen.

4.1.4 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 or poison control center immediately.

4.1.5 Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved. Take precaution to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personnel protective equipment as required. Wear personnel protective clothing (see section 8).

4.2 Most important symptoms and effects, both acute and delayed

Burning sensation, Itching. Rashes. Hives, Coughing.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization of susceptible persons. Treat symptomatically.

5. Fire –Fighting Measures

5.1 Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO_2, water spray or regular foam. Move containers from fire area if you can do it without risk.

5.2 Unsuitable Extinguishing Media

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

5.3 Specific Hazards Arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Product is or contains a sensitizer.

Hazardous Combustion products

Carbon oxides

5.4 Explosion Data

Sensitivity to Mechanical Impact :None.
Sensitivity to Static Discharge: None.

5.5 Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/IOSH (approved or equivalent) and full protective gear. Move containers from fire area if you can do it without risk.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental Precautions

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into

soil/subsoil. Prevent product from entering drains.

6.3 Methods for containment

Prevent further leakage or spillage if safe to do so. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

6.4 Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. Handling and Storage

7.1 Precaution for safe handling

In case of rupture, use personal protection equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.

7.2 Conditions for safe storage, including any incompatibilities

Storage

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

Incompatible products

Strong acids. Strong oxidizing agent. Strong bases.

8. Exposure Controls/Personal Protection

8.1 Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Graphite 7782-42-5	TWA:2mg/m^3 respirable particulate matter 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
Lithium Cobalt Oxide 12190-79-3	TWA:0.02mg/m^3	-	-
Lithium Hexafluorophosphate 21324-40-3	TWA: 2.5 mg/m3 F	TWA: 2.5 mg/m^3 F TWA: 2.5 mg/m^3 dust (vacated) TWA: 2.5 mg/m^3	-

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.

Other Exposure Guidelines:

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

8.2 Appropriate engineering controls

Engineering Measures:
Showers、 Eyewash stations、Ventilation systems

8.3 Individual protection measures, such as personal protective equipment

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

Eye /face protection: if splashes are likely to occur: Wear safety glasses with side shields(or goggles). None required for consumer use.

Skin protection: Wear protective gloves and protective clothing. Long sleeved clothing. Imperious gloves.

Hygiene Measure: 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. For environmental protection, remove and wash all contaminated protective equipment before re-use. No information available.

9. Physical and Chemical Properties

Physical State: Solid

Color: Silver

Odor: Odorless

Odor Threshold: No information available

pH: No data available

Melting/freezing point: No data available

Boiling point/boiling range: No data available

Flash Point: No data available

Evaporation Rate: No data available

Flammability (Solid, gas): No data available

Flammability Limit in Air:

Upper flammability limit: No data available

Lower flammability limit: No data available

Vapor pressure: No data available

Vapor density: No data available

Specific Gravity: No data available

Solubility: Insoluble in water

Partition coefficient:n-octanol/water: No data available

Autoignition temperature: No data available

Decomposition temperature: No data available

Kinematic viscosity: No data available

Dynamic viscosity: No data available

10. Stability and Reactivity

Reactivity:
No data available

Chemical stability:
Stable under recommended storage conditions.

Possibility of Hazardous Reactions:
None under normal processing.

Hazardous Polymerization:
Hazardous polymerization does not occur.

Conditions to avoid:
Do not subject battery to mechanical shock. Keep away from open flames, high temperature.

Incompatible materials:
Strong acids, Strong oxidizing agents. Strong bases.

Hazardous decomposition products:
Carbon oxides

11. Toxicological Information

11.1 Information on likely routes of exposure

Product information:
Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:

Inhalation:
Specific test data for the substance or mixture is not available. Corrosive by inhalation (base on components). Inhalation of corrosion fumes/gases may cause coughing, choking, headache, dizziness and weakness for several hour. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure and increased heart rate. Inhaled corrosion substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye Contact:
Specific test data for the substance or mixture is not available. Cause burns. (based on components). Corrosion to the eyes and may cause severe damage including blindness. Cause

serious eye damage. May cause irreversible damage to eyes.

Skin Contact:
Specific test data for the substance or mixture is not available. Corrosion (based on components). Cause burns. Toxic in contact with skin. May be absorbed through the skin in harmful amounts.

Ingestion:
Specific test data for the substance or mixture is not available. Cause burns. (based on components). Ingestion cause burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite 7782-42-5	> 10000mg/kg (Rat)	-	-

11.2 Information on toxicological effects

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

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

Sensitization: May cause sensitization of susceptible person, May cause sensitization by skin contact. May cause sensitization by inhalation.

Mutagenic Effects: No information available.

Carcinogenicity: the table below whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Lithium Cobalt oxide 12190-79-3	A3	Group 2B		X

ACGIH (American Conference of Governmental Industrial Hygienists)
A3- Animal Carcinogen
IARC (International Agency for research on Cancer)
Group 2B- Possibly Carcinogenic to humans
NTP (National Toxicology Program) Reasonably Anticipated- reasonably anticipated to be a human Carcinogenic.
OSHA (Occupational safety and Health Administration of the US Department of Labor)
X-Present

Reproductive Toxicity: No information available.

STOT- single exposure: No information available.

STOT- repeated exposure: Cause damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE)

Chronic Toxicity: Prolonged exposure may cause chronic effects. Repeated contact may cause allergic reactions in very susceptible persons. Contain a known or suspected carcinogen. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Target Organ Effects: Respiratory system. Eyes. Skin. Gastrointestinal tract(GI). Blood. Central Nervous System(CNS). Kidney. Liver. Lungs. Nasal cavities.

Aspiration Hazard: No information available.

11.4 Numerical measures of toxicity product information

The following values are calculated based on chapter 3.1 of the GHS document.
ATE mix(oral): 5400 mg/kg

12. Ecological Information

Ecotoxicity:

Chemical name	Toxicity to Aglae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
-	-	-	-	-

Persistence and Degradability: No information available

Bioaccumulation: No information available

Other adverse effects: No information available

13. Disposal Considerations

13.1Waste treatment methods

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

Contaminated Packaging:

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

California Hazardous Waste Codes 141
This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Lithium Cobalt Oxide 12190-79-3	Toxic

14. Transportation Information

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with " PI965-967 section II of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOT: NOT REGULATED

Proper Shipping Name: NON REGULATED

Emergency Response Guide Number: 147

Hazard Class: N/A

TDG: Not regulated

MEX: Not regulated

ICAO: Not regulated

IATA: Not regulated

Proper Shipping Name: Not regulated

Hazard Class: Not regulated

IMDG/IMO: Not regulated

Proper Shipping Name: NON REGULATED

Hazard Class: N/A

Ems No.: F-A, S-1

RID: Not regulated

ADR: Not regulated

AND: Not regulated

15. Regulatory information

15.1International Inventories

TSCA Complies
DSL All components are listed either on the DSL or NDSL.
TSCA – United State Toxic Substance Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substance List/Non-Domestic Substance List

15.2 US Federal Regulations

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

Chemical Name	CAS No.	Weight (%)	SARA313-Threshold values(%)
Lithium Cobalt Oxide	12190-79-3	15-40	0.1

15.3 SARA 311/312Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

15.4 CWA (Clean Water Act)

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

15.5 CERCLA

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

15.6 US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
-	Carcinogen
-	-

U.S State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	IIlinois
Lithium Cobalt Oxide12190-79-3	×		×	×	×
Graphite 7782-42-5	×	×	×		

Lithium Hexafluorophosphate 21324-40-3	×				

15.7International Regulations

Mexico
National occupational exposure limits

Chemical Name	Carcinogen Status	Exposure Limits
Graphite		Mexico: TWA= 2 mg/m^3

Canada
WHMIS Hazard Class
Non-controlled

16. Other Information

Disclaimer:

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

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Issuing Date: May 26, 2023

Revision Date: May 26, 2023

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