

## Safety Data Sheet

The content and format of this SDS is accordant with 29 CFR 1910.1200 (OSHA standard)

### 1. Identification of the substance/preparation and of the company/undertaking

**.Product name :** RECHARGEABLE BATTERY

**.Product code:** LIR2032

**.Recommended use of the chemical and restrictions on use:** Providing power for electric torches. Do NOT use it in a way which may contaminate food or do harm to human health.

**.Manufacturer/Supplier:** SHENZHEN LISTAR CO., LTD.

**.Address:** 201-26, Qiao Dong Xin Cun West, Shen Sha Road, ShaTou Jiao, Yan RTian District, ShenZhen, China

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**.Further information obtainable from:** SHENZHEN LISTAR CO., LTD.

**.Information in case of emergency:**

Tel: +86-755-2730 8915

### 2. Hazards identification

**.GHS classification according to Annex II:**

Physical hazards	Health hazards	Environmental hazards
Explosives-not classified Flammable gases-not classified Flammable aerosols-not classified Gases under pressure- not classified Flammable liquids- not classified Flammable solids-not classified Self-reactive substances and mixtures-not classified Pyrophoric liquids-not classified Pyrophoric solids-not classified Self-heating substances and mixtures-not classified Substances and mixtures, which in contact with water, emit flammable gases-not classified Oxidizing liquids-not classified Oxidizing solids-not classified Organic peroxides-not classified Corrosive to metals-not classified	Acute toxicity (oral)- not classified Acute toxicity (dermal)-not classified Acute toxicity (inhalation)-not classified Skin corrosion/irritation- not classified Serious eye damage/eye irritation -not classified Respiratory sensitizer-not classified Skin sensitizer-not classified Germ cell mutagenicity- not classified Carcinogenicity-not classified Toxic to reproduction- not classified Effects on or via lactation-not classified STOT SE-not classified STOT RE-not classified Aspiration hazard- not classified	Acute hazards to the aquatic environment-not classified Chronic hazards to the aquatic environment-not classified

**.Signal word:** Not applicable

**.Symbol :** Not applicable

**.Hazard Statement:** Not applicable

**Note:** *This product is generally not hazardous under normal conditions. It is not classified as a hazardous product according to GHS classification. The information below is given to minimize any possible hazard during handling, storage and disposal.*

**.Prevention Precautionary Statements:**

No special requirement.

**.Response Precautionary Statements:**

No special requirement.

**.Storage precautionary statements :**

No special requirement.

**.Disposal precautionary statements :**

P501: Dispose of contents/container to relevant local and national regulations.

### 3. Composition/information on ingredients

**Product description:** substance (); preparation/mixture ( ✓ )

Ingredient (s)	CAS	EINECS	% by weight
Steel	--	--	37%
Lithium cobaltite	12190-79-3	235-362-0	29%
Organic solvents	--	--	13%
Polypropylene	9003-07-0	--	10%
Carbon	7782-42-5	231-955-3	6%
Copper	7440-50-8	231-159-6	2%
Aluminum	7429-90-5	231-072-3	2%
Salts	--	--	1%

#### 4 First aid measures

**Persons using this product should consult a physician or other medical professional if an accident involving this product in injury. Specific first-aid measures are as follows:**

- .Eyes Contact:** No special measures as there is no hazard for normal contact.
- .Skin Contact:** Not applicable for finished product.
- .Inhalation:** No special measures as there is no hazard for normal contact. Concentrated powder or dust from processing may cause unpleasant obstruction in the nasal passages. Remove to fresh air.
- .Ingestion:** Do not induce vomiting without professional instruction. Get medical attention immediately.
- .Acute effect and delayed effect:** Acute effect: Not found. Delayed effect: Not found.
- .Personal protective equipment:** Recommend wearing protective gloves for industrial hygienic purpose. (e.g. Rubber gloves).

#### 5. Fire-fighting measures

- .Extinguishing Media:** This product is not flammable. As for surrounding fire, use dry chemical powder for small fire; Water spray, or alcohol resistant foam for large fire. Don't use water jet.
- .Special Fire Fighting Procedures:** Structural firefighters must wear self-contained breathing Apparatus and full protective equipment.
- .Unusual Fire and Explosion Hazards:** If involved in a fire, these products may ignite or decompose. Products of thermal decomposition can include produce toxic gases (e.g .carbon oxides, lithium oxides).
- .Explosion Sensitivity to Mechanical Impact:** Not applicable.
- .Explosion Sensitivity to Static Discharge:** Not applicable.

#### 6. Accidental release measures

- .Personal precautions:** Use proper personal protective equipment as indicated in Section 8.
- .Measures for Cleaning/Collection:**
  - If this battery ruptures, do not touch the battery directly.
  - Wear protective gloves and sweep up leakage carefully.
  - Label the waste containers and dispose it in a proper way.
- .Environmental Precautions:** Keep collected waste out of municipal sewers and open bodies of water. Comply with local and national laws and regulations.

#### **.Additional Information:**

- As for safe handling and storage, see Section 7.
- As for personal protection, see section 8.
- As for waste disposal, see section 13.

#### 7. Handling and storage

**The regulations relating to storage remises apply to workshop where the product is handled :**

- .Handling:**
  - Do not breathe vapors or fumes that may be evolved during processing.

Do not disassemble or burn batteries.

Do not squeeze or pierce batteries.

Do not put batteries into water.

Workers must wear proper protective equipments and must operate strictly according to relative rules.

**.Information about fire- and explosion protection:**

Keep ignition sources away-Do not smoke.

**.Storage:**

**.Requirements to be met by storerooms and receptacles:**

Do not store near flame or incompatible materials.

Keep battery terminals insulated when in storage or transportation. The temperature in the storeroom must be controlled in a proper range.

Avoid long-time direct contact of sunlight.

**.Information about storage in one common storage facility:** Not required.

**.Further information about storage condition:** None.

**8. Exposure controls/personal protection**

Ingredients	OSHA PEL-TWA	ACGIH TLV-TWA
Aluminum CAS: 7429-90-5	4 mg/m <sup>3</sup> (respirable dust)	No data
Carbon CAS : 7782-42-5	15mg/m <sup>3</sup> (total dust)	2mg/m <sup>3</sup>
Copper CAS : 7440-50-8	1.0mg/m <sup>3</sup> (dust)	1.0mg/m <sup>3</sup> (dust)

**.Engineering Controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**.Personal Protective Equipments:**

**.Protection of Hands:**

Recommend wearing protective gloves for industrial hygienic purpose.



**.Protection of Eyes:**

No special requirements under normal conditions. Wear safety glasses when working in a dusty environment



**.Respiratory Protection:** No special requirements under normal conditions.

**.Protection of Body:**

Recommend wearing uniforms.

**.General protective and hygienic measures:**

Wash hands before breaks and at the end of work.  
Prevent dust or fragment from processing entering eyes.

## 9. Physical and chemical properties

General Information	
Form	Solid
Color	The shell is yellow
Odor	Odorless
Boiling Range	Not available
Melting point/Melting range	Not available
Flash point	Not applicable
Self-igniting	Not available
Flammable/Explosive Limits-Lower Vol %	Not available
Flammable/Explosive Limits-Upper Vol %	Not available
Density	Not available
Relative Vapor density	Not applicable
Vapor pressure	Not available
Solubility in/Miscibility with Water	Insoluble in water
PH-Value (Saturated solution)	Not available
Viscosity (@25°C)	Not applicable

## 10. Stability and reactivity

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

**.Decomposition Products:** Products of thermal decomposition can include produce toxic gases (e.g. carbon oxides, lithium oxides).

**.Materials with which substance is incompatible:** Avoid contact of strong oxidizing agent, acids, alkalis and halogens if batteries rupture.

**.Hazardous Polymerizations:** Will not occur.

**.Conditions to Avoid:** Avoid exposure or contact to extreme temperatures and combustible materials.

## 11. Toxicological information

**.Product Toxicity Data:** The toxicity data of this product has not been determined, but to our best knowledge, this product is minimally toxic. Shown below is the toxicity data of some ingredients.

Component	CAS	LD50
Lithium cobaltite	12190-79-3	> 1,800mg/kg (Intraperitoneal, mouse)
Carbon	7782-42-5	> 4,320mg/kg (Oral, rat)

**.Inhalation:** Under normal conditions of use and handling, no inhalation hazard is present. But like any sealed container, battery may rupture when exposed to excessive heat and this could result in the release of flammable or corrosive materials

which may cause irritation to respiratory tract.

**.Ingestion:** It may cause constipation and irritation to stomach if it is swallowed accidentally.

**.Contact with Skin or Eyes:** If heated sufficiently to cause decomposition or rupture, fumes or spilled chemical substances can be irritating to skin or eyes. A short circuit may cause electrothermal damage to skin.

**.Effects of Overexposure - Acute:** There is no health hazard anticipated to occur during routine use of this product.

**.Effects of Overexposure - Chronic:** Not found.

**.Sensitivity:** The leakage from rupture may cause skin sensitization.

**.Teratogenicity:** Not found.

**.Mutagenicity:** Not found.

## 12. Ecological information

**.Ecotoxicity:** No relevant data.

**.Persistence and Degradability:** No relevant data.

**.Bioaccumulative Potential:** Not found.

**.Mobility in Soil:** No relevant data.

**.Notes:**

Do not allow product to reach ground water, water course or sewage system.

## 13. Disposal considerations

Do not allow product to reach sewage system.

Do not throw it into any open bodies of water.

Waste recycling must be operated strictly according to relevant regulations.

## 14. Transport Information

Provisions for the international transportation (pursuant to ICAO-TI/IATA-DGR, IMDG Code, ADR, RID, DOT)

This battery must be subject to:

Area	Method	Organization	Special Provision
International	Air	IATA, ICAO	Packing Instruction 966-Section II (regulated under the current 2013-2014 Edition of the ICAO Technical Instruction for the Safe Transport of Dangerous Goods by Air and the 54 <sup>th</sup> Edition of IATA DGR) IMP: ELI Passenger aircraft: ≤5kg All-cargo aircraft: ≤5kg A181
Europe	Road and Rail	ADR/RID	SP 188
International	Marine	IMDG	SP 188
U.S.A	Rail, Road, Marine	DOT	DOT 49 CFR 173.185

**.Proper Shipping Name:** Lithium Ion Batteries Contained in Equipment (including lithium ion polymer batteries)

**.UN Number:** UN3481

UN 3481 for Lithium Ion Batteries Contained in Equipment (including lithium ion polymer batteries) or Lithium ion Batteries Packed With Equipment (including Lithium ion polymer batteries).

**.Hazard Classification:** Class 9

**We further hereby certify that each cell or battery is of the type proven to meet the requirement of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3.**

**.Note:**

*Check whether the package is completed or sealed before transporting; make sure there are no damage and no falling down of packages during transporting; the transport vehicle should be equipped with fire-fighting equipments and emergency facilities for handling with release; do NOT transport this product together with incompatible substances.*

## **15. Regulatory information**

**.US Laws and Regulations:**

**.TSCA (Toxic Substance Control Act):** Lithium cobaltite CAS: 12190-79-3, Polypropylene CAS: 9003-07-0, Carbon CAS: 7782-42-5, Copper CAS: 7440-50-8 and Aluminum CAS: 7429-90-5 are in the U.S. Toxic Substances Control Act Chemical Substance Inventory List.

**.Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**. 67/548/EEC Annex III & Annex IV:** Not applicable

**.Clean Water Act:**

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**.SARA 313:** This product does not contain SARA 313 Toxic Release Chemicals.

**.Carcinogenicity categories:** Not listed by EPA, IARC and NTP.

**.Other laws and regulations:**

**. 67/548/EEC Annex III & Annex IV:** Not listed

**.Candidate List of Substances of very high concern (SVHC) according to ECHA:** Not listed.

**.REACH Regulation Annex XVII Regulation List:** Not listed.

**.REACH Regulation Annex XIV Authorization List:** Not listed.

## **16. Other information**

**DISCLAIMER:** This information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other material. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

### **References:**

GHS Annex II  
GHS SDS Instruction  
ANSI Z400.1/Z129.1-2010  
OSHA Hazard Communication Standard (HCS) 2012

### **Full description of some acronyms:**

**GHS-Globally Harmonized System of Classification and Labelling of Chemicals**  
**CAS-Chemical Abstracts Service**  
**EINECS-European Inventory of Existing Commercial Chemical Substances**  
**IMO-International Maritime Organization**  
**IMDG-International Maritime Dangerous Goods**  
**IATA-International Air Transport Association**  
**ICAO-International Civil Aviation Organization**  
**TSCA-Toxic Substance Control Act**  
**OSHA-Occupational Safety and Health Administration**  
**ACGIH- American Conference of Governmental Industrial Hygienists**

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\*\*\*\*\*The End\*\*\*\*\*