

# SAFETY DATA SHEET

Date of issue 01-01-2024

Canada/English

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

### Product identifier

Product Name Rechargeable Li-ion Battery ES 18650

Rating 11.1V, 1800mAh,19.98Wh

### Other means of identification

### Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

### Details of the supplier of the safety data sheet

Initial supplier identifier Foshan Estar Battery Co, Ltd

Address 201, Wangshi Lamp Park (Assembly Plant 2nd), North Part of Shishan Technology Industrial Park, Nanhai, Foshan, Guangdong, China

Telephone +86-757-86327896

E-mail aping@estar-battery.com

### Emergency telephone number

Company Emergency Phone Number +86-757-86327896

## 2. HAZARDS IDENTIFICATION

### Classification

This is a battery. In case of rupture:

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

### GHS Label elements, including precautionary statements

#### Danger

#### Hazard statements

This is a battery. In case of rupture:.

Causes skin irritation  
Causes serious eye irritation  
Suspected of causing cancer

---

Causes damage to organs through prolonged or repeated exposure



**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Wash face, hands and any exposed skin thoroughly after handling  
Do not breathe dust/fume/gas/mist/vapors/spray  
Do not eat, drink or smoke when using this product

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
Specific treatment (see supplemental first aid instructions on this label)

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

**Skin**

IF ON SKIN: Wash with plenty of water and soap  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing and wash it before reuse

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other information**

Very toxic to aquatic life with long lasting effects

**Unknown acute toxicity** 30.9 % of the mixture consists of ingredient(s) of unknown toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance**

Not applicable.

**Mixture**

---

Chemical name	CAS-No	Percent (%)	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Lithium Cobalt Oxide	12190-79-3	15	-	-
Graphite	7782-42-5	30	-	-
Phosphate(1-)hexafluoro-, lithium	21324-40-3	30	-	-
Copper	7440-50-8	13	-	-
Aluminium	7429-90-5	7	-	-
Nickel	7440-02-0	5	-	-

## 4. FIRST AID MEASURES

### First aid measures

<b>General advice</b>	First aid is upon rupture of sealed battery. IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	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.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

### Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Burning sensation.
-----------------	--------------------

### Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	Treat symptomatically.
---------------------------	------------------------

## 5. FIRE-FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	CAUTION: Use of water spray when fighting fire may be inefficient.
<b>Specific hazards arising from the chemical</b>	No information available.
<b>Hazardous Combustion Products</b>	Carbon oxides.
<b>Explosion Data</b>	
<b>Sensitivity to Mechanical Impact</b>	None.
<b>Sensitivity to Static Discharge</b>	None.
<b>Special protective equipment for</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

---

**fire-fighters** Use personal protection equipment.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

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

**Other Information** Refer to protective measures listed in Sections 7 and 8.

### Environmental precautions

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

### Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

### Conditions for safe storage, including any incompatibilities

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

**Exposure Limits** The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Aluminum 7429-90-5	TWA: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 1.0 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>
Copper 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>

**Other Exposure Guidelines** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

### Appropriate engineering controls

---



---

**Particle Size** No information available  
**Particle Size Distribution** No information available

## 10. STABILITY AND REACTIVITY

**Reactivity** No information available.  
**Chemical stability** Stable under normal conditions.  
**Possibility of Hazardous Reactions** None under normal processing.  
**Hazardous Polymerization** Hazardous polymerization does not occur.  
**Conditions to avoid** None known based on information supplied.  
**Incompatible materials** Strong acids. Strong bases. Strong oxidizing agents.  
**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

### 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. May cause irritation of respiratory tract.

**Eye contact** Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). Irritating to eyes.

**Skin contact** Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

**Ingestion** Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

### Information on toxicological effects

**Symptoms** Redness. May cause redness and tearing of the eyes.

### Numerical measures of toxicity

#### Acute Toxicity

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

**ATEmix (oral)** 12,452.00 mg/kg  
**ATEmix (dermal)** 9,132.00 mg/kg

**Unknown acute toxicity** 30.9 % of the mixture consists of ingredient(s) of unknown toxicity  
30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity  
30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity  
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)  
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)  
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

---

---

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

- Skin corrosion/irritation** Classification based on data available for ingredients. Irritating to skin.
- Serious eye damage/eye irritation** Classification based on data available for ingredients. Irritating to eyes.
- Respiratory or skin sensitization** No information available.
- Germ cell mutagenicity** No information available.
- Carcinogenicity** Classification based on data available for ingredients. Contains a known or suspected carcinogen.

**Legend**

**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 Carcinogen

**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** Causes damage to organs through prolonged or repeated exposure.
- Aspiration hazard** No information available.

**12. ECOLOGICAL INFORMATION**

- Ecotoxicity** Very toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio)	-	48h EC50: = 0.03 mg/L

- Persistence and Degradability** No information available.
-

---

**Bioaccumulation**

**Mobility** No information available.

**Other adverse effects** No information available.

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**14. TRANSPORT INFORMATION**

**Note:** 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 "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

**TDG** Not regulated

**DOT** NOT REGULATED  
**Proper Shipping Name** NON-REGULATED  
**Hazard Class** N/A  
**Emergency Response Guide Number** 147

**MEX** Not regulated

**ICAO** Not regulated

**IATA** Regulated  
**Proper Shipping Name** Lithium ion batteries or Lithium ion batteries packed with equipment or Lithium ion batteries contained in equipment  
**Hazard Class** Class 9

**IMDG/IMO** Lithium ion batteries or Lithium ion batteries packed with equipment or Lithium ion batteries contained in equipment  
**Hazard Class** N/A  
**EmS-No.** F-A, S-I

**RID** Not regulated

**ADR** Not regulated

---

---

**ADN** Not regulated

## 15. REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### International Regulations

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

#### International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

#### Legend

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

## 16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

<b>NFPA</b>	<b>Health hazards</b> 1	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Physical and Chemical Properties</b> -
<b>HMIS</b>	<b>Health hazards</b> 0	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal Protection</b> X

**Prepared By** Guangzhou CPUP Certification Technology Service Co., Ltd.

**Issuing Date** 01-01-2024

**Revision Note** No information available

#### **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 a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**

Inhalation Statement	dust
Not Hazardous	This is a battery. In case of rupture:
Hazard statements	Causes damage to organs through prolonged or repeated exposure
Signal word	Danger

---

Precautionary Statements

P302 + P352 - IF ON SKIN: Wash with plenty of water and soap P321 - Specific treatment (see supplemental first aid instructions on this label) P332 + P313 - If skin irritation occurs: Get medical advice/attention P362 + P364 - Take off contaminated clothing and wash it before reuse P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/attention P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face protection P308 + P313 - IF exposed or concerned: Get medical advice/attention P405 - Store locked up P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P314 - Get medical advice/attention if you feel unwell P501 - Dispose of contents/ container to an approved waste disposal plant

Signal word  
Skin corrosion/irritation  
Hazard statements  
Signal word  
Serious eye damage/eye irritation  
Hazard statements  
Signal word  
Carcinogenicity  
Hazard statements  
Signal word  
Specific target organ toxicity (repeated exposure)  
Skin corrosion/irritation  
Serious eye damage/eye irritation  
Carcinogenicity  
STOT - repeated exposure  
STOT - repeated exposure

Danger  
Category 2  
Causes skin irritation  
Warning  
Category 2A  
Causes serious eye irritation  
Warning  
Category 2  
Suspected of causing cancer  
Warning  
Category 1  
  
- (H315)  
- (H319)  
- (H351)  
- (H372)



Graphic



Graphic



Graphic



Hazard statements

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

Hazard statements

H315 - Causes skin irritation H319 - Causes serious eye irritation H351 - Suspected of causing cancer H351 - Suspected of causing cancer H372 - Causes damage to organs through prolonged or repeated exposure H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements - EU (§28, 1272/2008)

P103 - Read label before use P280 - Wear face protection P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish P234 - Keep only in original container P303 - IF ON SKIN (or hair):

Precautionary Statements	IF ON SKIN: Wash with plenty of water and soap IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention If skin irritation occurs: Get medical advice/attention Take off contaminated clothing And wash it before reuse Take off contaminated clothing and wash it before reuse Take off contaminated clothing And wash it before reuse Take off contaminated clothing and wash it before reuse IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention If eye irritation persists: Get medical advice/attention Obtain special instructions before use Obtain special instructions before use Do not handle until all safety precautions have been read and understood Do not handle until all safety precautions have been read and understood Wear protective gloves Wear protective gloves IF exposed or concerned: Get medical advice/attention IF exposed or concerned: Get medical advice/attention Store locked up Do not breathe dust/fume/gas/mist/vapors/spray Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product Do not eat, drink or smoke when using this product Get medical advice/attention if you feel unwell Get medical advice/attention if you feel unwell
Skin	IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse
Precautionary Statements	P302 + P352 - IF ON SKIN: Wash with plenty of water and soap P321 - Specific treatment (see supplemental first aid instructions on this label) P332 + P313 - If skin irritation occurs: Get medical advice/attention P362 + P364 - Take off contaminated clothing and wash it before reuse P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/attention P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face protection P308 + P313 - IF exposed or concerned: Get medical advice/attention P405 - Store locked up P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P314 - Get medical advice/attention if you feel unwell P501 - Dispose of contents/ container to an approved waste disposal plant
Precautionary Statements - Prevention	Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wear protective gloves/protective clothing/eye protection/face protection Wash face, hands and any exposed skin thoroughly after handling Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product
Precautionary Statements - Response	IF exposed or concerned: Get medical advice/attention Specific treatment (see supplemental first aid instructions on this label)
Eyes	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention
Skin	IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse
Precautionary Statements - Storage	Store locked up
Precautionary Statements - Disposal	Dispose of contents/container to an approved waste disposal plant
The following values are calculated based on chapter 3.1 of the GHS document	
ATEmix (oral)	12,452.00
Units	mg/kg
ATEmix (dermal)	9,132.00
Units	mg/kg
Contains Carbon black, Phosphate(1-), hexafluoro-, lithium	
Unknown acute toxicity	90.77 % of the mixture consists of component(s) of unknown hazards to the aquatic environment
Unknown Acute Aquatic Toxicity	90.77
Unknown Chronic Aquatic Toxicity	90.77
Product ATE Oral Status	1
Product ATE Dermal Status	1
Product ATE Inhalation - Gas Status	1
Product ATE Inhalation - Vapor Status	1
Product ATE Inhalation - Dust/Mist Status	1
Product Skin Corrosion Status	1
Product Eye Damage Status	1
Product Respiratory Sens. Status	1
Product Skin Sensitization Status	1
Product Mutagenic Status	1
Product Carcinogenic Status	1
Product Reproductive Toxicity Status	1
Product STOT Single Status	1
Product STOT Repeated Status	1
Product Aquatic Toxicity Status	1
Product Aspiration Toxicity Status	1
Product Ozone Status	1

---

Product and Component Overall	1
Classification Status	
STOT - repeated exposure	- (H372)
<b>Unknown acute toxicity</b>	30.9 % of the mixture consists of ingredient(s) of unknown toxicity
	30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
	30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
	30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
	30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
	30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
Symbols/Pictograms	
Symbols/Pictograms	
Other hazards	Very toxic to aquatic life with long lasting effects
Health hazards	Skull and Crossbones
Health hazards	Exclamation mark
Inhalation Statement	dust
Health hazards	1

---