

# Safety Data Sheets (SDSs)

## **SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

### **Product Identifier**

Product name: Rechargeable Li-ion Battery

Model/Type: ICR18650-2.6Ah-3.6V-1S1P 2600mAh 3.6V 9.36Wh

### **Other means of identification**

Synonyms: none

### **Relevant identified use of Product and uses advised against**

Recommended Use: electronic product

Uses advised against: Don't disassemble, impact, crush, put into fire or water, don't use above 60 °C!

### **Details of the Supplier of the safety data sheet:**

Name: ZHUHAI GREAT POWER ENERGY CO., LTD.

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Telephone: 0756-6333555 Fax: -

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### **Emergency telephone number**

Company Emergency Phone Number: 0756-6333555



## **SECTION 2: HAZARDS IDENTIFICATION**

### **Emergency Overview:**

May explode in a fire, which could release irritant gas.

### **Skin contact:**

No known significant effects or critical hazards under normal use. Contact with damaged batteries may cause burns.

### **Eye contact:**

No known significant effects or critical hazards under normal use. Contact with damaged batteries may cause burns.

### **Inhalation:**

Inhalation of vapors or fumes released due to heat or a large number of leaking batteries may cause respiratory and eye irritation.

**Ingestion:**

Ingestion of product contents may cause mouth, throat and intestinal burns and damage.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****Chemical characterization:** Mixtures

**Description:** Chemical power supply based on nonaqueous electrolyte. Composed by positive electrode, negative electrode, diaphragm, electrolyte and shell.

Hazardous ingredients:

Common Chemical Name	Chemical Formula	Concentration (%)	CAS No.
Lithium Cobalt Oxide	LiCoO <sub>2</sub>	48	12190-79-3
Graphite	C	21.2	7782-42-5
Ethylene carbonate	C <sub>3</sub> H <sub>4</sub> O <sub>3</sub>	4.71	96-49-1
Ethyl methyl carbonate	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>	0.785	623-53-0
Diethyl carbonate	C <sub>5</sub> H <sub>10</sub> O <sub>3</sub>	6.28	105-58-8
Propylene carbonate	C <sub>4</sub> H <sub>6</sub> O <sub>3</sub>	2.355	108-32-7
Lithium hexafluorophosphate(1-)	LiPF <sub>6</sub>	1.57	21324-40-3
Polypropylene	C <sub>3</sub> H <sub>6</sub>	0.8	9003-07-0
Copper	Cu	8.7	7440-50-8
Aluminum	Al	5.6	7429-90-5

Note: N/A=Not apply.

**SECTION 4: FIRST-AID MEASURES****First aid measures**

**Eye Contact:** Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

**Skin Contact:** Remove contaminated clothing and shoes. Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

**Inhalation:** Move to fresh air. If symptoms persist, call a physician.

**Ingestion:** Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Swallowing: Do not induce vomiting. Get medical attention.

**Most Important Symptoms/Effects**

No information available.

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

Inform physician. Treat symptomatically.

**SECTION 5: FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical powder, wet sand, plenty of water (for cooling).

Unsuitable Extinguishing Media: No information available.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. For example: Wear self-contained respiratory protective device. Wear suitable protective clothing and eye/face protection.

**Special hazards arising from the substance or mixture:**

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature (>150°C), When damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

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

Personal Precautions Avoid contact with eyes.

Refer to section 8 for personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas.

**Environmental precautions**

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

**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 Use personal protective equipment. Dam up. Cover liquid spill with sand, earth or other Non-combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

**SECTION 7: HANDLING AND STORAGE**

**Precautions for safe handling**

Keep away from ignition sources, heat and flame. Such batteries must be packed in inner

packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short circuits. Avoid mechanical or electrical abuse.

More than a momentary short circuit will generally reduce the battery service life. Avoid reversing battery polarity within the battery assembly. In case of a battery unintentionally be crushed, rubber gloves must be used to handle all battery components. Avoid contact with eyes, skin. Avoid inhalation. No smoking at working site. Materials to Avoid: Strong oxidizing agents , Corrosives.

**Conditions for safe storage, including any incompatibilities**

Store in a cool, well-ventilated area. Keep away from ignition sources, heat and flame. Such batteries must be packed in inner packages in such a manner as to effectively prevent short circuits and to prevent movement which could lead to short-circuits. Materials to Avoid: Strong oxidizing agents, Corrosives.



**SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Engineering Controls:**

Use ventilation equipment if available. Safety shower and eye bath.

**Personal Protective Equipment:**

Respiratory System: Not necessary under conditions of normal use.

Eyes: Not necessary under conditions of normal use.

Clothing: Wear appropriate protective clothing.

Hand: Safety gloves.

**Other Protect:**

No smoking, drinking and eating at working site. Wash thoroughly after handling.

**SECTION 9: Physical and chemical properties**

PhysicalState	Form: Cylinder
	Odour:Odourless
	Odor Threshold: No information available
Change in condition:	
pH, with indication of the concentration	Not determined.
Melting point/freezing point	Not determined.
Initial boiling point and Boiling range:	Not determined.
Flash Point	Not determined.
Flammability (solid, gas)	Not determined.
Upper/lower flammability or explosive limits	Not determined.

Auto-ignition temperature	Product is not self-igniting.
Decomposition temperature	Not determined.
Other Information	No further relevant information available.

### **SECTION 10: STABILITY AND REACTIVITY**

**Reactivity:** Stable under recommended storage and handling conditions (see section 7).

**Chemical stability:** Stable under normal conditions of use, storage and transport.

**Thermal decomposition/conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of Hazardous Reactions:** None under normal processing.

**Hazardous Polymerization:** Hazardous polymerization does not occur.

**Conditions to avoid:** Strong heating, fire, Incompatible materials.

**Incompatible materials:** Strong oxidizing agents. Strong acids.

**Hazardous Decomposition Products:** Carbon oxides, other irritating and toxic gases.



### **SECTION 11: TOXICOLOGICAL INFORMATION**

**Acute toxicity:** No data available.

**Skin corrosion/irritation:** No irritant effect.

**Serious eye damage/irritation:** Cause serious eye irritation.

**Respiratory or skin sensitization:** No sensitizing effects known.

**Specific target organ system toxicity:** No information available.

*Note: The internal battery materials may cause irritation to eyes and skin.*

### **SECTION 12: ECOLOGICAL INFORMATION**

**Toxicity:** No further relevant information available.

**Persistence and degradability:** No further relevant information available.

**Bioaccumulative potential:** No further relevant information available.

**Mobility in soil:** No further relevant information available.

**Results of PBT and vPvB assessment:**

PBT: Not applicable.

vPvB: Not applicable.

**Other adverse effects:** No information available.

### **SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

Recommendation: Lithium batteries are best disposed of as a non-hazardous waste when fully or mostly discharged. Contact a licensed professional waste disposal service to dispose of large

quantities materials.

**Other disposal recommendations**

Recommendation: Disposal must be made according to official regulations.

**SECTION 14: TRANSPORT INFORMATION**

The battery has passed the test items of UN Manual of Test and Criteria Section 38.3.

**General packaging requirement**

- 1.The cells or batteries must be protected so as to prevent short circuits.
- 2.The cells or batteries or equipment must be packed in suitable strong outer packaging.
- 3.If batteries contained in equipment, equipment must be secured against movement within the outer packaging and be packed so as to prevent accidental activation.

Remark:PSN=Proper Shipping Name	
Air transportation,according to IATA-DGR 65 <sup>th</sup> Edition	
UN Number+PSN	UN 3480 lithium ion batteries
Hazard Class	Class 9
Packaging requirement	PACKING INSTRUCTION 965,section IB
UN Number+PSN	UN 3481 Lithium ion batteries contained in equipment,or Lithium ion batteries packed with equipment .
Hazard Class	Not restricted
Packaging requirement	PACKING INSTRUCTION 966-967,section II
Sea transportation,according to IMO IMDG Code(Amdt. 41-22)	
UN Number+PSN	UN 3480 lithium ion batteries or UN 3481 Lithium ion batteries contained in equipment,or UN 3481 Lithium ion batteries packed with equipment .
Hazard Class	Not restricted
Special provision	sp188
Package instruction	Not-restricted goods
EmS No	F-A,S-I
Road transportation,according to ADR-2023	
UN Number+PSN	UN 3480 Lithium ion batteries or UN 3481 Lithium ion batteries contained in equipment,or UN 3481 Lithium ion batteries packed with equipment .
Hazard Class	Not restricted
Special provision	sp188
Package instruction	Not-restricted goods

Transport Fashion:By air,by sea,by railway,by road.

## **SECTION 15: REGULATORY INFORMATION**

### **International Regulation:**

Globally Harmonized System of Classification and Labeling of Chemicals  
Recommendations on the Transport of Dangerous Goods Model Regulations  
IATA Dangerous Goods Regulations (DGR)  
International Maritime Dangerous Goods (IMDG CODE)

### **EU Regulation:**

EU regulation (EC) 1272/2008 on "Classification, Labeling and Packaging of Substances and Mixtures" (CLP)  
Registration, Evaluation and Authorization of Chemicals (REACH)  
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

### **US Regulation:**

American National Standard for Hazardous Workplace Chemicals – Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation

## **SECTION 16: OTHER INFORMATION**

### **DISCLAIMER:**

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation.Zhuhai Great Power Energy Co.Ltd. makes no warranty expressed or implied,with respect to this information and disclaims all liabilities from reliance on it.

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