



**JinQu New Energy (ZheJiang) Co., Ltd.**

# **MATERIAL SAFETY DATA SHEET**

**Name: Lithium-ion Battery**

**Model: JQ033-23L/3.6Ah/13.32Wh 3.7V**

<b>Prepared by</b>	<b>Approved by</b>
<b>Date:</b> 2022-1-1	<b>Date:</b> 2021-1-1



## 1. Chemical Product and Company Identification

### Product Identification

#### Lithium-Ion Cell/Battery

JQ033-23L/3.6Ah/13.32Wh 3.7V Lithium-ion Battery

Norminal Voltage : 3.7V  
Norminal Capacity : 3.6Ah  
Equivalent Lithium content : 13.32Wh

Description : LiCoO<sub>2</sub>+C  
Date Prepared : Jan 1, 2022

### Manufacturer

Name: JinQu New Energy (ZheJiang) Co., Ltd.

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## 2. Composition Information

Hazardous Ingredients	%	CAS Number
Aluminum Foil	2-10	7429-90-5
Metal Oxide (Lithium Cobalt Oxide)	20-50	12190-79-3
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Styrene-Butadiene-Rubber	<1	27288-99-9
Copper Foil	2-10	7440-50-8
Carbon (proprietary)	10-30	7440-44-0
Electrolyte (Methyl propionate)	10-20	554-12-1
Ethylene carbonate		96-49-1
Lithium hexafluorophosphate		21324-40-3
Stainless steel, Nickel and inert materials	Remainder	N/A

### 3. Hazards Identification

#### Health Hazards (Acute and Chronic)

These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. Contact of electrolyte and extruded lithium with skin and eyes should be avoided.

#### Sign/Symptoms of Exposure

A shorted battery can cause thermal and chemical burns upon contact with the skin.

May be a reproductive hazard.

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### 4. First Aid Measures

#### Eye

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.

Get medical aid.

#### Skin

Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes.

Get medical aid.

#### Inhalation

Remove from exposure and move to fresh air immediately. Use oxygen if available.

#### Ingestion

Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious.

Call a physician.

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### 5. Fire Fighting Measures

**Flash Point:** N/A.

**Auto-Ignition Temperature:** N/A.

#### Extinguishing Media

Water, CO<sub>2</sub>.

#### Special Fire-Fighting Procedures

Self-contained breathing apparatus.

#### Unusual Fire and Explosion Hazards

Cell may vent when subjected to excessive heat-exposing battery contents.

#### Hazardous Combustion Products

Carbon monoxide, carbon dioxide, lithium oxide fumes.

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### 6. Accidental Release Measures

#### Steps to be Taken in case Material is Released or Spilled



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If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

## **Waste Disposal Method**

It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.

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## **7. Handling and Storage**

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

### **Precautions to be taken in handling and storing**

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided.

Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

### **Other Precautions**

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures.

Do not short or install with incorrect polarity.

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## **8. Exposure Controls/Personal Protection**

### **Respiratory Protection**

In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores.

Respiratory Protection is not necessary under conditions of normal use.

### **Ventilation**

Not necessary under conditions of normal use.

### **Protective Gloves**

Not necessary under conditions of normal use.

### **Other Protective Clothing or Equipment**

Not necessary under conditions of normal use.

### **Personal Protection is recommended for venting battery**

Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

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## **9. Physical and Chemical Properties**

**State:** silver white, prismatic, odorless, solid battery.



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**Odor:** N/A

**pH:** N/A

**Vapor Pressure:** N/A

**Vapor Density:** N/A

**Boiling Point:** N/A

**Solubility in Water:** Insoluble

**Specific Gravity:** N/A

**Density:** N/A

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## 10. Stability and Reactivity

### Stability

Stable

### Conditions to Avoid

Heating, mechanical abuse and electrical abuse.

### Hazardous Decomposition Products

N/A.

### Hazardous Polymerization

N/A.

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.

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## 11. Toxicological Information

Inhalation, skin contact and eye contact are possible when the battery is opened.

Exposure to internal contents, the corrosive fumes will be very irritating to skin, eyes and mucous membranes.

Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

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## 12. Ecological Information

Some materials within the cell are bioaccumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

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## 13. Disposal Considerations

Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment and hazardous waste transportation.



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The battery should be completely discharged prior to disposal and/or the terminals taped or capped to prevent short circuit. When completely discharged it is not considered hazardous.

The battery contains recyclable materials. Recycling options available in your local area should be

considered when disposing of this product, through licensed waste carrier.

In order to avoid short circuit and heating, used lithium polymer batteries should never be stored or transported in bulk. Proper measures against short circuit are:

- ① Storage of batteries in original packaging
- ② Coverage of the terminals
- ③ Embedding in dry sand

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### 14. Transport Information

With regard to transport, the following regulations are cited and considered

- The International Maritime Dangerous Goods (IMDG) Code by International Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by International Civil Aviation Organization (ICAO). These regulations are based on the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria.
- The International Civil Aviation Organization (ICAO) Technical Instructions, Packing Instruction 965-967, Section IB or II (2021-2022 Edition)
- The International Air Transport Association (IATA) Dangerous Goods Regulations, Packing Instruction 965-967, Section IB or II (63rd Edition, 2022). For cells, the Watt-hour rating should not be more than 20Wh; For batteries, the Watt-hour rating should not be more than 100Wh. Watt- hour rating must be marked on the outside of the battery case.
- The International Maritime Dangerous Goods (IMDG) Code (2020 Edition), [Special provision 188, 230]
- The US Hazardous Materials Regulations 49 CFR (Code of Federal Regulations) Sections 173-185 Lithium batteries and cells
- The UN classification number: Class 9 3480(lithium ion batteries) / 3481(lithium ion batteries contained in equipment or lithium ion batteries packed with equipment)
- The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, ST/SG/AC.10/11/Rev.7, section 38.3 Lithium batteries.

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### 15. Regulatory Information



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Marking consideration : European Union: According to Directive 2006/66/EC, the batteries have to be marked with the crossed wheel bin symbol.

According to Dangerous Goods Regulations (see 14.) battery packs have to be marked with the Watt-hour rating.

China : This MSDS in accordance with GB/T18287-2013:General specification of

lithium-ion cells and batteries for cellular phone.

USA : This MSDS meets/exceeds OSHA requirements.

International : This MSDS conforms to European Union (EU), the International Standards Organization (ISO) and the International Labour Organization (ILO)

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