

**Material Safety Data Sheet (MSDS)**  
1907/2006/EC, 1272/2008/EC

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## Material Safety Data Sheet (MSDS)

Report No: SFA2023015

Date of issue:2023-01-10

Sample Name: Lithium -ion battery

Model(s): INR18650-35E-1S2P-6230mAh-3.6V

Applicant: XI'AN SAFTY ENERGY TECHNOLOGY CO., LTD.

Address: NO 11, JINGQIN ROAD EAST, JINGWEI NEW CITY, ECONOMIC  
&TECHNOLOGICAL DEVELOPMENT ZONE, XI'AN SHANXI PR,  
CHINA

Date of Test: 2023-01-04 ~ 2023-01-10

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Reviewed by : Tan xiaolan

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Signed company chop

Xi'an Safty Energy Technology Co., Ltd.



## SECTION 1 : Chemical Product and Company Identification

- **Product identification:** Lithium ion batteries
- **Model:** INR18650-35E-1S2P-6230mAh-3.6V
- **Manufacturer/ Supplier:** Xi'an SAFTY ENERGY TECHNOLOGY CO., LTD.
- **Address:**  
No 11, Jingqin Road East, Jingwei New City, Economic & Technological development Zone, Xi'an , Shanxi PR , China
- **Trade Name:** N/A
- **Phone number of the supplier:** +86-29-86931166-853
- **Emergency Telephone number(24h):** +86-29-86931166
- **Fax:** N/A
- **E-mail address:** sales@safetyenergy.com
- **Referenced documents:** ISO 11014:2009 Safety data sheet for chemical products.

## SECTION 2: Hazards identification

### ▪ Preparation hazards and classification

Not dangerous with normal use. Do not dismantle, open or shred Lithium ion battery. Exposure to the ingredients contained within or their ingredients products could be harmful.

### ▪ Appearance, Color, and Odor

Solid object with no odor, silvery.

### ▪ Primary Route(s) of Exposure

These chemical are contained in a sealed stainless steel enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by Inhalation, Ingestion, Eye contact and Skin contact.

### ▪ Potential Health Effects

**ACUTE (short term):** see Section 8 for exposure controls in the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns.

**Inhalation:** Inhalation of materials from a sealed battery is not an expected route of exposure. Vapors or mists from a ruptured battery may cause respiratory irritation.

**Ingestion:** Swallowing of materials from a sealed battery is not an expected route of exposure. Swallowing the contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

**Skin:** Contact between the battery and skin will not cause any harm. Skin contact with contents of an open battery can cause severe irritation or burns to the skin.

**Eye:** Contact between the battery and the eye will not cause any harm. Eye contact with contents of an open battery can cause severe irritation or burns to the eye.

**CHRONIC(long term):** see Section 11 for additional toxicological data

- **Medical Conditions Aggravated by Exposure:** Not applicable
- **Reported as carcinogen:** Not applicable

**SECTION 3 : Composition/information on ingredients**

*Li-ion battery is a mixture.*

<b>Hazardous Ingredients (Chemical Name)</b>	<b>Concentration or concentration ranges (%)</b>	<b>CAS Number</b>
Nickel cobalt manganese lithium dioxide( $\text{Li}(\text{NiCoMn})\text{O}_2$ )	32.4%	12057-17-9 7440-02-0 7440-48-4
Graphite (C)	18.4%	7782-42-5
Aluminium (Al)	4.7%	7429-90-5
COPPER (Cu)	9.2%	7440-50-8
Electrolyte(LiPF <sub>6</sub> /proprietary)	16.0%	21324-40-3; 96-49-1 616-38-6; 623-53-0
Steel shell	15.4%	7439-89-6
PCB	1.1%	N/A
Other	2.8%	N/A

*Labeling according to EC directives.*

*No symbol and risk phrase are required.*

*Note: CAS Number is Chemical Abstract Service Registry Number.*

*N/A= Not apply.*

## **SECTION 4: First aid measures**

### **▪ Inhalation**

*If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice.*

### **▪ Skin contact**

*If skin contact with contents of an open battery occurs, as quickly as possible remove contaminated clothing, shoes and leather goods. Immediately flush with lukewarm, gently flowing water for at least 30 minutes. If irritation or pain persists, seek medical attention. Completely decontaminate clothing, shoes and leather goods before reuse or discard.*

### **▪ Eye contact**

*If eye contact with contents of an open battery occurs, immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes while holding the eyelids open. Neutral saline solution may be used as soon as it is available. If necessary, continue flushing during transport to emergency care facility. Take care not to rinse contaminated water into the unaffected eye or onto face. Quickly transport victim to an emergency care facility.*

### **▪ Ingestion**

*If ingestion of contents of an open battery occurs, never give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. **DO NOT INDUCE VOMITING.** Have victim drink 60 to 240ml (2~8OZ.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth with water again. Quickly transport victim to an emergency care facility.*

## SECTION 5: Firefighting measures

### ▪ **Flammable Properties**

*In the event that this battery has been ruptured, the electrolyte solution contain within the battery would be flammable. Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.*

### ▪ **Suitable extinguishing agents**

*Use extinguishing media for the materials that are burning.*

### ▪ **Unsuitable extinguishing Media:** Not available

### ▪ **Explosion Data:**

*Sensitivity to Mechanical Impact: This may result in rupture in extreme cases*

*Sensitivity to Static Discharge: Not Applicable*

### ▪ **Special hazards arising from the chemical**

*Fires involving Lithium ion battery can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended to extinguish the fire.*

### ▪ **Protective Equipment and precautions for firefighters**

*As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance. Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.*

### ▪ **NFPA**

*Health: 0 Flammability: 0 Instability: 0*

## SECTION 6: Accidental release measures

### ▪ **Personal Precautions, protective equipment, and emergency procedures**

*Restrict access to area until completion of clean-up. Do not touch the spilled material. Wear adequate protective equipment as indicated in Section 8.*

### ▪ **Environmental precautions:**

*Prevent material from contaminating soil and from entering sewers or waterways.*

### ▪ **Methods and materials for Containment:**

*Stop the leak if safe to do so. Contain the spilled liquid with dry sand or earth. Clean up spills immediately.*

### ▪ **Methods and materials for cleaning up:**

*Absorb spilled material with an inert absorbent (dry sand or earth). Scoop contaminated absorbent into an acceptable waste container. Collect contaminated absorbent and dispose of according to directions in Section 13. Scrub the area with detergent and water, collect all contaminated wash water for proper disposal.*

## *SECTION 7: Handling and storage*

### ▪ **Handling:**

*Don't handling Lithium-ion battery with metalwork. Do not open, disassemble, crush or burn battery. Ensure good Ventilation/exhaustion at the workplace. Prevent formation of dust. Information about protection against explosions and fires: Keep ignition sources away-Do not smoke.*

### ▪ **Storage:**

*If the Lithium-ion batteries are subject to storage for such a long term as more than 6 months, it is recommended to recharge the Lithium ion battery periodically.*

#### *Storage Temperature*

*Short period less than 1 months: -20 °C~+45 °C*

*Short period less than 3 months: -20 °C~+35 °C*

*Short period less than 1 year: -20 °C~+35 °C,*

*Humidity: 60 ±25%RH*

*Do not storage Lithium ion battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited each other or be short-circuited by other metal objects. Do not store together with oxidizing and acidic materials.Keep container tightly sealed.*

## *Section 8 Exposure Controls and Personal Protection*

### ▪ **Engineering Controls**

*Use local exhaust ventilation or other engineering controls to control sources of dust, mist, fumes and vapor. Keep away from heat and open flame. Store in a cool, dry place.*

### ▪ **Personal Protective Equipment**

**Respiratory Protection:** *Not necessary under normal conditions.*

**Skin and body Protection:** *Not necessary under normal conditions, Wear neoprene or nitrile rubber gloves if handling an open or leaking battery.*

**Hand protection:** *Wear neoprene or natural rubber material gloves if handling an open or leaking battery.*

**Eye Protection:** *Not necessary under normal conditions, Wear safety glasses if handling an open or leaking battery.*

### ▪ **Other Protective Equipment**

*Have a safety shower and eye wash fountain readily available in the immediate work area.*

### ▪ **Hygiene Measures**

*Do not eat, drink, or smoke in work area. Maintain good housekeeping.*

**SECTION 9: Physical and chemical properties****▪ Physical State**

**Form:** Sold  
**Odour :** Monotony

**▪ Change in condition**

<b>PH, with indication of the concentration:</b>	Not applicable
<b>Melting point/freezing point:</b>	Not applicable
<b>Boiling Point, initial boiling point and Boiling range:</b>	Not applicable
<b>Flash point:</b>	Not applicable
<b>Upper/lower flammability or explosive limits:</b>	Not applicable
<b>Vapor Pressure:</b>	Not applicable
<b>Vapor Density: (Air=1)</b>	Not applicable
<b>Density/relative density:</b>	Not applicable
<b>Solubility in Water:</b>	Insoluble
<b>n-octanol/water partition coefficient:</b>	Not applicable
<b>Auto-ignition temperature:</b>	Not applicable
<b>Decomposition temperature:</b>	Not applicable
<b>Odour threshold:</b>	Not applicable
<b>Evaporation rate:</b>	Not applicable
<b>Flammability(soil, gas):</b>	Not applicable
<b>Viscosity:</b>	Not applicable

**SECTION 10: Stability and reactivity**

**▪ Stability:** The product is stable under normal conditions.

**▪ Conditions to Avoid (e.g. static discharge, shock or vibration):**

Do not subject Lithium ion battery to mechanical shock. Vibration encountered during transportation does not cause leakage, fire or explosion.

Do not disassemble, crush, short or install with incorrect polarity. Avoid mechanical or electrical abuse.

**▪ Incompatible Materials:** Not Available.

**▪ Hazardous Decomposition Products:** This material may release toxic fumes if burned or exposed to fire.

**▪ Possibility of Hazardous Reaction:** Not Available

## SECTION 11: Toxicological information

▪ **Irritation:**

Risk of irritation occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, irritation to the skin, eyes and respiratory tract may occur.

- **Sensitization:** Not Available
- **Neurological Effects:** Not Available
- **Teratogenicity:** Not Available
- **Reproductive Toxicity:** Not Available
- **Mutagenicity(Genetic Effects):** Not Available
- **Toxicologically Synergistic Materials:** Not Available

## SECTION 12: Ecological information

▪ **General note:**

Water hazard class 1(Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

▪ **Anticipated behavior of a chemical product in environment/possible environmental impact/ecotoxicity:**

Not available

- **Mobility in soil:** No available.
- **Persistence and degradability:** No available.
- **Bioaccumulation potential:** No available
- **Other adverse effects:** No available

## SECTION 13: Disposal considerations

▪ **Product disposal recommendation:**

Observe local, state and federal laws and regulations.

▪ **Packaging disposal recommendation:**

Be aware discarded batteries may cause fire, tape the battery terminals to insulate them. Don't disassembly the battery. Completely discharge containers (no tear drops, no powder rest, Scraped carefully).

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Containers may be recycled or re-used. Observe local, state and federal laws and regulations.



## SECTION 14: Transport Information

For the international transport of lithium batteries, they must comply with these regulations: 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 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.

Lithium batteries which meet the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group II hazardous goods.

1. For lithium battery, UN 3480 or UN3481. Lithium ion batteries or Lithium ion batteries contained in equipment or lithium ion batteries packed with equipment.
2. The consignment should be fully described by proper shipping name and packed, marked and in proper condition for carriage by air. The consignment is not classified as dangerous under the current edition of the IATA 63rd Effective, Dangerous goods regulation and all applicable carrier and government regulations.
3. For transported by air, Lithium-ion Cells/Batteries shipped as "Not Restricted" Cargo must comply with Section II/ Section IB of P1965 or Section II of P1966-P1967 accordingly; 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 (marked by manufacturer).
4. Each consignment must be accompanied with a document such as an air waybill with an indication. For those Lithium ion cells/ batteries contained in equipment, the equipment must be equipped with an effective means of preventing accidental activation. The Telephone number for additional information for Xi'an SAFTY Technology Co., Ltd. is 029-86931166.
5. Quantity per package shall not exceed 10kg in Section IB of P1965. Quantity per package shall not exceed 5kg in Section II of P1966-P1967.
6. For only lithium battery transparent or lithium battery Packed with Equipment transparent, each package must be capable of withstanding a 1.2m drop test in any orientation without damage of cells or batteries contained therein.
7. Lithium ion battery which meet the requirements of INR18650-35E-1S2P could be transported by air and by sea, and the batteries manufactured by Xi'an SAFTY Technology Co., Ltd meet these requirements INR18650-35E-1S2P Lithium batteries identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport.
8. Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit.

## SECTION 15 Regulatory information

OSHA hazard communication standard (29 CFR 1910.1200):

\_\_\_\_\_ Hazardous

\_\_\_\_\_  Non-hazardous

**SECTION 16: Other information**

*The information above is believed to be accurate and represents the best information currently available to us. However, concord makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This material safety data sheet provide guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.*

*The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.*

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