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## Material Safety Data Sheet

### 1. Material and Manufacturer Identification:

Material Identification:

Li-ion Rechargeable Battery Pack

18V 2600mAh **SZ180115001**

Manufacturer: **Suzhou Lishen Energy Science & Technology Co.,Ltd.**

Address: Room 301-1, 4th floor, N°. 588 Wutaishan Road, SND, Suzhou, China

Telephone: +86-512-67540093

### 2. Substance Identification

Substance: Li-ion Rechargeable Battery Pack

Composition:

2-1.	Cases: PC+ ABS	No dangerous	
2-2.	Printed Circuit Board Assembly	No dangerous	
2-3.	Cell: LG	ICR18650-M26	2600mAh

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Hazardous components	%	CAS Number
Nickel compound	0-25	1313-99-1
Manganese compound	0-15	1313-13-9
Cobalt compound	4-50	1307-96-6
Styrene-Butadiene-Rubber	<1	27288-99-9
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Aluminium Foil	2-10	7429-90-5
Copper Foil	2-10	7440-50-8
Carbon	10-30	7440-44-0
Electrolyte (Ethylene carbonate)	10-20	96-49-1

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UN classification: non-hazardous lithium battery

UN recommendations: It is recommended to follow the **UN Regulations on the Transport of Dangerous Goods** contained in the Model (ST/SG/AC. 10/1 Rev. 11)

\*\* Li- ion rechargeable cells are not subject to the UN Regulations if they meet the following provisions:

### 3. Hazards Identification

Main ways of invasion: skin contact, skin absorption; eye contact, inhalation.

Ingestion: none

Symptoms of exposure: Skin contact, No effect under routine handling and use.

Skin absorption: No effect under routine handling and use.

Eye contact: No effect under routine handling and use.

Inhalation: No effect under routine handling and use.

Reported as carcinogen: Not applicable.

### 4. First Aid Measures

Ingestion: If swallowed, Obtain medical attention immediately.

Inhalation: Leave area immediately and seek medical attention.

Eye Contact: Rinse eyes with water for **15 minutes** and seek medical attention.

Skin Contact: Wash area thoroughly with soap and water and seek medical attention.

Ingestion: Drink milk/water and induce vomiting; seek medical attention

**IF EXPOSURE TO INTERNAL MATERIAL WITHIN CELL DUE TO DAMAGED OUTER CASING, THE FOLLOWING ACTIONS ARE RECOMMENDED:**

### 5. Fire Fighting Measures

Extinguishing Media: Use extinguishing media suitable for the materials that are burning.

Firefighting Equipment: Use **NIOSH/MSHA** approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

## 6. Accidental Release Measures

On Land: Place material into suitable containers and call local fire/police department.

In Water: If possible, remove from water and call local fire/police department.

## 7. Handling and Storage

Handling: No special protective clothing required for handling individual pack.

Storage: Store in a cool, dry place.

## 8. Exposure Controls / Personal Protection

Engineering Controls: Keep away from heat and open flame.

Personal Protection:

Respirator: Not required during normal operations. SCBA required in the event of a fire.

Eye/Face Protection: Not required beyond safety practices of employer.

Gloves: Not required for handling of battery.

Foot Protection: Steel toed shoes recommended for large container handling.

## 9. Physical and Chemical Properties

State	Solid
Odor	N/A
PH	N/A
Vapor pressure	N/A
Vapor density	N/A
Boiling point	Insoluble
Solubility in water	N/A
Specific gravity	N/A
Density	N/A

## 10. Stability and Reactivity

Reactivity: None

Incompatibilities: None during normal operation.

Conditions to Avoid: Avoid exposure to heat, areas near open flames and corrosive environments.

Do not pierce, crush or incinerate.

11. Toxicological Information

This product does not elicit toxicological properties during routine handling and use.

12. Transport Information

In the case of transportation, confirm no leakage and no overspill from a container. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Handle with care. Flammability hazard exists if the package is damaged. Please refer to Section 7- HANDLING AND STORAGE.

- Codes and classifications according to:
  - International Regulations for Air Transport in accordance with IATA-DGR:  
Section II of PI 965/966/967
  - International regulations for maritime transport in accordance with IMDG CODE:  
Special provision 188
  - National regulations for transport land GB12268-2005
  - The UN classification number: Class 9      3481

However, since it corresponds to special provision section II of PI 965/966/967 of IATA-DGR, special provision 188 of IMDG CODE, GB12268-2005 of land regulation, this battery cell can be conveyed normally.

Production of MSDS proving UN manual of Tests and Criteria, part III, sub-section 38.3 is met on MSDS.

13. Regulatory Information

OSHA Hazard communication standard (29 CFR 1910.1200)

Hazardous      √      Non-hazardous

14. UN Test Result

There are no hazards in accordance with the UN recommendations tests (Manual of Tests and Criteria, Part III, sub-section 38.3)

Nº	ITEMS	RESULT	REMARKS
1	Altitude Simulation	Pass	
2	Thermal Shock	Pass	
3	Vibration	Pass	
4	Shock	Pass	
5	External Short	Pass	
6	Impact	Pass	
7	Overcharge	Pass	
8	Forced Discharge	N/A	This item is not applicable

#### 15. Other Information

The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.

This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

#### 16. Reference

- Chemical substances information:
  - Japan Advanced Information center of Safety and Health International Chemical Safety Cards (ICSCs):
    - International Occupational Safety and Health Information Centre (CIS).
    - 1999 TLVs and BEIs: American Conference of Governmental Industrial Hygienists (ACGIH).
- Dangerous Goods Regulations:
  - 62<sup>nd</sup> Edition of IATA DGR Effective 1 January 2021: International Air Transport Association (IATA).
  - 35 - 10<sup>th</sup> Edition of IMDG CODE Effective 1 January 2012: International Maritime Organization (IMO).
  - GB12268 Effective 1 November 2005: Standardization Administration of the People's Republic of China.