



MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT IDENTIFICATION	
Product Identification Lithium-Ion Rechargeable Cell Nominal Voltage:3.2V Cell P/N:44147132(LP44147132AB) Nominal Cell Capacity:50Ah Watt-Hour rating:160Wh Cell UL NO: Customer P/N: Reference No.	
Manufacturer Identification Tianjin Lishen Battery Joint-Stock CO. LTD. 6 Lanyuan Road, Huayuan Hi-Tech Industry Park, Tianjin 300384, China Http://www.lishen.com.cn	
PACK P/N: N/A PACK Capacity: N/A PACK UL NO: N/A Customer Model Name: N/A	
86 - 22 - 83710366 Phone Number (For Information) 86 - 22 - 83710366 Emergency Phone Number Telex 86 - 22 - 83710366	
<small>Note: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that. Not Restricted and meet the Special Provision Number A 45 & A154</small>	

SECTION 2 HAZARDS IDENTIFICATION	
Primary Routes of Entry <input type="checkbox"/> Inhalation <input type="checkbox"/> Skin Absorption <input type="checkbox"/> Ingestion <input type="checkbox"/> Eye contact	CARCINOGEN LISTED IN <input type="checkbox"/> NTP <input type="checkbox"/> LARC Monograph <input type="checkbox"/> OSHA <input type="checkbox"/> NOT Listed
Health Hazards <small>Acute and chronic</small> All chemicals are contained in a sealed can. Risk of exposure occurs only, if the battery is mechanically or electrically abused.	
Medical Conditions Generally Aggravated By Exposure An acute exposure will not generally aggravate any medical condition.	
Symptoms of Exposure Skin contact, no effect under routine handling and use.	
Eye Contact No effect under routine handling and use	
Skin Contact No effect under routine handling and use	
Ingestion No	
Inhalation No	
Reported as carcinogen Not applicable	

SECTION 3 COMPOSITION IDENTIFICATION AND INFORMATION					
COMPONENTS-Chemical Name and Common Names	%	OSHA PEL	ACGIH TLV	CAS Number	OTHER LIMITS RECOMMENDED
(Hazardous Components 1% or greater, Carcinogens 0.1% or greater)					
Lithium iron phosphate	25.0%			12190-79-3	
Graphite Carbon	13.9%			7782-42-5	
Lithium Hexafluorophosphate	2.6%			21324-40-3	
Organic solvent	17.0%				
Non-Hazardous Ingredients (tabs, pouch, separator, etc.)	41.5%				
Total	100%				

SECTION 4 FIRST-AID MEASURES	
If exposure to internal materials in cell due to damaged outer casing, the following actions are recommended.	
Eye Contact	In case of eye contact, flush with lot of water for 15 minutes, and get medical help.
Skin Contact	In case of skin contact with contents of battery, flush immediately with water.
Inhalation	In case of light inhalation ,move to an area with flash air immediately, if irritation persists, get medical help.
Ingestion	In case of ingestion, drink milk/water to induce vomitting, get medical help.

SECTION 5 FIRE FIGHTING MEASURES	
Extinguisher Media: CO ₂ or dry chemical power or sand	
Special Fire-Fighting Procedures: In case of fire in cell original containers, use CO ₂ or dry chemical extinguisher or sand; For fire in an adjacent area, water can be used.	

SECTION 6 ACCIDENTAL RELEASE MEASURES	
On Land: Place material into suitable containers and call local fire/police department to ask for help.	
In Water: If possible, remove from water far from body in special fixture, and call local fire/police department	

SECTION 13 DISPOSAL CONSIDERATIONS

There is no contamination during normal operation and use. Lithium batteries should have their terminals insulated prior to disposal, do not throw away a used battery and provide them for recycling company.

Open cells should be treated as hazardous waste. If the leakage or other material is Released, we should take actions as follows:

- Leave the area, allow the batteries to cool down, let the vapors to dissipate .
- Avoid skin and eye contact or inhalation of vapors. Remove spiller liquid with absorbent and incinerate after.

Waste Disposal method Opened cells should be treated as hazardous waste.

Incineration: incineration should never be performed by battery users but eventually by trained professionals in authorized facilities with proper gas and fumes treatment.

Landfilling: According to the proper laws and regulations in different countries or areas, the battery should be buried deeply in the specified place;

Recycling: Send to authorized recycling facilities to get Cu and Al, eventually through licensed waste carrier;

SECTION 14 Transportation

UN-No : UN3480

ADR/RID Class: 9; Packing group: II; ADR/RID-Labels: 9; Proper shipping name: Lithium ion batteries, UN3480

IMO Class: 9; Packing group: II; ADR/RID-Labels: 9; Proper shipping name: Lithium ion batteries, UN3480

IATA DGR Class: 9; Packing group: II; ADR/RID-Labels: 9; Proper shipping name: Lithium ion batteries, UN3480

According to ICAO Packing Instruction 965 ,specifying less than 5kg gross per package.

There is no hazards in accordance with the UN recommendations test.(UN manual of tested and criteria 38.3).

SECTION 15 REGULATORY INFORMATION

IATA DGR

Hazardous

Non-hazardous

SECTION 16 OTHER INFORMATION

UN TEST RESULT

There is no hazards in accordance with the UN recommendations test.(UN manual of tested and criteria 38.3)

Cell Part Number	44147132(LP44147132AB)
Nominal Voltage	3.2V
Nominal Capacity	50Ah
Cell Mass	1750g
Equivalent Lithium Content	16.3g

Test NO	Test Item	Criteria	Result	Remark
38.3.4.1	Altitude Test	No mass loss,leakage,venting,disassembly,rupture,and fire.OCV should not be less than 90% before testing	Passed	
38.3.4.2	Thermal Test	No mass loss,leakage,venting,disassembly,rupture,and fire.OCV should not be less than 90% before testing	Passed	
38.3.4.3	Vibration	No mass loss,leakage,venting,disassembly,rupture,and fire.OCV should not be less than 90% before testing	Passed	
38.3.4.4	Shock	No mass loss,leakage,venting,disassembly,rupture,and fire.OCV should not be less than 90% before testing	Passed	
38.3.4.5	External Short Circuit	External temperature should not exceed 170degC. No disassembly, and fire within six hours of this test.	Passed	
38.3.4.6	Impact	External temperature should not exceed 170degC. No disassembly, and fire within six hours of this test.	Passed	
38.3.4.7	Overcharge	No disassembly, and fire within seven days of this test.	N/A	
38.3.4.8	Forced Discharge	No disassembly, and fire within seven days of this test.	Passed	

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.