SAFETY DATA SHEET

Issuing Date 16-Apr-2010 Revision Date 22-Jan-2015 Revision Number 2



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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name LP103450 lithium polymer battery

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Name SHENZHEN PKCELL BATTERY CO.,LTD

Supplier Address E2 Building, Guangming Technology Park, No. 24 Zhonghua Road, Longhua New Area,

ShenZhen 518131 China

ShenZhen GuangDong 518131 US

Supplier Phone Number Phone:0755-86670651

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Supplier Email sales9@pkcell.net

Emergency telephone number

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 1



GHS Label elements, including precautionary statements

Emergency Overview

Signal word

Danger

Hazard Statements

Causes severe skin burns and eye damage





This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance This is a battery. In case of rupture: the above hazards exist.

Appearance Metallic

Physical State Solid containing liquid Solid

Odor No data available

Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Do not eat, drink or smoke when using this product

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician

Skin

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Immediately call a POISON CENTER or doctor/physician

ngestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable



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Unknown Toxicity

19% of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful if swallowed
May be harmful in contact with skin
Very toxic to aquatic life with long lasting effects

Interactions with Other Chemicals

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

•

Chemical Name	CAS No	Weight-%	Trade Secret
Supplier Trade Secret	Proprietary	15 - 40	*
Supplier Trade Secret	Proprietary	10 - 30	*
Supplier Trade Secret	Proprietary	10 - 30	*
Supplier Trade Secret	Proprietary	7 - 13	*
Supplier Trade Secret	Proprietary	3 - 7	*
Supplier Trade Secret	Proprietary	3 - 7	*
Supplier Trade Secret	Proprietary	3 - 7	*

^{*}The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice First aid is upon rupture of sealed battery.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15

minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate

medical attention/advice.

Skin Contact Wash off immediately with soap and plenty of water while removing all

contaminated clothes and shoes. Seek immediate medical attention/advice.

Remove and isolate contaminated clothing and shoes.

Inhalation Remove to fresh air. If breathing has stopped, give artificial respiration. Get

medical attention immediately. Do not use mouth-to-mouth method if victim

ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary

edema may occur. Get medical attention immediately if symptoms occur.

Ingestion Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water.

Never give anything by mouth to an unconscious person. Call a physician or

poison control center immediately.



Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Burning sensation. **Effects**

Indication of any immediate medical attention and special treatment needed

Notes to Physician Product is a corrosive material. Use of gastric lavage or emesis is

contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy

sputum, and high pulse pressure.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Dry chemical, CO2, water spray or regular foam. Move containers from fire area if you can do it without risk.

Large Fires Move containers from fire area if you can do it without risk.

Unsuitable extinguishing media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact Nο

Sensitivity to Static Discharge No.

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. Move containers from fire area if you can do it without risk.



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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate

ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled

material.

Other Information Refer to protective measures listed in Sections 7 and 8. ELIMINATE all ignition sources (no

smoking, flares, sparks or flames in immediate area).

Environmental Precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage

if safe to do so. Should not be released into the environment. Do not allow to enter into

soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Absorb with earth, sand or other

non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling In case of rupture. Use personal protection equipment. Avoid contact with skin, eyes or

 ${\it clothing. Ensure a dequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray.}$

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from

moisture. Store locked up. Keep out of the reach of children. Store away from other

materials.

Incompatible Products Acids. Bases. Oxidizing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Supplier Trade Secret	TWA: 0.02 mg/m ³	-	



Supplier Trade Secret	TWA: 2 mg/m³ respirable fraction	TWA: 15 mg/m³ total dust	IDLH: 1250 mg/m ³
	all forms except graphite fibers	synthetic	TWA: 2.5 mg/m³ respirable dust
		TWA: 5 mg/m ³ respirable fraction	
		synthetic	
		(vacated) TWA: 2.5 mg/m ³	
		respirable dust natural	
		(vacated) TWA: 10 mg/m³ total	
		dust synthetic	
		(vacated) TWA: 5 mg/m ³ respirable fraction synthetic	
		TWA: 15 mppcf natural	
Supplier Trade Secret	TWA: 0.2 mg/m³ fume TWA: 1	TWA: 0.1 mg/m³ fume	IDLH: 100 mg/m ³ dust, fume and
Supplier Trade Secret	mg/m³ Cu dust and mist	TWA: 0.1 mg/m³ dust and mist	mist
	mg/m ou dust and mist	(vacated) TWA: 0.1 mg/m³ Cu	TWA: 1 mg/m³ dust and mist
		dust, fume, mist	TWA: 0.1 mg/m³ fume
Supplier Trade Secret	TWA: 1 mg/m³ respirable fraction	TWA: 15 mg/m ³ total dust	TWA: 10 mg/m³ total dust
		TWA: 5 mg/m³ respirable fraction	TWA: 5 mg/m ³ respirable dust
		(vacated) TWA: 15 mg/m³ total	
		dust	
		(vacated) TWA: 5 mg/m ³	
		respirable fraction (vacated)	
	T)4/4 0.5 / 3.5	TWA: 5 mg/m³ Al Aluminum	
Supplier Trade Secret	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m³ F	
		TWA: 2.5 mg/m³ dust (vacated) TWA: 2.5 mg/m³	
		(vacateu) TVVA. 2.5 mg/m	

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962

(11th Cir., 1992) See section 15 for national exposure control parameters

Appropriate engineering controls

Engineering Measures Showers

Eyewash stations Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Face protection shield.

Skin and Body Protection Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant

apron. Impervious gloves.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are

exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or

smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all

contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State Solid containing liquid, Solid



Appearance	Metallic	Odor	No data available
Color	No information available	Odor Threshold	No information available
Property	Values	Remarks Method	
pH	No data available	None known	
•	No data available	None known	
Melting / freezing point			
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	Insoluble in water	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/wa		None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available	None known	
	No data available		
Oxidizing Properties	NO data available		
Other Information			
Softening Point	No data available		
V000	h		

10. STABILITY AND REACTIVITY

No data available

No data available

Reactivity

No data available.

VOC Content (%)

Particle Size Distribution

Particle Size

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Acids. Bases. Oxidizing agent.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION



Information on likely routes of exposure

Product Information Product does not present an acute toxicity hazard based on known or supplied information.

In case of rupture:.

Inhalation Specific test data for the substance or mixture is not available. Corrosive by inhalation.

(based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs.

Pulmonary edema can be fatal. May cause irritation of respiratory tract.

Eye Contact Specific test data for the substance or mixture is not available. Causes burns. (based on

components). Corrosive to the eyes and may cause severe damage including blindness.

Causes serious eye damage. May cause irreversible damage to eyes.

Skin Contact Specific test data for the substance or mixture is not available. Corrosive. (based on

components). Causes burns.

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on

components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea,

vomiting and diarrhea.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Supplier Trade Secret	> 10000 mg/kg (Rat)	-	-
Supplier Trade Secret	= 984 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Mutagenic Effects No information available.

natagorno Enocio

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Supplier Trade Secret	A3	Group 2B		X

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present



Reproductive Toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure. Based on

classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from

chronic or repeated exposure. (STOT RE).

Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw

necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May

cause adverse liver effects.

Target Organ Effects Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Central Vascular System (CVS).

Kidney. Liver. Lungs.

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 3,919.00 mg/kg **ATEmix (dermal)** 4,860.00 mg/kg (ATE)

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Supplier Trade Secret	subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)		48h EC50: = 0.03 mg/L
Supplier Trade Secret		96h LC50: = 13.6 mg/L (Morone saxatilis)		

Persistence and Degradability

No information available.

Bioaccumulation

No information available

Other adverse effects

No information available.



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13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods Should not be released into the environment.

Contaminated Packaging Dispose of in accordance with federal, state and local regulations.

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Supplier Trade Secret	Toxic
Supplier Trade Secret	Toxic
Supplier Trade Secret	Ignitable powder
Supplier Trade Secret	Corrosive Ignitable Reactive

14. TRANSPORT INFORMATION

Note:

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

DOTNOT REGULATEDProper Shipping NameNON REGULATED

Hazard Class N/A Emergency Response Guide 147

Number

TDG Not regulated

MEX Not regulated

<u>ICAO</u> Not regulated

IATA Not regulated NON REGULATED

Hazard Class N/A



IMDG/IMO Not regulated Hazard Class N/A

EmS-No. F-A, S-I

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies

DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Supplier Trade Secret -		15 - 40	0.1
Supplier Trade Secret -		10 - 30	1.0
Supplier Trade Secret -		3 - 7	1.0

SARA 311/312 Hazard Categories

Acute Health HazardNoChronic Health HazardNoFire HazardNoSudden release of pressure hazardNoReactive HazardNo

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Supplier Trade Secret		X	Х	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Supplier Trade Secret	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Supplier Trade Secret			

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.



U.S. State Right-to-Know Regulations

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Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Supplier Trade Secret	Х		Χ	Х	Х
Supplier Trade Secret	X	Х	Χ		
Supplier Trade Secret	Х	Х	Х	Х	Х
Supplier Trade Secret		Х		Х	
Supplier Trade Secret	Х	X	Х		

International Regulations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Supplier Trade Secret (10 - 30)		Mexico: TWA= 2 mg/m ³
Supplier Trade Secret (10 - 30)		Mexico: TWA= 1 mg/m³ Mexico: TWA= 0.2 mg/m³ Mexico: STEL= 2 mg/m³
Supplier Trade Secret (3 - 7)		Mexico: TWA 10 mg/m ³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Non-controlled

16. OTHER INFORMATION								
NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards -				
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	Personal Protection				

Prepared By

Product Stewardship

23 British American Plus

23 British American Blvd. Latham, NY 12110

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Revision Note No information available

Disclaimer

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End of Safety Data Sheet

