KEYLAB
众凯检测

REPORT No. : KEYLAB1607023K02

Safety Data Sheet

APPLICANT	:	SHENZHEN RUIDE ELECTRONIC INDUSTRIAL CO.,LTD
ADDRESS	:	10A-1001, F1 Block, TCL International E City, Zhong Shan Yuan Road, NanShan District, ShenZhen, China
BRAND NAME	:	ZTE
SAMPLE NAME	:	Li-ion Battery
MODEL NAME	:	Li3831T43P4h826247
ISSUE DATE	:	2016-07-25

Product Testing Technical Service KEYLAB Global Certification

Shenzhen Keylab Technology Co., Ltd.

Shenzhen Keylab Technology Co., Ltd.
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1. Chemical Product and Company Identification

Product Name	Li-ion Battery
Model No.	Li3831T43P4h826247
Nominal Voltage	3.8V
Nominal Capacity	3080mAh
Watt-hour Rating	11.7Wh
Manufacturer	SHENZHEN RUIDE ELECTRONIC INDUSTRIAL CO.,LTD
Manufacturer Address	10A-1001, F1 Block, TCL International E City, Zhong Shan Yuan Road, NanShan District, ShenZhen, China
Emergency Telephone Number	+86 752 6509226

2. Hazards Identification

Preparation hazards and classification	When the battery is in extreme pressure deformation, high-temperature environment, overload, short-circuit condition, or disassemble the battery, an explosion of fire and chemical burn hazards may occur.
Carcinogenicity	NTP: None IARC Monograph: None OSHA Regulated: None
Primary Route(s) of Exposure	These chemicals 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 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:** A battery volatilizes no gas unless it was damaged. Damaged battery will volatilize little gas may stimulate the respiratory tract or cause an anaphylaxis in serious condition. Ingestion: Swallowing battery will be Damaged to the respiratory tract and Cause chemical burns to the stomach; in serious conditions it will cause Permanent damage. **Skin:** In normal condition, Contact between the battery and skin will not cause any harms. Contact with a damaged battery may cause skin allergies or chemical burns.

	Eye: In normal condition, Contact between the battery and eyes will not cause any harms. However, the gas Volatilize from a damaged battery may be harmful to eyes.

3. Composition/Information on Ingredients

Hazardous Ingredients	Approximate% of total weight	CAS Number	EC No.
Lithium Cobalt Oxide	34	12190-79-3	235-362-0
PVDF	1.5	24937-79-9	200-867-7
Carbon	21	7782-42-5	231-955-3
Lithium hexafluorophosphate	6	21324-40-3	244-334-7
PE	2	9002-88-4	200-815-3
PP	2	9003-07-0	/
Aluminum	19	7429-90-5	231-072-3
Copper	13	7440-50-8	231-159-6
Nickel	1.5	7440-02-0	231-853-9

4. First Aid Measures

The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing.	
Skin contact	If skin contact with contents of 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.
Inhalation	If contents of an opened battery are inhaled, remove source of contamination or move victim to fresh air. Obtain medical advice
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. Call a physician.

5. Fire Fighting 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 media	Cold water and dry powder in large amount are applicable. Use metal fire extinction powder or dry sand if only few cells are involved.
Specific Hazards arising from the chemical	May form hydrofluoric acid if electrolyte comes into contact with water. In case of fire, the formation of the following flue gases cannot be excluded: Hydrogen fluoride (HF), Carbon monoxide and carbon dioxide.
Protective Equipment and precautions for firefighters	As for any fire, evacuate the area and fight the fire from a sate distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance.

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 personal 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 of earth. Clean up spills immediately.
Methods and materials for cleaning up	Absorb spilled material with an inert absorbent (dry and earth), Scoop contaminated absorbent into an acceptable waste container. Collect all 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.

7. Handling and Storage

Handing	Do not dismantle open or shred secondary Lithium Ion Battery; Don't handing Lithium Ion Battery with metalwork. Do not open, dissemble, crush or burn battery. Do not use any chargers other than those recommended by the manufacturer. 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 Battery is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium Ion Battery periodically. 3 months: -10℃~+45℃, 45 to 85% RH And recommended at -10℃~+35℃ for long period storage. The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more. Do not storage Lithium Ion Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. Keep out of reach of children. Do not expose Lithium Ion Battery to heat of fore. Avoid storage in direct sunlight. Do not store together with oxidizing and acidic materials.

8. Exposure Controls/Personal Protection

Hazard Characterization

Ingredient	Risk Codes	Safety Description	Hazard
Lithium Cobalt Oxide	R22; R43; R50/53	S24; S37; S60; S61	Xn (Harmful) N (Dangerous for the environment)
PVDF	NA	S22; S24/25	NA
Carbon	R36/37/38, R36/37 R20, R10	S22; S24/25	F(Highly Flammable) Xn (Harmful) Xi (Irritant)
PP	R5 R6 R19	S22; S24/25	F(Highly Flammable)
PE	R5 R6 R19	S22; S24/25	F(Highly Flammable)
Copper	R11 R36 R37 R38	S5,S26,S16,S61,S36/37	F(Highly Flammable) N (Dangerous for the environment)

			Xn (Harmful) Xi (Irritant)
Aluminum	R17, R15, R36/38, R10, R67, R65, R62, R51/53, R48/20, R38, R1	S7/8,S43,S26,S62,S61, S36/37,S33,S29,S16,S9	F(Highly Flammable) Xn (Harmful) Xi (Irritant)
Nickel	R43, R49, R53	S45,S53,S61	T(Toxic)

Safeguard procedures

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 nitride rubber gloves if handing an open or leaking battery. Hand protection: Wear neoprene or natural rubber material gloves if handing an open of leaking battery. Eye Protection: Not necessary under normal conditions, Wear safety glasses if handing 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.

9. Physical and Chemical Properties

Physical State	Form: Rectangle shape
	Color: black
	Odour: Monotony
Change in condition	Not available
PH, with indication of the concentration	Not available
Melting point/freezing point	Not available

Boiling Point, initial boiling point and boiling range	Not available
Flash Point	Not available
Upper/Lower flammability or explosive limits	Not available
Density/relative density	Not available
Solubility in Water	Insoluble
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Flammability (soil, gas)	Not available
Viscosity	Not available

10.Stability and Reactivity

Stability	The product is stable under normal conditions.
Conditions to avoid	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

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

12.Ecological Information

General note	Water hazard class 1 (Self- assessment): slightly hazardous for water.
Anticipated behavior of a chemical product in environment/possible environmental impace/ecotoxicity	Not Available
Mobility in soil	Not Available
Persistence and Degradability	Not Available
Bioaccumulation potential	Not Available
Other Adverse Effects	Not Available

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.

California regulated debris
RCRA Waste Code: Non-regulated
Dispose of according to all federal, state, and local regulations.
Contaminated Packaging Dispose of in accordance with local regulations.
California Hazardous Waste Codes 141
Washington State Waste Codes WT02
Connecticut Waste Codes CR05
Product Waste Information

US EPA Waste Number	D004 D006 D008	US EPA Waste Hazard	Toxic
Alabama Waste Code	Not required	Alabama Waste Hazards	Toxic
Alaska Waste Code	Not required	Alaska Waste Hazards	Toxic
Arkansas Waste Code	Not required	Arkansas Waste Hazard	Toxic
Arizona Waste Codes	Not required	Arizona Waste Hazards	Toxic
California Hazardous Waste Codes	141	California Waste Hazards	Toxic Toxic Waste oils
Colorado Waste Code	Not required	Colorado Waste Hazards	Toxic
Connecticut Waste Codes	CR05	Connecticut Waste Hazards	Toxic Waste Oil
Delaware Waste Codes	Not required	Delaware Waste Hazards	Toxic
Florida Waste Codes	Not required	Florida Waste Hazards	Toxic
Georgia Waste Codes	Not required	Georgia Waste Hazards	Toxic
Hawaii Waste Codes	Not required	Hawaii Waste Hazards	Toxic
Idaho Waste Codes	Not required	Idaho Waste Hazards	Toxic
Iowa Waste Codes	Not required	Iowa Waste Hazards	Toxic
Illinois Waste Codes	Not required	Illinois Waste Hazards	Toxic
Indiana Waste Codes	Not required	Indiana Waste Hazards	Toxic
Kansas Waste Codes	Not required	Kansas Waste Hazards	Toxic
Kentucky Waste Codes	Not required	Kentucky Waste Hazards	Toxic
Louisiana Waste Codes	Not required	Louisiana Waste Hazards	Toxic
Massachusetts Waste Codes	Not required	Massachusetts Waste Hazards	Toxic
Maryland Waste Codes	Not required	Maryland Waste Hazards	Toxic
Maine Waste Codes	Not required	Maine Waste Hazards	Toxic
Michigan Waste Codes	Not required	Michigan Waste Hazards	Toxic Oil
Minnesota Waste Codes	Not required	Minnesota Waste Hazards	Toxic Oil
Missouri Waste Codes	Not required	Missouri Waste Hazards	Toxic Oil

Mississippi Waste Codes	Not required	Mississippi Waste Hazards	Toxic
Montana Waste Codes	Not required	Montana Waste Hazards	Toxic
North Carolina Waste Codes	Not required	North Carolina Waste Hazards	Toxic
North Dakota Waste Codes	Not required	North Dakota Waste Hazards	Toxic
Nebraska Waste Codes	Not required	Nebraska Waste Hazards	Toxic
New Hampshire Waste Codes	Not required	New Hampshire Waste Hazards	Toxic Oil
New Hampshire Waste Codes	Not required	New Hampshire Waste Hazards	Toxic Oil
New Jersey Waste Codes	Not required	New Jersey Waste Hazards	Toxic
New Mexico Waste Codes	Not required	New Mexico Waste Hazards	Toxic
Nevada Waste Codes	Not required	Nevada Waste Hazards	Toxic
New York Waste Codes	Not required	New York Waste Hazards	Toxic
Ohio Waste Codes	Not required	Ohio Waste Hazards	Toxic
Oklahoma Waste Codes	Not required	Oklahoma Waste Hazards	Toxic
Oregon Waste Codes-WM	Not required		
Oregon Waste Codes	Not required	Oregon Waste Hazards	Toxic
Pennsylvania Waste Codes	Not required	Pennsylvania Waste Hazards	Toxic
Rhode Island Waste Codes-Original	Not required	Rhode Island Waste Hazards- Original	Extremely Hazardous Toxic
Rhode Island Waste Codes- WM	Not required		
Rhode Island Waste Codes	Not required	Rhode Island Waste Hazards	Extremely Hazardous Toxic
South Carolina Waste Codes	Not required	South Carolina Waste Hazards	Toxic
South Dakota Waste Codes	Not required	South Dakota Waste Hazards	Toxic
Tennessee Waste	Not required	Tennessee Waste Hazards	Toxic

Codes			
Texas Waste Codes	Not required	Texas Waste Hazards	Toxic
Utah Waste Codes	Not required	Utah Waste Hazards	Toxic
Virginia Waste Codes	Not required	Virginia Waste Hazards	Toxic
Vermont Waste Codes-Original	Not required	Vermont Waste Hazards-Original	Do not use with federal code. Contains Vermont Hazardous Waste Toxic
Vermont Waste Codes	Not required	Vermont Waste Hazards	Toxic
Washington State Waste Codes	WT02	Washington Waste Hazards	Toxic
Wisconsin Waste Codes	Not required	Wisconsin Waste Hazards	Toxic
West Virginia Waste Codes	Not required	West Virginia Waste Hazards	Toxic
Wyoming Waste Codes	Not required	Wyoming Waste Hazards	Toxic

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 (2015-2016 Edition)

- The International Air Transport Association (IATA) Dangerous Goods Regulations, Packing Instruction 965-967, Section ⅠB or Ⅱ (57th Edition, 2016). For cells, the Watt-hour rating should not be more than 20Wh; For batteries, the Watt-hour rating should not be more than 100Wh. Watthour rating must be marked on the outside of the battery case.

- The International Maritime Dangerous Goods (IMDG) Code (2012 Edition), [Special provision 188, 230]

-The UN classification number: Class 9 3480 / 3481

- The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries, Rev.5, Amend.1 and Amend.2.

15.Regulatory Information

EU regulatory information

Marking consideration

According to Directive 2012/19/EU, the batteries have to be marked with the crossed wheel bin symbol.

According to Dangerous Goods Regulations, the battery packs have to be marked with the Watt-hour rating.

U.S. Regulations

National Inventory TSCA

All of the components are listed on the TSCA inventory.

SARA

To the best of our knowledge this product contains no toxic chemicals subject to the supplier notification requirements of Section 313 of the Superfund Amendments and Reauthorization Act(SARA/EPCRA) and the requirements of 40 CFR Part 372.

16. 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.

DISCLAIMER

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty express or implied, with respect to such information, and we assume no liablity resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental consequential or exemplary damages, howsoever arising from using the above information.

Checked by: Ye Jia Approved by: Hao Yanjun

******* End of Material Safety Data Sheet *******