

LiSOCL<sub>2</sub> Battery Specification

# ER14505-1S4P

10400mAh



## 1 Scope

This specification is applied to the reference battery in this Specification that manufactured by Akyga Battery

# 2 Product Specification

Table	1	

No.	ltem		Specification
1	Voltage		3.6 V
2	Capacity (Discharge to 2.0V @1mA/Upright)	Standard Cap	10400 mAh
	Max Discharge summat	Continuity	300 mA
3	Max Discharge current	Plus	600 mA
4	Termination Vol.		2.0 V
5	CCV@50 <b>Ω</b>		3.25 V
6	Weight		Approx.80g
7	Work Temp		-40 °C to 85 °C
8	Storage Temp		10 °C to 30 °C
9	Storage Humidity		≪65%
10	Guarantee Period		10 年



## **3** Performance And Test Conditions

## 3.1 Standard Test Conditions

Test should be conducted with new batteries within one week Unless otherwise specified, test and measurement shall be done under temperature of  $23 \pm 2^{\circ}$ C and relative humidity of 45~85%. If it is judged that the test results are not affected by such conditions, the tests may be conducted at temperature 15~30°C and humidity 25~85%RH.

## 3.2 Measuring Instrument or Apparatus

## 3.2.1 Dimension Measuring Instrument

The dimension measurement shall be implemented by instruments with equal or more precision scale of 0.01mm.

## 3.2.2 Voltmeter

Standard class specified in the national standard or more sensitive class having inner impedance more than  $10k\,\Omega\,/V$ 

## 3.2.3 Ammeter

Standard class specified in the national standard or more sensitive class. Total external resistance including ammeter and wire is less than 0.01  $\Omega$ .

3.3.Standard Discharge : Cells shall be discharged at a constant current of 4mA to 2.0 volts @  $23 \pm 2^{\circ}$ C

3.4 Appearance There shall be no such defect as flaw, crack, rust, leakage, which may adversely affect commercial value of battery.

Item	Test Method and Condition	Requirements
(1) Open-Circuit Voltage	Measure with DC Voltage meter	≥3.6V
(2) Minimal Rated Capacity	Discharge to 2.0V1mA	Discharge Capacity
Cupuony		≥10400mAh
(3) Quickly Discharge Capacity	Discharge to 2.0V 100mA	Discharge Capacity
Cupucky		≥5000mAh



## 3.6 Temperature Dependence of discharge capacity

Cells shall be discharged per 3.3 and discharged @1mA to 2.0 volts. Except to be discharged at temperatures per Table 3. Cells shall be stored for 3 hours at the test temperature prior to discharging and then shall be discharged at the test temperature. The capacity of a cell at each temperature shall be compared to the capacity achieved at  $23 \pm 2$  °C and the percentage shall be calculated. Each cell shall meet or exceed the requirements of Table 3.

#### Table 3

Discharge Temperature	<b>-40</b> ℃	<b>0</b> °C	<b>23</b> ±2℃	<b>50</b> ℃	<b>72</b> ℃
Discharge to 2.0V 1mA	50%	60%	100%	95%	90%

## 4. Mechanical characteristics and Safety Test

Table 4

(Mechanical characteristics)

No.	Items	Test Method and Condition	Criteria
1 Vibration Test		Fixed the cell to vibration table and subjected to	No leakage
		vibration cycling that the frequency is to be varied at the rate of 1Hz per minute between 10Hz an 55Hz,	no weight loss
			no short circuit
	axes.	No fire	
		No explosion,	
Altitude Simulation 2 Test			No leakage
	Altitude	The batteries should be stored at the pressure of	no weight loss
		11.6 KPa or less for at least six hours at	no short circuit
	ambient temperature $23 \pm 2$ °C.	No fire	
			No explosion



No.	Items	Test Method and Condition	Criteria
3	Short circuit	Each test sample battery, in turn, is to be short- circuited by connecting the (+) and (-) terminals of the battery with a Cu wire having a maximum resistance load of 0.1 $\Omega$ . Tests are to be conducted at room temperature( $23 \pm 2^{\circ}$ C).	No explosion No fire
4	Impact	A 56mm diameter bar is inlayed into the bottom of a 10kg weight. And the weight is to be dropped from a height of 1m onto a sample battery and then the bar will be across the center of the sample.	No leakage no short circuit No fire No explosion,
5	Free fall	Fresh batteries; Height: 1.2m, 6 times; Each direction two times; Concrete floor	No leakage no short circuit No fire No explosion,
6	Over discharge	Complete discharged battery, connected in series with two fresh cells and resistor load 30hm for 36h or cell temperature returned to ambient.	No explosion No fire



#### 5. Environment requirement

The product does not contain controlled substances of level 1.

#### 6. Producing standard and certification

The batteries are produced according with the IEC standard.

#### 7. Transportation

- The Batteries should be stored away from solarization, fire, rain, water, and never put together with corrosive during transportation.

- -Vibration and shock during transportation and load-and-unload should be restrict to a minimum level.
- -The height should not exceed 1.5m for cardboard packages.
- The batteries if transported by sea should be stored away from ship engines during prolonged transit, and not left for long periods in unventilated environment during summer.

#### 8. Information for safety

## ! Danger

- -Do not overheat batteries or dispose of batteries in fire.
- -Do not put batteries together with metalwork such as necklace, coins, etc. in one bag, or store them together.
- -Do not short-circuit batteries.
- -Do not inset batteries in reverse. Observe the + and markings on battery and equipment.
- -Do not disassemble batteries.
- -Do not weld or solder directly to batteries.
- -Do not use deformed batteries or batteries with serious scar.
- -Do not throw the battery onto the ground or wall.
- Read the guide carefully before using batteries. Unsuitable operation will make batteries overheat, fire, explode, destroy or reduce battery's capacity.



### ! Warning

- -Do not place the battery in heater, washer or high-pressure container.
- -Do not use the battery together with different kind of or different type of battery.

- Stop using when the battery become heat, emit smell or appear other abnormality during use, or storing.

#### -Do not recharge the battery.

- -Do not force-discharge the battery.
- -Keep away from the battery when the battery is leakage or emit abnormal smell.
- -Wash yourself quickly when the electrolyte infiltrate to your skin or clothes.
- -Wash your eyes by clean water quickly and go to hospital for further check if the electrolyte infiltrate to your eyes.
- —If two or more batteries are to be connected in a series and / or placed in a parallel arrangement, protective circuit must be connected with batteries, so that to avoid force-discharging or recharging.

#### ! Caution

-Read the guide carefully and pay attention to the guide when using the battery.



- -Read the instrument guide carefully before installing the battery or uninstalling the battery from the instrument.
- -Take out of the battery from the instrument if the on-load voltage of battery is less than 2V.
- Take out the battery and keep it under the condition of normal temperature and low humidity when the battery is not used in a long time.
- -Clean the battery with dry cloth before use if the connection of the battery is dirty.

#### 9. Storage

-The batteries should be stored at  $10^{\circ}C \sim 25^{\circ}C$  (never exceed  $30^{\circ}C$ ),  $45\% \sim 75\%$ RH.

- The batteries should not be stored next to heat sources nor in direct sunlight. The storage area should be clean, cool, dry, ventilated and weatherproof.

-The height to which batteries may be stacked is clearly dependent on the strength of the packaging.

As a general rule, this height should not exceed 1.5m for cardboard packages nor 3m for wooden cases.

-Store and display batteries in their original package. The batteries may be short-circuited or damaged if been unpacked and stacked mussily.

#### 10. Declaration

-Please contact with Akyga Battery

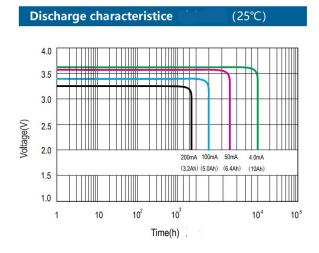
If you have any question with

this specification.

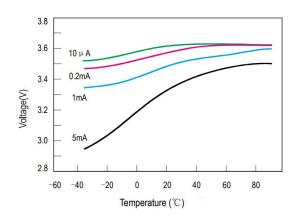
- AkygaBattery keep the right to change the specification.

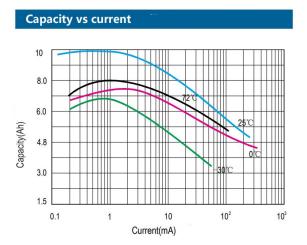
-Any other items which are not covered in this specification shall be agreed by both parties.





#### Voltage vs temperature





#### Storage characteristics

