LiSOCL$_2$ Battery Specification

ER14505-1S3P

Capacity: 8100mAh

1 Scope

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

2 Product Specification

Table 1

No.	Item		Specification
1	Voltage		3.6 V
2	Capacity (Discharge to 2.0V @3mA/Upright)	Standard Cap	8100 mAh
3	Max Discharge current	Continuity	200 mA
		Plus	400 mA
4	Termination Vol.		2.0 V
5	CCV@72Ω		3.25 V
6	Weight		Approx.60g
7	Work Temp		-20 ℃ to 85 ℃
8	Storage Temp		10 ℃ to 25 ℃
9	Storage Humidity		≤65%
10	Guarantee Period		10

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±2℃ 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℃ 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 10kΩ/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 0.01Ω.

3.3.Standard Discharge ：Cells shall be discharged at a constant current of 3mA to 2.0 volts @ 23±2℃

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 2.0V3mA	Discharge Capacity ⩾8100mAh
（3）Quickly Discharge Capacity	Discharge to 2.0V 50mA	Discharge Capacity ⩾4050mAh

3.6 Temperature Dependence of discharge capacity

Cells shall be discharged per 3.3 and discharged @3mA 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±2 ℃ and the percentage shall be calculated. Each cell shall meet or exceed the requirements of Table 3.

Table 3

Discharge Temperature	-40℃	0℃	23±2℃	50℃	72℃
Discharge to 2.0V 3mA	50%	80%	100%	95%	90%

4. Mechanical characteristics and Safety Test

Table 4 表 (Mechanical characteristics)

No.	Items	Test Method and Condition	Criteria
1	Vibration Test	Fixed the cell to vibration table and subjected to vibration cycling that the frequency is to be varied at the rate of 1Hz per minute between 10Hz an 55Hz, the excursion of the vibration is 1.6mm. The cell shall be vibrated for 30 minutes per axis of XYZ axes.	No leakage no weight loss no short circuit No fire No explosion,
2	Altitude Simulation Test	The batteries should be stored at the pressure of 11.6 KPa or less for at least six hours at ambient temperature 23±2 ℃.	No leakage no weight loss no short circuit No fire No explosion,

Table 4 (Mechanical characteristics)

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 Ω .Tests are to be conducted at room temperature(23±2℃).	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 3ohm 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. P**roducing 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. I

! 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.

akyga battery

! **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℃～25℃（never exceed 30℃）, 45%~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.

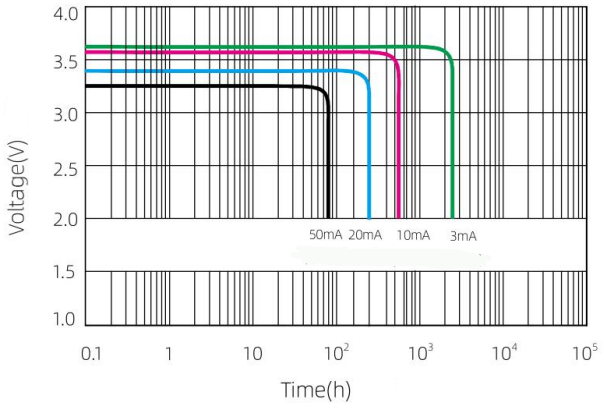
10. Declaration ：

－Please contact with Akyga Battery If you have any question with this specification.

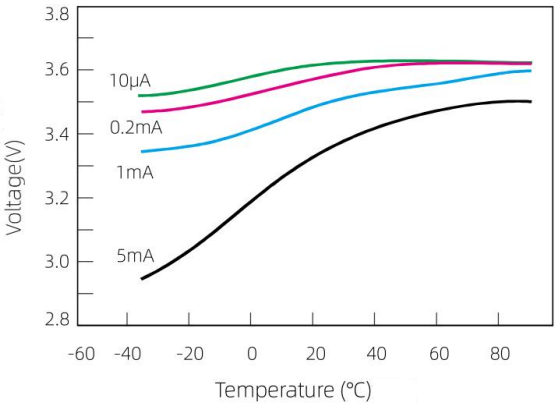
－ Akyga Battery keep the right to change the specification.

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

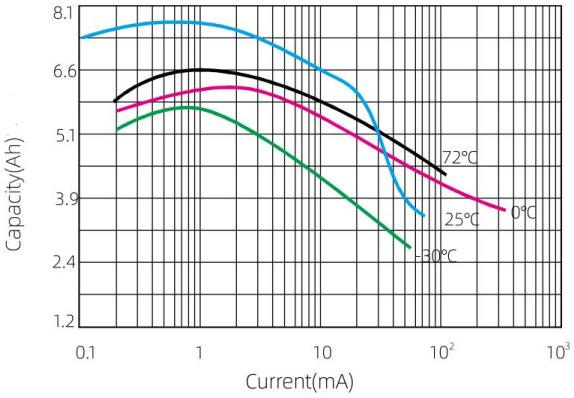
Discharge characteristice (25°C)



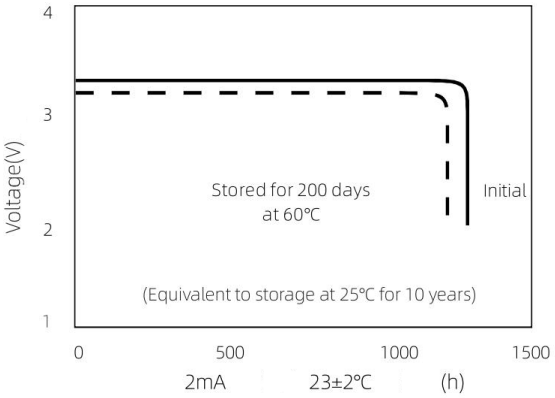
Voltage vs temperature



Capacity vs current



Storage characteristics



11. Battery Dimension