

# **Specification Approval Sheet**

Name: ALKALINE ZINC MANGANESE DIOXIDE BATTERY

Model: AKYGA AA LR6

SPEC: 1.5V / 2450mAh

**Number: AA LR6** 

### **Specification Modification Records**

Modification Time	Descriptions	Issued Date	Approved By
	Release 1	2023-04-25	

Content

Any copies are invalid without our company's approval



### Specification Approval sheet

### 1. Scope

This specification defines the technical requirements for LR6-plus alkaline battery.

Cross References: ATC IEC JIS GB (CHINA)

LR6 LR6 AM-3 LR6

### 2. Purpose

To assure that any LR6 battery manufactured or procured by Akyga will meet or exceed our customers expectations.

### 3. Reference Document

IEC 60086-1:2000 ···Primary Batteries-Part1:General

IEC 60086-2:2000 ···Primary Batteries-Part2:Physical and Electrical Specification

GB/T 7112-1998 ··· Zinc-Manganese Dry Batteries of R03,R1,R6,R14and R20

Alkaline Zinc-Manganese Dry Batteries of

LR03,LR1,LR6,LR14and LR20

#### 4. Chemical System

Alkaline Zinc-Manganese Dioxide (KOH Electrolyte), MERCURY AND CADMIUM ARE NOT ADDED IN THE BATTERY

5. Nominal Voltage: 1.5volt6. Weight: approximate 23.0g

7. Jacket: Foil Label8. Nominal Capacity

2450mah (Conditions: 43 Ω discharge 4hours per day at 20±2°C, end point voltage 0.9v)

#### 9. Electrical Characteristics

	Off-load	On-load	Short	
	Voltage	Voltage	circuit	Acceptance Standard
	(v)	(v)	current	
Initialwithin30 day	1.58	1.50	8.0	GB2828 commonly I sampling
After 12months	1.55	1.45	6.0	AQL=0.4

conditions:  $3.9 \Omega \pm 0.5\%$  load resistance, measuring time 0.3 seconds, temperature at  $20\pm 2^{\circ}$ C, the hairspring type ampere meter with  $\pm 0.5\%$  accuracy (0.5level) shall be used.

### **10. Service Time** (condition: test temp. 20±2°C, tested within 30 days after delivery)

Dis	charge Condi	tion		Average Minimum Discharge Time		
Discharge load	Daily discharge time	End Point Voltage (v)	IEC Standard	Initial within30day	After 12mth at 20±2°C	
$43\Omega$	4h	0.9	60h	88h	81.5h	
3.9Ω	1h	0.8	4.0h	340minutes	300minutes	
10Ω	1h	0.9	11.0h	19h	17.5h	
1.8Ω	15sec/min	0.9	320cycles	600cycles	540cycles	
3.9Ω	24h	0.9		340minutes	320minutes	

Satisfaction standard: 9 pieces of battery will be tested for each discharging standard.

The result of the average discharging time from each discharging standard shall be equal to or more than the average minimum time requirement.



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11. Electrolyte Leakage Proof Characteristics

Item	Condition	Period	Characteristics	Acceptance standard
Over-discharge leakage test	10Ω continuous discharge at temp. 20±2°C, Relative Humidity:60±15%RH	48hours	There shall be no deformation	N=9 Ac=0 Re=1
High temp. storage leakage test	At temp. 45±2°C, Relative Humidity: Less than 65% RH	90days	exceeding the specified dimensions, nor leakage	N=40
	At temp.60±2°C Relative Humidity: 90±5%RH	20 days	recognized by human eye	Ac=1 Re=2

12. Safety Characteristics

12. Salety Characteristics						
Item	Condition	Period	Characteristics	Acceptance standard		
Short circuit test characteristics	Temp.: 20±2℃	24hours		N=5 Ac=0 Re=1		
Abusive test characteristics	At temp. 20±2°C, short circuit 4 pieces of battery in series, one of the 4 battery has to be connected with its polarity reversed	24hours	There shall be no explosion * of battery	N=20 Ac=0 Re=1		

<sup>\*</sup> An instantaneous release wherein solid matter from any part of the battery is propelled to a distance greater than 25 cm away from the battery.

#### 13. Caution for Use

- (1) Since the battery is not manufactured for recharging, there are risks of electrolyte leakage or causing damage to the device if the battery is charged.
- (2) The battery shall be installed with its "+"and "-" in correct position.
- (3) Short-circuiting, heating, disposing of into fire and disassembling the battery are prohibited.
- (4) Avoid using old and new batteries together.

#### 14. Shelf Life

5 years after delivery under proper storage condition.

### 15. Discharge Curves

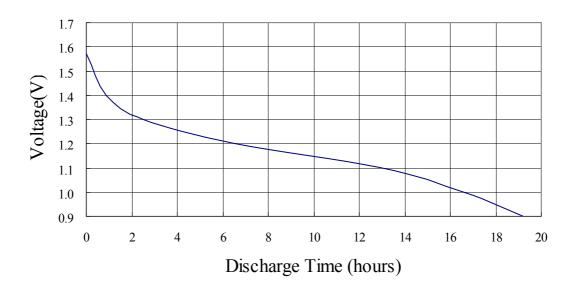
- a.  $10\Omega$ -24h/d  $10\Omega$ -1h/d(**Page 3**)
- b.  $43\Omega$ -4h/d 3.9Ω-1h/d(**Page 4**)

### 16. Expiry Period Marking:

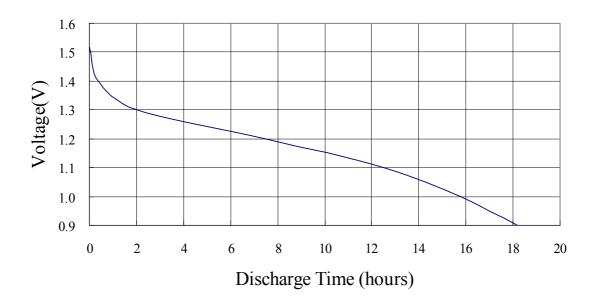
- a. Production date and shelf life 3 years marked on the finished cell.
- b. For private, can mark according to customer's requirements.
- 17. Battery Dimension(mm) Page 5
- 18. Battery Structure Page 5



## $10\,\Omega$ Continuous Discharge Curve

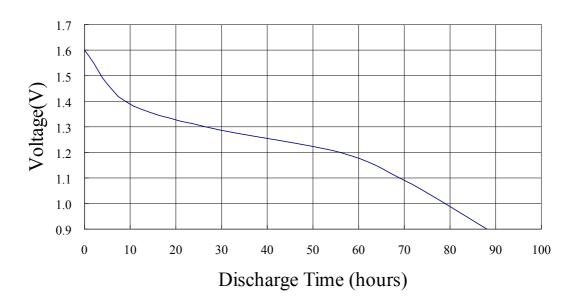


 $10~\Omega~1$ hour/day Discharge Curve





## $43 \Omega$ 4hour/day Discharge Curve



 $3.9\,\Omega$  1hour/day Discharge Curve





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