

# Product Specification

## 1. APPLICABILITY

This specification is applicable to "Cardio Cell" alkaline cell, LR03 (No mercury added).

## 2. GENERAL

### 2.1 Type designation

IEC LR03

JIS AM-4

ANSI AAA

### 2.2 chemical system

Zn/KOH-H<sub>2</sub>O/MnO<sub>2</sub>

### 2.3 Nominal voltage: 1.5 V

### 2.4 Weight: approximate 12g

### 2.5 Dimension(mm)

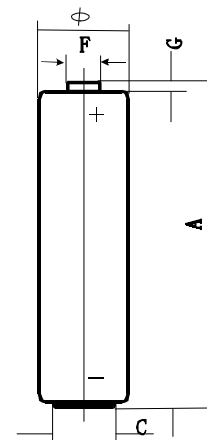
/	min	max
•	9.9	10.4
A	43.8	44.4
C	6.2	6.6
F	3.2	3.6
G	0.85	1.2

### 2.6 Heavy Metal Contents

Hg	Cd	Pb
<1ppm	<3ppm	<30ppm

### 2.7 capacity

approximate 1200mAh (75•,24h/d, 20•, e.v.:0.8V)



## 3. APPEARANCE

There shall be no dirt, scratch or deformation detrimental to practical service in appearance.

## 4. ELECTRICAL CHARACTERISTICS (3.9•, 0.3S, 20±2•)

/		OCV(V)	CCV(V)	S.C.(A) (reference)
Initial	Min	1.57	1.40	6.0
	Normal	1.60	1.45	8.0
Storage 1 year	Min	1.55	1.37	4.5
	Normal	1.57	1.40	6.0

Note: storage condition: 20±5°C, RH: 45%-75%

## 5. SERVICE OUTPUT

Load		20•	3.6•	5.1•	10•	43•
Test mode		24h/d	15s/min	4min/h,8h/d	1h/d	4h/d
end voltage		0.9V	0.9V	0.9V	0.9V	0.9V
Initial	MAD	17.2 h	560cycles	190min	420min	67 h
	Normal	18.3 h	630cycles	220min	480min	72.5h
Storage 1 year	MAD	16.2 h	480cycles	160min	360min	65 h
	Normal	17.2 h	560cycles	190min	420min	69h

Note: storage condition: 20±5°C, RH: 45%-75%

## 6. LEAKAGE RESISTANCE

(1) over discharge leakage test

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samples: 9pcs

test conditions:  $20 \pm 2$  °C, RH  $60 \pm 15\%$ , 20 • continuous discharge 48h

requirement: no visible leakage and overall height no higher 0.2mm than max height(44.5).

criterion: 0/9

## (2) high temperature leakage test

samples: 60pcs

test conditions: store 20 days under  $60 \pm 2$  °C & RH  $90 \pm 5\%$ , then store 4~24 h under  $20 \pm 2$  °C & RH  $60 \pm 15\%$ .

requirement: no visible leakage and overall height no higher 0.2mm than max height (44.5) .

## 7. SECURITY CHARACTERISTICS

### (1) short-circuit explosion-proof characteristics

samples: 10pcs

test conditions: 24h short-circuit under  $20 \pm 2$  °C, RH  $60 \pm 15\%$ .

requirement: negative terminal no departure from battery body.

criterion: 0/10

### (2) recharge explosion-proof characteristics

samples: 10pcs

test conditions:  $20 \pm 2$  °C,  $60 \pm 15\%$ , recharge 24h with 80mA current.

requirement: negative terminal no departure from battery body

criterion: 0/10

## 8. DISCHARGE CURVE(Reference)

20 • continuous • 3.6 • pulse • 10 • intermittent (encl.page.1)

## 9. EXPIRY PERIOD:

7 years

## 10. EXPIRY DATE MARKING:

(1) production date marked on the bottom plate of finished cells . for example: 2004-01 means produced on jan. , 2004. shelf life 3 years marked on bottom of sticker label.

(2) for private label, can mark according to customer's requirements.

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