

SHENZHEN THUMBCELLS CO., LTD.



THUMBCELLS

23A/12

TECHNICAL SPECIFICATION
FOR
ALKALINE MANGANESE DIOXIDE BUTTON CELL

PREPARED BY : LEE FA

APPROVED BY : SHAN JUNXIONG

DATE : 8. 18, 2006

SPEC. NO. : THUMBCELLS-23A-E

SHENZHEN THUMBCELLS CO., LTD.

RM813, TianJian Building, No.7, Business Newspaper Office Rd.,

Futian Dist, ShenZhen, China.

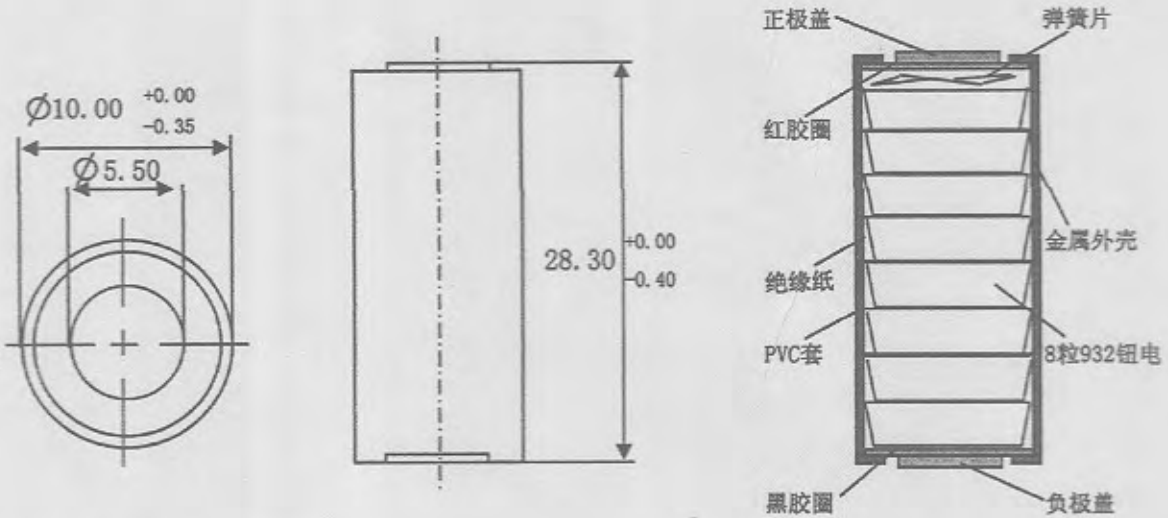
Tel: (86) 0755-81509623; 88853506 Fax (86) 0755-~~29984108~~ 29984108

E-mail: thumbcells@126.com <http://www.thumbcells.cn>

The Manufacturer reserves the right to modify product specification and data stated herein without prior notice.

A23 Battery

DIMENSIONS:



NOMINAL VOLTAGE : 12 VOLT

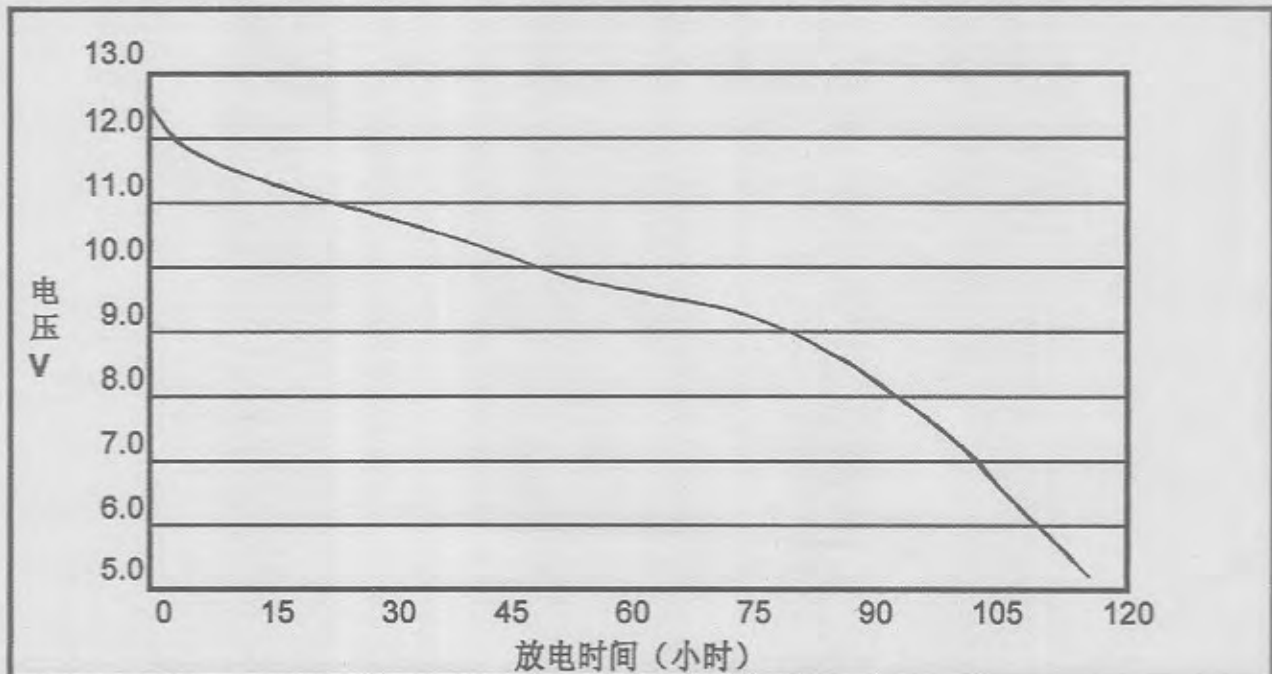
APPROX. SERVICE CAPACITY : 50 mAh

APPROX. WEIGHT : 8.1g

RATED AT 20,000 OHMS LOAD TESTED AT 21°C WITHIN 30 DAYS OF MANUFACTURE.

SYSTEM : ZIN/MANGANESE DIOXIDE

ESTIMATED AVERAGE HOURS SERVICE AT 21°C





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MSDS Report

Samples Name: button zinc manganese battery

Model: AG0, AG1, AG2, AG3, AG4, AG5, AG6, AG7, AG8, AG9, AG10, AG11, AG12, AG13, LR521, LR621, LR726, LR41, LR626, LR754, LR921, LR926, LR1120, LR936, LR1130, LR721, LR43, LR44, LR632, LR932, 23A, 27A, L736H, L736C, L1131H, L1131C, L1154H, L1154C, 625A, L521H, L621H, L726H, L626H, L754H, L921H, L926H, L1121H, L936H, L721H, L1142H

Client Name: shenzhenthumbcells co.ltd

Client Address: 161 building,the 2nd zone,Baoyuan Road. Xixiang Avenue,BaoAN District,Shenzhen City

Written by:

Daisy

Inspected by:

Willy

Approved by:

Jeanah

SHENZHEN AOV TESTING TECHNOLOGY CO.,LTD

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86-755-8600 8000



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Material Safety Data Sheet

Section 1 - Chemical Product and Company Identification

Product Name: button zinc manganese battery

Manufacture: /

Address: /

Tel: 0755-8885-3506

Emergency Telephone: 0755-8885-3506

Fax: 0755-29984108

Email: sales@thumbcells.com

Section 2 - Hazards Identification

Fatalness grade: In accordance with Directive 1999/45/EC, the sample belongs to dangerous goods.

Invasion route: Skin touch: No effect under routine handling and use

Eyes touch: No effect under routine handling and use

Inhalation: No effect under routine handling and use

Ingestion: No effect under routine handling and use

Health hazards: These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrically abused. Contact of electrolyte and extruded lithium with skin and eyes should be avoided.

Environment hazards:

Burn & burst danger: A shorted lithium battery can cause thermal and chemical burns upon contact with the skin. It may be a reproductive hazard.

Section 3 -Composition/Information on Ingredient

Pure

Admixture

Composition:

Chemical Name	In % By Weight	CAS No.
Manganese dioxide	30	1313-13-9
Graphite	3	7782-42-5
Zinc powder	2	7440-66-6
Potassium hydroxide	8	1310-58-3;71769-53-4
Metal casing	57	/

Section 4 - First Aid Measures

Skin touch: Remove contaminated clothes and rinse the skin with plenty of water.

Eyes touch: Lifting the upper and lower eyelids, flush the eyes with plenty of water or saline water. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. Keep the respiratory tract smooth. Use oxygen if available. Get medical aid.

Ingestion: Drink sufficient hot water and induce vomiting. Get medical aid.

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Section 5 - Fire Fighting Measures

Danger characteristic: It is apt to flame under the condition of fire, when the electrolyte is extruded

Extinguishing Media: Carbon monoxide, carbon dioxide

Fire-Fighting method & media: The staff must equipped with filtermask(full mask) or isolated breathing apparatus. The staff must wear the clothes which can defence the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Sparying water on the containers in the fireplace to keep them cool until finish extinguishment. If the containers in the fireplace whose color have changed, or can hear the voice from the safety relief equipment, the person must evacuate at once. Media: foam, powder, Co₂, sandy clay.

Section 6 -Accidental Release Measures

Emergency treatment: If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate
Waste Disposal Method. It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.

Section 7 - Handling and Storage

Handling: The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container. Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.

Storage: Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperature should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

Section 8 - Exposure Controls, Personal Protection

Maximum admissible concentration: No standard yet

Monitoring Method: /

Engineering Control: To supply with sufficient partial air exhaust.

Respiratory Protection: Wear self-contained breathing filtermask(full mask) if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.

Eyes Protection: Have been mentioned in the respiratory protection.

Body Protection: Wear rubberized fabric antigas clothes.

Hands Protection: Wear rubber gloves.

Other Protections: No smoking, dining and drinking water in the workplace. Keep good habit of hygiene.

Section 9 - Physical and Chemical Properties

Flash Point: /

Appearance: silvery button battery

Boiling Point: /



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Proportion: /

Acid Value: /

PH Value: /

Permission of solvent inhalation: /

Solubility: Don't soluble in water

Section 10 - Stability and Reactivity

Stability: Stable under normal temperature.

Distribution of Ban: strong oxidizer and strong acid

Conditions to Avoid: Heating, mechanical abuse and electrical abuse.

Hazardous Polymerization: If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.

Hazardous Decomposition Products: /

Section 11 - Toxicological Information

Acute Toxicity: /

Sub-acute and Chronic Toxicity: /

Irritation: /

Sensitization: /

Mutagenicity: /

Carcinogenicity: /

Others: /

Section 12 - Ecological Information

Eco-toxicity: Ecological inert: /

Biodegradable:

Non-biodegradable: /

Bioconcentration or biological accumulation: /

Other harmful effects: /

Section 13 - Disposal Considerations

Nature of waste: /

Waste disposal methods: Refer to National or Local regulations before handling.

Attention abandoned: /

Section 14 - Transport Information

Number of dangerous goods: /

UN Number: /

Packaging Mark: /

Packaging Method: /



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Transport Attentions: More information concerning shipping, testing. More information concerning shipping, testing, marking and packaging can be obtained from Labelmaster at <http://www.labelmaster.com>.

Separate Li-Polymer rechargeable batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport.

Section 15 - Regulatory Information

Regulatory Information: <<Dangerous Goods Regulation>>(IATA)

<<International Maritime Dangerous Good

Law Information

In accordance with all Federal, State and Local laws.

Section 16 - Additional Information

References: /

Guidance departments: /

Data audit unit: /

Laws Help: /

Other Information: The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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