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Edition: 10

PRODUCT SAFETY DATA SHEET

FOR

CARBON ZINC BATTERIES

(R03, R6, R14 & R20)

T.G. Battery Co. (China) Limited

GM	QA		
Approved	Verified	Checked	Drafted
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Please follow the warnings and precautions listed below to avoid possible hazards from the improper uses of Carbon Zinc Batteries and to ensure correct and safe use of them.

The following notes should be put in an appropriate and effective location in each end-use product and its instruction manual.

Failure to observe the following instructions may cause battery leakage, heat generation, explosion, or appliance trouble.

Section 1 – Manufacturer Information

Product Name: Carbon Zinc Batteries	
(1) R03 AAA Size (2) R6 AA Size (3) R14 C Size (4) R20 D Size	
Company: T.G. Battery Co. (China) Limited	Telephone Number: 001-86-752-5751268
Address: Gu Tang Ao Industrial District, Huizhou City, Guangdong Province, PRC	Fax Number: 001-86-752-5751269

Section 2 – Hazards Identification

Don't directly connect (+) and (-) of a battery to make a short circuit. Don't disassemble, heat or put the battery into fire.

Charging Carbon Zinc Battery may cause electrolyte leakage or damage, because this type of battery is not designed as rechargeable battery.

Improper handling of the battery could lead to distortion, leakage, overheating, or explosion and cause human injury or equipment trouble. Especially touch with liquid leaked out of battery could cause injury like a loss of eyesight. Please strictly observe safety instructions.

Section 3 – Composition/Information on Ingredients

Ingredient	CAS №	EINECS №	Content (w/w)			
			R03	R6	R14	R20
Manganese Dioxide	1313-13-9	215-202-6	23~28%	17~27%	17~29.5%	17.5~33%
Zinc	7440-66-6	231-175-3	34~38%	20~23%	17~20%	17~22%
Zinc Chloride	7646-85-7	231-592-0	4.0~6.0%	4.3~6.8%	6.0~8.0%	6.0~8.8%
Ammonium Chloride	12125-02-9	235-186-4	0.2~0.4%	0.2~0.7%	0.6~0.8%	0.3~0.9%
Acetylene Black	1333-86-4	215-609-9	3.7~4.7%	3.4~4.4%	4.0~5.0%	4.4~5.9%
Lead	7439-92-1	231-100-4	< 1500ppm	< 1000 ppm	< 1000ppm	< 1000ppm
Cadmium	7440-43-9	231-152-8	< 10 ppm	< 10 ppm	< 10 ppm	< 10 ppm
Mercury	7439-97-6	231-106-7	< 1 ppm	< 1 ppm	< 1 ppm	< 1 ppm

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Section 4 – First Aid Measures

None unless internal materials exposure. If contents are leaked out, observe following instructions

- Skin If liquid solution from the battery comes out and contact with skin or clothes, flush out with clean water.
- Eyes If any liquid from the battery comes out and contact with eyes, flush out with clean water immediately and consult a doctor.
- Licking If any liquid from the battery is licked, gargle immediately and consult a doctor.
- Ingestion If swallowing a battery, consult a physician immediately.
If contents come into mouth, immediately rinse by plenty of water and consult a physician.

Section 5 – Fire Fighting Measures

Extinguishing Media Any class of extinguisher is effective.

Section 6 – Accidental Release Measures

NA

Section 7 – Handling and Storage

1. Handling

Never swallow. Never touch the liquid leaked out of battery. Never short-circuit the battery. Never charge. Never expose to open flame. Never heat. Never disassemble or deform.

- 1) Keep the battery out of reach of babies or small children.
- 2) Do not install the battery in the appliance in reversed positive (+) and negative (-) terminal connection.
- 3) Do not use the batteries mixed with new battery, old battery or different type battery.
- 4) Take out used batteries promptly from the appliance.
- 5) Do not expose the battery to rain or moisture.
- 6) When not in use for a long time, take out the battery from the appliance and store in a cool dry place.
- 7) Do not drop, give a strong shock or deform the battery.
- 8) Do not solder the battery directly.

2. Storage

Do not leave the batteries in an atmosphere over the temperature of 30°C or over the humidity of 80% for a long time. Never let the battery contact with water.



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Section 8 – Exposure Controls / Personal Protection

Respiratory Protection NA

NA=Not Applicable

Ventilation	Local Exhaust	NA
	Mechanical	NA
	Special	NA
	Other	NA

Eye Protection NA

Protective Gloves NA

Other protective clothing NA

Section 9 – Physical/Chemical Characteristics

Form cylindrical

Boil point NA

Melting point NA

Kindling point NA

Section 10 – Stability and Reactivity

Stability Stable

Condition to avoid See section 7.

Section 11 – Toxicological Information

Nontoxic, because the chemical mixture from battery is sealed by the metal container, and then packed by the insulated pipe.

Section 12 – Ecological Information

NA

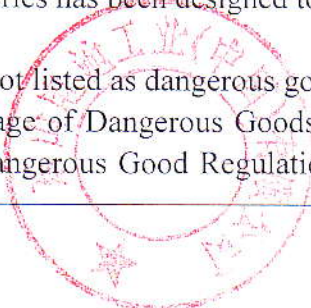
Section 13 – Disposal Considerations

The battery may be regulated by national or local laws/ regulations. Please follow the instructions of proper regulation. As electric capacity is left in a discarded battery and it comes into contact with other metals, it could lead to distortion, leakage, overheating, or explosion. In case of storage or throw away the battery, insulate a terminal of the battery with a tape.

Section 14 – Transportation Information

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in “strong outer packaging” that prevents spillage of contents. All original packaging for Carbon Zinc Batteries has been designed to be compliant with these regulatory concerns.

Carbon Zinc Batteries (sometimes referred to as “Dry cell” batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Good Regulations,



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IATA Dangerous Goods Regulations 58th edition, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions

Regulatory Body	Special Provisions
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Provision 130
IATA	A123
ICAO	Not regulated

All Carbon Zinc Batteries are packed in such a way to prevent short circuits or the generation dangerous quantities of heat and meet the special provisions listed above. In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words "not restricted" and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

Section 15 – Regulatory Information

National or local laws/ regulations applied to battery.

Section 16 – Other Information

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Department: Quality Assurance Department

Edited by: Zhijin Huang

Remark: Contents of this manual have been edited based on data, information, etc. that TGBC could acquire when editing the manual, so the manual may be revised by new information, if any. Contents of the above data assume normal handling of cells, and are provided as referential information. Therefore, the manual provides no warranties. The customer is requested to use batteries on the basis of appropriate measures established depending on individual conditions, application and operation.

