# SAFETY DATA SHEET

In Accordance with OSHA Standard 1910.1200 App D (USA)

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**<br>(1) R03 AAA Size (2) R6 AA Size (3) R14 C Size (4) R20 D Size | |
|---|---|
| Company:<br>Hitachi Maxell Global Limited | Telephone Number:<br>852-2730-9243 |
| Address:<br>Unit Nos 03B-06, 13/Fl., No 909 Cheung Sha Wan Road, Cheung Sha Wan, Kowloon, Hong Kong. | Fax Number:<br>852-2735-6250 |
| | Date of Preparation:<br>1-Jan-2015 |

## 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 | 1333-86-4 | 215-609-9 | 3.7～4.7% | 3.4～4.4% | 4.0～5.0% | 4.4～5.9% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Black | | | | | | |
| 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 |

## 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℃ or over the humidity of 80% for a long time. Never let the battery contact with water.

## 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 Maxell 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, IATA Dangerous Goods Regulations 56th 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 (56th Edition) |
| ICAO | Not regulated |

All Maxell 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.

(a) UN number: N/A

(b) UN proper shipping name: N/A

(c) Transport hazard class(es) : N/A

(d) Packing group, if applicable: N/A

(e) Environmental hazards (e.g., Marine pollutant (Yes/No)) No.

(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

The product can be treated as ordinary goods in transportation;
Products in bulk shall be packed in inner packaging in such a manner that can prevent movement or short-circuit effectively.

(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Avoid high-temperature, high-humidity condition.

## Section 15 – Regulatory Information

National or local laws/ regulations applied to battery.

## Section 16 – Other Information

Remark: Contents of this manual have been edited based on data, information, etc. that Maxell 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.