Document Ref. No. DGTQ/BAT-R6-P

# MATERIAL SAFETY DATA SHEET

## 1. Chemical Product and Company Identification

Product Name: Carbon Zinc Battery TIANQIU R6P 1.5V
Manufacturer: DONGGUAN TIANQIU ENTERPRISE CO., LTD
Address: TianQiu Industrial Park, Xinji Industrial Zone, Machong Town, Dongguan, GuangDong, P.R.China
Telephone: 0769-81210202

## 2. Composition/Information on Ingredients

| Hazardous Components | Approx wt% | CAS # | EC # |
|---|---|---|---|
| Zinc (Zn) | 32.65 | 7440-66-6 | 231-175-3 |
| Manganese Dioxide ($MnO_2$) | 25.05 | 1313-13-9 | 215-202-6 |
| Zinc Chloride (ZnCl2) | 6.86 | 7646-85-7 | 231-592-0 |
| Carbon Black | 5.04 | 1333-86-4 | 215-609-9 |
| Graphite（C） | 6.7 | 7782-42-5 | 231-955-3 |
| Ammonium chloride（NH4CL） | 1.12 | 12125-02-9 | 235-186-4 |
| Iron（Fe） | 1.3 | 7439-89-6 | 231-096-4 |
| Polybutene | 0.54 | 9003-28-5 | 618-361-3 |
| POLYISOPRENE | 0.18 | 9003-31-0 | 618-362-9 |
| Phenolic epoxy resin | 0.18 | 61788-97-4 | 612-377-4 |
| Water ($H_2O$) | 15.6 | 7732-18-5 | 231-791-2 |
| PVC (Chloroethylene, polymer) | 2.65 | 9002-86-2 | 618-338-8 |
| Starch，phosphate | 0.19 | 11120-02-8 | 601-054-3 |
| Paper | 1.9 | ---- | ---- |
| Mercury (Hg) | < 0.00001 | 7439-97-6 | 231-106-7 |
| Cadmium (Cd) | < 0.001 | 7440-43-9 | 231-152-8 |
| Lead (Pb) | 0.032 | 7439-92-1 | 231-100-4 |

## 3. Hazards Identification

Routes of Entry: Not applicable under normal conditions
Health Hazards: In case of leakage, will be cause itchy and/or chemical burns when direct contact with electrolyte

Hazards to Environment: Not applicable
Fire and Explosion Hazards: Not applicable

## 4. First-aid Measures

Skin Contact: If exposed to a leaking battery, remove contaminated clothing. Wash exposed areas with plenty of water and soap. If irritation occurs, consult a physician.
Eyes Contact: If a battery is leakage and materials contact eyes, flush immediately with running water for at least 15 minutes. Consult an ophthalmologist at once.
Inhalation: If vapor from vented or leaked batteries are inhalation, move to fresh air and get medical attention.
Ingestion: Get immediately medical attention, do not induce vomiting or give a liquid to unconscious person.

## 5. Fire Fighting Measures

Hazard Characteristic: Not available
Hazards Expose to Combustion Products: In case of fire, carbon dioxide, carbon monoxide and other toxic organic substances will be generated. Do not inhale fumes and smoke.
Extinguishing Media: In case of fire, you can use any class of fire extinguisher.
Special Fire Fighting Procedures: Fire fighters should wear self-contained breathing apparatus.

## 6. Accidental Release Measures

Precautions: Avoid direct contact with the leaking or ruptured batteries. Avoid short circuit.
Methods for Clean Up: Care for well-ventilated conditions. Recycle or dispose of the materials in an appropriate way.

## 7. Handling and Storage

Precaution: Handing and transfer the products carefully, make sure the packing always in good condition. Damaged packing may cause batteries contact together, in this case batteries may short circuit or improperly connected, it cause batteries venting, leaking or exploding.
Storage: Store in a dry, cool and well-ventilated area.

## 8. Exposure Control/Personal Protection

Exposition/Technical Measures: Atmospheric vapor concentrations must be minimized by adequate ventilation.
Protection of Hands, Eyes, and Skin: No required under normal use conditions. When handling leaking batteries, use gloves and wear safety glasses to protect hands, eyes and skin.
General Safety and Hygiene Measures: Use only as directed.

## 9. Physical and Chemical Properties

Physical State and Appearance: Cylindrical
Odor: Odorless
Melting Point (°C): N/A
Boiling Point (°C): N/A
Vapor Pressure (kPa): N/A
Critical Temperature (°C): N/A
Partition Coefficient: N/A
Ignition Temperature (°C): N/A
Solubility in Water: N/A
pH: N/A
Specific Gravity ($H_2O$=1): N/A
Vapor Density (Air=1): N/A
Heat of Combustion (kJ/mol): N/A
Critical Pressure (MPa): N/A
Flash Point (°C): N/A
Explosion Limit % (V/V): N/A
Solubility in Other Solvents: N/A

## 10. Stability and Reactivity

Stability: Stable
Incompatibility: None
Condition to Avoid: Avoid shorting, mechanical & thermal abuse
Hazardous Polymerization: Will not occur
Hazardous Decomposition: None

## 11. Toxicological Information

Note: Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.
Toxicity to Animals: Not applicable
Chronic Effects on Human: Not applicable

## 12. Ecological Information

This product has not been tested for environmental effects.

## 13. Disposal Consideration

Dispose in accordance with Federal, States and local regulations

## 14. Transport 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 TIANQIU 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 IATA Dangerous Goods Regulations, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations. All TIANQIU 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.

| Regulatory Body | Is regulate? |
|---|---|
| ADR | Not regulate |
| IMDG | Not regulate |
| UN | Not regulate |
| US DOT | Not regulate |
| IATA | SP A123 |
| ICAO | Not regulate |

## 15. Regulatory Information

Special requirement be according to the local regulators.

## 16. Other information

Do not heat or dispose of in fire. Do not recharge or disassemble the battery.

**Notice to reader:**

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