



# PAK KO BATTERIES FACTORY LIMITED



Unit 11, 9/F., Block A, Hoi Luen Ind. Ctr., No. 55 Hoi Yuen Rd., Kwun Tong, Kln., H.K.  
Tel.: (852) 2345-5245 Fax.: (852) 2797-9591 E-mail: pakko@pakkobatteries.com  
<http://www.pakkobatteries.com>

## SAFETY DATA SHEET

**PRODUCT NAME:** Mercury Free Carbon Zinc Battery Series

**Model No:** R6 R03 R14 R20 6F22

**Volts:** 1.5 / cell

**Document Number:** PAKKO2017Rseries

Batteries are articles as defined under the GHS and exempt from GHS classification criteria (Section 1.3.2.1.1 of the GHS). The information and recommendations set forth herein are made in good faith, for information only, and are believed to be accurate as of the date of preparation.

### SECTION 1 - MANUFACTURER INFORMATION

Pak Ko Batteries Factory Limited  
Unit 11, 9/F., Block A, Hoi Luen Industrial Centre,  
No.55, Hoi Yuen Road, Kwun Tong, Kowloon,  
Hong Kong.

Telephone Number for Information: 852-23455245

Date Prepared: June 2017

### SECTION 2 - HAZARDS IDENTIFICATION

**GHS Classification:** N/A

**Signal Word:** N/A

**Hazard Classification:** N/A

Under normal conditions of use, the battery is hermetically sealed.

**Ingestion:** Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

**Inhalation:** Contents of an open battery can cause respiratory irritation.

**Skin Contact:** Contents of an open battery can cause skin irritation and/or chemical burns.

**Eye Contact:** Contents of an open battery can cause severe irritation and chemical burns.

### SECTION 3 - INGREDIENTS

**IMPORTANT NOTE:** The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	%/wt.
Carbon Black (CAS# 1333-86-4)	3.5 mg/m <sup>3</sup> TWA (as carbon black)	3.5 mg/m <sup>3</sup> TWA (as carbon black)	5
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m <sup>3</sup> Ceiling (as Mn)	0.2 mg/m <sup>3</sup> TWA (as Mn)	31
Ammonium Chloride (CAS# 12125-02-9)	None established	10 mg/m <sup>3</sup> TWA (fume) 20 mg/m <sup>3</sup> STEL (fume)	1



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Zinc (CAS# 7440-66-6)	15 mg/m <sup>3</sup> TWA Particulates not otherwise regulated (total dust) 5 mg/m <sup>3</sup> TWA Particulates not otherwise regulated (respirable fraction)	10 mg/m <sup>3</sup> TWA Particulates not otherwise classified (inhalable particulate) 3 mg/m <sup>3</sup> TWA Particulates not otherwise classified (respirable particulate)	33
Zinc Chloride (CAS# 7646-85-7)	1 mg/m <sup>3</sup> TWA (fume)	1 mg/m <sup>3</sup> TWA (fume) 2 mg/m <sup>3</sup> STEL (fume)	6
Iron (CAS# 7439-89-6)	None established	None established	24

## SECTION 4 – FIRST AID MEASURES

**Ingestion:** Do not induce vomiting or give food or drink. Seek medical attention immediately.

**Inhalation:** Provide fresh air and seek medical attention.

**Skin Contact:** Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

**Eye Contact:** Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

## SECTION 5 - FIRE FIGHTING MEASURES

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

To cleanup leaking batteries:

**Ventilation Requirements:** Room ventilation may be required in areas where there are open or leaking batteries.

**Eye Protection:** Wear safety glasses with side shields if handling an open or leaking battery.

**Gloves:** Use neoprene or natural rubber gloves if handling an open or leaking battery.

Battery materials should be collected in a leak-proof container.

## SECTION 7 - HANDLING AND STORAGE

**Storage:** Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.

**Handling:** Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices.

If soldering or welding to the battery is required, consult your battery manufacturer representative for proper precautions to prevent seal damage or short circuit.

**Charging:** This battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

**WARNING:** do not install backwards, charge, put in fire, or mix with other battery types. May explode or leak causing injury. **Replace all batteries at the same time.**



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## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

**Ventilation Requirements:** Not necessary under normal conditions.

**Respiratory Protection:** Not necessary under normal conditions.

**Eye Protection:** Not necessary under normal conditions.

**Gloves:** Not necessary under normal conditions.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.):	Solid object
Upper Explosive Limits:	Not applicable for an Article
Lower Explosive Limits	Not applicable for an Article
Odor	No odor
Vapor Pressure (mm Hg @ 25°C)	Not applicable for an Article
Odor Threshold	No odor
Vapor Density (Air = 1)	Not applicable for an Article
pH	Not applicable for an Article
Density (g/cm <sup>3</sup> )	2.0-3.0
Melting point/Freezing Point	Not applicable for an Article
Solubility in Water (% by weight)	Not applicable for an Article
Boiling Point @ 760 mm Hg (°C)	Not applicable for an Article
Flash Point	Not applicable for an Article
Evaporation Rate (Butyl Acetate = 1)	Not applicable for an Article
Flammability	Not applicable for an Article
Partition Coefficient	Not applicable for an Article
Auto-ignition Temperature	Not applicable for an Article
Decomposition Temperature	Not applicable for an Article



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Viscosity	Not applicable for an Article
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## SECTION 10 – STABILITY AND REACTIVITY

Zinc manganese dioxide batteries do not meet any of the criteria established in 40 CFR 261.2 for reactivity.

## SECTION 11 – TOXICOLOGICAL INFORMATION

Under normal conditions of use, zinc manganese dioxide batteries are non-toxic.

## SECTION 12 – ECOLOGICAL INFORMATION

Issues such as ecotoxicity, persistence and bioaccumulation are not applicable for articles.

## SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable federal, state and local regulations. Appropriate disposal technologies include incineration and land filling

## SECTION 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 zinc manganese dioxide batteries has been designed to be compliant with these regulatory concerns.

Zinc manganese dioxide 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, 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 zinc manganese dioxide 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.



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### SECTION 15 - REGULATORY INFORMATION

Zinc manganese dioxide batteries are not classified as dangerous goods by the US Department of Transportation or the major international regulatory bodies and are therefore not regulated.

SARA/TITLE III - As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.

### SECTION 16 - OTHER INFORMATION

None.

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