



MATERIAL SAFETY DATA SHEET

Zhongyin Ningbo Battery Co., Ltd.

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Section I —Product Identification

Product Name: Pairdeer R03 Battery.

Nominal Voltage: 1.5V

Chemical system: Zinc/ Manganese Dioxide

Designed for recharge:

Yes__No✓

Section II —Hazardous Ingredients

The battery is not dangerous to human or environment. Cadmium, Lead, and mercury or other dangerous chemicals are not included in the battery.

Hazardous Components:

Description:	Approximate % of total weight	
Manganese dioxide:	23.7	Wt%
Zinc	35.4	Wt%
Mercury :	<0.0001	Wt%
Lead:	<0.4	Wt%
Cadmium :	<0.002	Wt%
Ammonium chloride (NH4Cl) and Zinc chloride (ZnCl2)mixture solution	19.8	Wt%

Section III - Physical / Chemical Characteristics

Boiling Point N.A.	Specific Gravity (H ₂ O=1) N.A.
Vapor Pressure (mm Hg) N.A.	Melting Point N.A.
Vapor Density (AIR=1) N.A.	Evaporation Rate (Butyl Acetate=1) N.A.
Solubility in Water N.A.	Appearance and Odor Cylinder and odorless.



Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
N.A.	N.A.	N.A.	N.A.

Extinguishing Media
N.A.

Special Fire Fighting Procedures
N.A.

Unusual Fire and Explosion Hazards
Do not dispose of battery in fire - may cause explosion
Do not short-circuit battery – may cause burns.

Section V – Reactivity Data

Stability	Unstable		Conditions to avoid
	Stable	√	

Incompatibility(Materials to avoid)

Hazardous Decomposition or Byproducts

When heated, battery may emit hazardous vapour of KOH/NaOH and Hg

Hazardous Polymerization	May Occur		conditions to avoid
	Will not occur	√	

Section VI - Health Hazard Data

In case of electrolyte leakage, skin will be itchy when contaminated with electrolyte.

In contact with electrolyte can cause server irritation and chemical burns

Inhalation of electrolyte vapors may cause irritation of the upper respiratory tract and lungs.

Section VII – First Aid Measures

First Aid procedures

If electrolyte leakage occurs and makes contact with skin, wash with plenty of water immediately
If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen minutes, and contact a physician.

If electrolyte vapors are inhaled, provide fresh air and seek medical attention if respiratory irritation develops. Ventilate the contaminated area.

Section VIII - Fire and Explosion Hazard Data

Flash Point (Method Used)	Ignition Temp.	Flammable Limits	LEL	UEL
N.A.	N.A.	N.A.	N.A.	N.A.

Extinguishing Media
N.A



Special Fire Fighting Procedures

N.A.

Unusual Fire and Explosion Hazards

Do not dispose of battery in fire - may explode.

Do not short-circuit battery - may cause burns.

Section IX – Accidental Release or Spillage

Steps to Be Taken in Case Material is Released or Spilled

Batteries that are leakage should be handled with rubber gloves.

Avoid direct contact with electrolyte.

Wear protective clothing and a positive pressure Self-Contained Breathing Apparatus (SCBA).

Section X – Handling and Storage

Safe handling and storage advice

The battery is extremely sensitive to adverse effects of humidity. Be sure to store them in a place that is dry and subject to little temperature change. Do not place near the boiler or radiator, nor expose to direct sun light. Do not dispose of the battery in fire. Do not charge the battery. Do not short-circuit the battery. Do not put in backward position. Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries. Do not disassemble the battery, handing in such manner can cause the battery to explode, leak and injury.

Section XI – Exposure Controls / Person Protection

Occupational Exposure Limits:		LTEP N.A.	STEP N.A.
Respiratory Protection (Specify Type)		N.A.	
Ventilation	Local exhausts	N.A.	Special N.A.
	Mechanical(General)	N.A.	Other
N.A			
Protective glove		N.A.	Eye protection N.A.

Other protective clothing or equipment

N.A.

Work/Hygienic practice

N.A.

Section XII Ecological information

N.A



Section XIII Disposal Method

Dispose of the batteries according to the government regulations.

Section XIV-Transportation Information

Batteries are considered to be "Dry cell" batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation(DOT),International Civil Aviation Administration(ICAO),International Air Transport Association(IATA)and International Maritime Dangerous Goods Regulations(IMDG).The only DOT requirement for shipping these batteries is special provision 130which states: Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat(For example, by the effective insulation of exposed terminals).As of 1/1/97 IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting.

Section XV-Regulatory Information

Special requirement be according to the local regulatory.

Section XVI-Other Information

The information on this Material Safety Date Sheet (MSDS) was obtained form current and reputable sources. However, the data is provided without any warranty; expressed or implied, regarding its correctness or accuracy. It is the user's responsibility to assume liability on loss, injury, damage, or expense resulting from improper use of this product. Any previous MSDS of this product mentioned above are hereby replaced with this new document. We urge you to make this information available as appropriate in your organization and to any others with whom you arrange to handle this product.



TEST REPORT

NUMBER: SHAH00252551

APPLICANT: ZHONGYIN (NINGBO) BATTERY CO., LTD. DATE: MAY 04, 2011
中银(宁波)电池有限公司
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ATTN 联系人: GAO YIBING 高一兵

SAMPLE DESCRIPTION:

ONE(1) SUBMITTED SAMPLE SAID TO BE **SILVERY BATTERY WITH COLOR PACKING.**

ITEM NAME : Zn-MnO₂ BATTERY

ITEM NO. : R03

SUPPLIER : ZHONGYIN (NINGBO) BATTERY CO., LTD.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

COMMENT: THE SUBMITTED BATTERY SAMPLE DOES NOT EXCEED THE

LIMITS MENTIONED IN THE ARTICLE 4(1) OF DIRECTIVE 2006/66/EC.

TO BE CONTINUED

PREPARED AND CHECKED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

AUTHORIZED BY:
FOR INTERTEK TESTING SERVICES
LTD., SHANGHAI

MYRA LV
CHEMICAL LAB SENIOR MANAGER

STEPHEN TSANG
GENERAL MANAGER



TEST REPORT

NUMBER: SHAH00252551

TESTS CONDUCTED

HEAVY METAL CONTENTS IN BATTERY AND ACCUMULATOR

BY ACID DIGESTION METHOD, TOTAL LEAD, CADMIUM AND MERCURY CONTENTS WERE DETERMINED BY INDUCTIVELY COUPLED ARGON PLASMA SPECTROMETRY (ICP) AND ATOMIC ABSORPTION SPECTROPHOTOMETRY (AAS).

<u>TEST ELEMENTS</u>	<u>RESULT (%)</u>	<u>MDL (%)</u>	<u>LIMIT (%)</u>
LEAD (Pb)	0.0530	0.0010	-
CADMIUM (Cd)	0.0005	0.0001	0.0020
MERCURY (Hg)	ND	0.0001	0.0005

REMARK : MDL = METHOD DETECTION LIMIT
% = PERCENTAGE BY WEIGHT
ND = NOT DETECTED
"- " = NOT REGULATED

ACCORDING TO 2006/66/EC, APPROPRIATE SYMBOL IS REQUIRED FOR SEPARATE COLLECTION. THE CHEMICAL SYMBOL FOR LEAD / CADMIUM / MERCURY IS REQUIRED WHEN THE LEAD/CADMIUM/MERCURY CONTENT IN THE SUBMITTED SAMPLE EXCEEDS 0.0040% / 0.0020% / 0.0005%, RESPECTIVELY.

DATE SAMPLE RECEIVED : APR.14, 2011
TESTING PERIOD : APR.14, 2011 TO APR.25, 2011

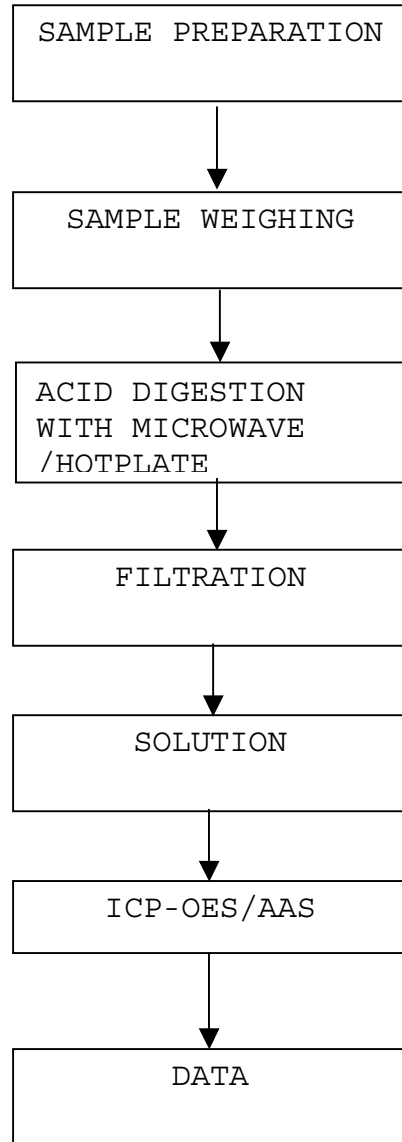
TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00252551

TESTS CONDUCTED

TESTING FLOW CHART: Pb/Cd/Hg



TO BE CONTINUED

TEST REPORT

NUMBER: SHAH00252551

TESTS CONDUCTED



END OF REPORT