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Material Safety Data Sheet

Model Name.: Zinc Manganese (Carbon Zinc) Dry Battery

Document Number: MSDS-R01001-04 Revision: 05

Note: Blank spaces are not permitted if any item is not applicable or no information is available, the space must be marked to indicate that.

Identity (As Used on Label and List) Zinc Manganese (Carbon Zinc) Dry Battery - R03, R6P, R14P, R20P, 6F22

Section I

Supplier's Name Maxell Asia Ltd.	Emergency Telephone Number 852-2730-9243
Address (Number, Street, City, State and ZIP Code) 506, World Commerce Centre, Harbour City,	Telephone Number for Information 852-2735-6250
Harbour City, Phase 1	Date Prepared 3-Jan-11
Canton Road, Kowloon, Hong Kong	Signature of Prepared (optional)

Section II - Hazardous Ingredients/Identity Information

Hazardous Components:

Description:	Approximate % of total weight
Mercury (Hg)	< 0.0001 wt%
Cadmium (Cd)	< 0.001wt%
Lead (Pb)	< 0.2 wt%

Section III - Physical / Chemical Characteristics

Boiling Point N.A.	Specific Gravity (H2O = 1) N.A.
Vapor Pressure (mm Hg) N.A.	Melting Point N.A.
Vapor Density (AIR=1) N.A.	Evaporation Rate (Butyl Acetate) N.A.

Solubility in Water

N.A.

Appearance and Odor

Cylindrical Shape , odorless

Section IV - 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

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Section V - Reactivity Data

Stability			Conditions to Avoid
	Unstable		
	Stable	X	

Incompatibility (Materials to Avoid)

Hazardous Decomposition of Byproducts

Hazardous Polymerization			Conditions to Avoid
	May Occur		
	Will Not Occur	X	

Section VI - Health Hazard Data

Route(s) of Entry	Inhalation?	Skin?	Ingestion
	N.A.	N.A.	N.A.

Health Hazard (Acute and Chronic) / Toxiclogical information

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

In contact with electrolyte can cause severe 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 skins, wash plenty of water immediately.

If electrolyte comes into contact with eyes, wash with copious amounts of water for fifteen (15) 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 - Accidental Release of Spillage

Step 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 IX - Handling and Storage

Safe handling and storage advice

Batteries should be handled and stored carefully to avoid short circuits.

Do not store in disorderly fashion, or allow metal objects to be mixed with stored batteries.

Never disassemble a battery.

Do not breathe cell vapors or touch internal material with bare hands.

Keep batteries between -30℃ and 35℃ for prolong storage.

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Section X - Exposure Controls / Person Protection

Occupational Exposure Limits :		
	LTEP	STEP
	N.A.	N.A.
Respiratory Protection (Specify Type)		
	N.A.	
Ventilation	Local Exhausts	Special
	N.A.	N.A.
	Mechanical (General)	Other
	N.A.	N.A.
Protective Gloves		Eye Protection
	N.A.	N.A.
Other Protective Clothing or Equipment		
	N.A.	
Work / Hygienic Practices		
	N.A.	

Section XI - Ecological Information

N.A.

Section XII - Disposal Method

Dispose of batteries according to government regulations

Section XIII - Transportation Information

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packed 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 oringinal 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 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	Specical Provision
ADR	295-304, 598
IMDG	UN3028 Provision 295-304
UN	UN3028 Provision 295-304
US DOT	49 CFR 172. 102 Provision 130
IATA	A123
ICAO	UN3028 Provision 295-304

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 123 be provided on the waybill, when the air waybill is issued.

Non-dangerous goods.

Such batteries have been packed in inner packaging in such a manner as to effectively prevent short circuit and movement that could lead to short ciruit.

Section XIV - Regulation Information

Special requirement be according to the local regulatories

Section XV - Other information

The data in this Material Safety Data Sheet relates only to the specific material designated herein

Section XVI - Measure for fire extinction

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.

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Energizer

PRODUCT SAFETY DATASHEET

Alkaline Batteries
June 2007

As a courtesy to our customers, Energizer has prepared copyrighted Product Safety Datasheets to provide information on the different Eveready/Energizer battery systems. As defined in OSHA Hazard Communication Standard, Section 1910.1200 (c), Eveready/Energizer batteries are manufactured "articles", which do not result in exposure to a hazardous chemical under normal conditions of use. For this reason, Material Safety Datasheets are not required. 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. However, ENERGIZER BATTERY MANUFACTURING, INC., MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.

PRODUCT SAFETY DATA SHEET

PRODUCT NAME: EVEREADY Battery

Type No.: **Volts:**

TRADE NAMES: ENERGIZER, ENERGIZER e², INDUSTRIAL ZMA, HERCULES, EVEREADY, WONDER

Approximate Weight:

CHEMICAL SYSTEM: Alkaline Manganese Dioxide-Zinc

Designed for Recharge: No

SECTION I - MANUFACTURER INFORMATION

Energizer Battery Manufacturing, Inc.
1359 Columbia Rd.
Westlake, OH 44145

Telephone Number for Information:

800-383-7323 (USA / CANADA)

Date Prepared: June 2007

SECTION II - HAZARDOUS 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.
Graphite (CAS# 7782-42-5)	15 mg/m^3 TWA (total dust) 5 mg/m^3 TWA (respirable fraction)	2 mg/m^3 TWA (respirable fraction)	2-6
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m^3 Ceiling (as Mn)	0.2 mg/m^3 TWA (as Mn)	30-45
Potassium Hydroxide (CAS# 1310-58-3)	None established	2 mg/m^3 Ceiling	4-8
Zinc (CAS# 7440-66-6)	15 mg/m^3 TWA PNOR* (total dust) 5 mg/m^3 TWA PNOR* (respirable fraction)	10 mg/m^3 TWA PNOC** (inhalable particulate) 3 mg/m^3 TWA PNOC** (respirable paeticulate)	12-25

* PNOR: Particulates not otherwise regulated
**PNOC: Particulates not otherwise classified

SECTION III - FIRE AND EXPLOSION HAZARD DATA

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 IV - HEALTH HAZARD DATA

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.

If battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect day or night.

Inhalation: Contents of an open battery can cause respiratory irritation. Provide fresh air and seek medical attention.

Skin Contact: Contents of an open battery can cause skin irritation and/or chemical burns. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact: Contents of an open battery can cause severe irritation and chemical burns. 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 V - PRECAUTIONS FOR SAFE HANDLING AND USE

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

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your Energizer Battery Manufacturing, Inc. representative for precautionary suggestions. Batteries normally evolve hydrogen which, when combined with oxygen from the air, can produce a combustible or explosive mixture unless vented. If such a mixture is present, short circuits, high temperature, or static sparks can cause an ignition.

Do not obstruct safety release vents on batteries. Encapsulation (potting) of batteries will not allow cell venting and can cause high pressure rupture.

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 Energizer Battery Manufacturing, Inc. 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.

Labeling: If the Eveready label or package warnings are not visible, it is important to provide a package and/or device label stating:

> **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.**

Where accidental ingestion of small batteries is possible, the label should include:

> Keep away from small children. If swallowed, promptly see doctor; have doctor phone (202) 625-3333 collect.

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

SECTION VI - SPECIAL PROTECTION INFORMATION

Ventilation Requirements: Not necessary under normal conditions.
Respiratory Protection: Not necessary under normal conditions.

Eye Protection: Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.

Gloves: Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery.

SECTION VII - REGULATORY INFORMATION

Batteries marketed by Energizer Battery Manufacturing, Inc. have been classified as non-dangerous goods by the US Department of Transportation and 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.