



## MATERIAL SAFETY DATA SHEET

1. We would like to inform our customers that these batteries are exempt articles and are not subject to the 29 CFR 1910.1200 OSHA requirements, or to the Canadian WHMIS requirements and the sheets are supplied as a service to you. For other MSDSs and related information, visit: <http://www.rayovac.com/technical/msds.htm>.

### 1. IDENTIFICATION

**PRODUCT NAME:** Zinc Air Batteries (traditional)

**SIZES:** All button sizes

**EMERGENCY TELEPHONE NUMBER:** 800-424-9300 (24 hr, Chemtrec)

**Environmental Health & Safety Information:** 608-275-2482

**EDITION DATE:** 07-19-2010

**APPROVED BY:** Kevin J. Domack

### 2. INGREDIENTS

INGREDIENT NAME	CAS #	%	TLV*
Zinc	7440-66-6	30 - 40	5.0 mg/m <sup>3</sup> (ZnO, Fume, TWA)
Steel	7439-89-6	30 - 40	---
Nickel	7440-02-0	3 - 7	1.0 mg/m <sup>3</sup> (Elemental, TWA)
Copper	7440-50-8	1 - 5	1 mg/m <sup>3</sup> (TWA)
Chromium	7440-47-3	1 - 5	0.5 ug/m <sup>3</sup> (Metal, TWA)
Graphite	7782-42-5	1 - 3	15 mppcf (TWA)
Potassium Hydroxide	1310-58-3	1 - 3	Not Listed (for solution)
Mercury	7439-97-6	< 1**	1 mg/10mg <sup>3</sup> Ceiling
Water, paper, plastic, other	---	Balance	---

\*Source: OSHA 29 CFR 1910.1000 Table Z-1 3-01-2010; OSHA 29 CFR 1910.102.6 App. A

\*\* These Zinc Air Batteries contain less than 25 mg/cell of mercury.

### 3. PHYSICAL DATA

Boiling Point @ 760 mm Hg (°C):	NA
Vapor Pressure (mm Hg @ 25°C):	NA
Vapor Density (Air = 1):	NA
Density (grams/cc):	NA
Percent Volatile by Volume (%):	NA
Evaporation Rate (Butyl Acetate = 1):	NA
Physical State:	NA
Solubility in Water (% by Weight):	NA
pH:	NA
Appearance and Odor:	geometric solid object, this battery has several holes in the positive (+) end

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#### 4. FIRE & EXPLOSION HAZARD DATA

<u>FLASH POINT:</u>	NA	<u>LOWER (LEL):</u>	NA
<u>FLAMMABLE LIMITS IN AIR (%):</u>	NA	<u>UPPER (UEL):</u>	NA
<u>EXTINGUISHING MEDIA:</u>	Use water, foam or dry powder, as appropriate.		
<u>AUTO-IGNITION:</u>	NA		

SPECIAL FIRE FIGHTING PROCEDURES: As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products (See section 2).

SPECIAL FIRE EXPLOSION HAZARDS: Like any sealed container, battery cells may rupture when exposed to excessive heat; this could result in the release of flammable or corrosive materials.

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#### 5. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV) AND SOURCE: NA

EFFECTS OF OVEREXPOSURE: None. (In fire or rupture situation see section 2 and section 4)

EMERGENCY FIRST AID PROCEDURES:

*Skin and Eyes:*

In the event that battery ruptures, flush exposed skin with copious quantities of flowing lukewarm water for a minimum of 15 minutes. Get immediate medical attention for eyes. Wash skin with soap and water.

*Swallowing:*

*If you or your doctor suspects that a battery has been ingested-for assistance in the US call the NATIONAL BATTERY INGESTION HOTLINE any time at (202) 625-3333; in Canada call 416-813-5900.*

For more information, visit: <http://www.nema.org/gov/ehs/committees/drybat/>.

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#### 6. REACTIVITY DATA

<u>STABLE OR UNSTABLE:</u>	Stable
<u>INCOMPATIBILITY (MATERIALS TO AVOID):</u>	NA
<u>HAZARDOUS DECOMPOSITION PRODUCTS:</u>	NA
<u>DECOMPOSITION TEMPERATURE (0°F):</u>	NA
<u>HAZARDOUS POLYMERIZATION:</u>	Will Not Occur
<u>CONDITIONS TO AVOID:</u>	Avoid electrical shorting.

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## 7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS: In the event of a battery rupture, prevent skin contact and collect all released material in a plastic lined metal container.

REPORTING PROCEDURE: Report all spills in accordance with Federal, State and Local reporting requirements.

WASTE DISPOSAL METHOD: Comply with all Federal, state and local regulations. Some state or local rules may require specific waste management methods. Collection is required in European Union Countries. For additional information on disposal/reclaim options, visit:  
<http://www.nema.org/gov/ehs/committees/drybat/>.

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## 8. PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): NA

VENTILATION:

Local Exhaust:	NA
Mechanical (General):	NA
Special:	NA
Other:	NA

PROTECTIVE GLOVES: NA

EYE PROTECTION: NA

OTHER PROTECTIVE CLOTHING: NA

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## 9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE: Store in a dry place. Storing unpackaged cells together could result in cell shorting and heat build-up.

TRANSPORTATION-SHIPPING: These are considered dry-cell batteries and they are non-dangerous goods for transportation.  
USDOT – See Special Provision 130  
IMDG/Ocean – Not listed  
ICAO/Air – See Special Provision A123. It also states to put the words “not restricted” and special provision A123 on the air waybill when an air waybill is issued.

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## 10. SARA 313

Notification is not required because these products are article(s) that do not release a covered toxic chemical under the normal conditions of processing or use.

NOTICE: The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. Rayovac Corporation makes no warranty expressed or implied.