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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 requirement, or to the Canadian WHMIS requirements, and the sheets are supplied as a service to you. For other MSDSs and related information, contact: <http://www.rayovac.com> (click on "OEM" twice).
- (2) THESE BATTERIES ARE SUITABLE FOR DISPOSAL IN ORDINARY LANDFILLS (SEE SECTION 7).

1. IDENTIFICATION

PRODUCT NAME: ZINC-CHLORIDE BATTERIES - "NO MERCURY, NO CADMIUM" FORMULA

SIZES: All

EMERGENCY TELEPHONE NUMBER: 608-275-4735 or 1-800-255-3924 (24 hr)

EDITION DATE: 12/01/98

APPROVED BY: Timothy J. Anderson

2. INGREDIENTS

| INGREDIENT NAME | CAS # | % | *TLV & SOURCE (UNITS) |
|------------------------------|-----------|---------|--|
| Steel | 7439-89-8 | 8 - 14 | -- |
| Manganese Dioxide | 1313-13-9 | 28 - 32 | 0.2 mg/M ³ |
| Zinc | 7440-66-6 | 16 - 20 | 10.0 mg/M ³ (as zinc oxide) |
| Graphite | 7782-42-5 | 7 - 13 | 2 mg/M ³ |
| Zinc Chloride | 7646-85-7 | 6 - 10 | 1 mg/M ³ (fume) |
| Lead | 7439-92-1 | < .02 | 0.05 mg/M ³ |
| Water, paper, plastic, other | --- | balance | --- |

*ACGIH Threshold Limit Values for Chemical Substances and Physical Agents, 1998.

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 |

6/7
4. FIRE & EXPLOSION HAZARD DATA**FLASH POINT:** NA **LOWER (LEL):** NA**FLAMMABLE LIMITS IN AIR (%):** NA **UPPER (UEL):** NA**EXTINGUISHING MEDIA:** Use water, foam or dry powder, as appropriate.**AUTO-IGNITION:** 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.**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 with copious quantities of water. Get immediate medical attention for eyes. Wash skin with soap and water.

Swallowing:

Ingestion of a battery can be harmful. Call The National Battery Ingestion Hotline (202-625-3333) - COLLECT, day or night - for advice and follow-up.

6. REACTIVITY DATA**STABLE OR UNSTABLE:** Stable**INCOMPATIBILITY (MATERIALS TO AVOID):** NA**HAZARDOUS DECOMPOSITION PRODUCTS:** NA**DECOMPOSITION TEMPERATURE (0°F):** NA**HAZARDOUS POLYMERIZATION:** May Occur: Will Not Occur: X**CONDITIONS TO AVOID:** Avoid electrical shorting.

7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS: In the event of a battery rupture, 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: When shredded per Toxicity Characteristic Leachate Procedure (TCLP) parameters and tested per SW 846, 3rd Edition, Test Methods for Evaluating Solid Waste, independent certified laboratory analyses have indicated these Rayovac battery types to have no hazardous waste characteristics (per 40 CFR, Part 261.24) and can be landfilled if all other Federal, State and Local regulations are complied with. TCLP data is available upon request. Call 608-275-4735.

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

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 "batteries, dry" and are not considered to be a "hazardous material" per U.S. DOT (Dept. of Transportation Regulations) or a "dangerous goods" per IATA (International Air Transport Association Regulations).

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.

NOTE: NA = Not Applicable