

**Material Safety Data Sheet**

May be used to comply with  
OSHA's Hazard Communication Standard,  
29 CFR 1910.1200. Standard must be  
consulted for specific requirements.

**U.S. Department of Labor**

Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072

**IDENTITY** (As Used on Label and List)Remotely Activated Primary Silver-Zinc Battery  
(Non-spillable battery)

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.

**Section I**

<b>Manufacturer's Name</b> Yardney Technical Products, Inc.	<b>Emergency Telephone Number</b> (800) 255-3924
<b>Address (Number, Street, City, State, and Zip Code)</b> 2000 South County Trail  East Greenwich, RI 02818-1530	<b>Telephone Number for Information</b> 401-471-6580
<b>Competent Authority Approve</b>	<b>Date Prepared</b> 9/12/2014
	<b>Signature of Preparer (optional)</b>

**Section II - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Mercury (inorganic), CAS No. 7439-97-6	0.1 mg/m <sup>3</sup> (C)	TWA: 0.1 mg/m <sup>3</sup> , skin designation		
Potassium Hydroxide (32% liquid), CAS No. 1310-58-3	2.0 mg/m <sup>3</sup>	TLV: 2.0 mg/m <sup>3</sup>		
Silver (inorganic) Compounds, CAS No. 7440-22-4 & CAS No. 20667-12-3	0.01 mg/m <sup>3</sup>	TLV: 0.1 mg/m <sup>3</sup>		
Zinc (inorganic), CAS No. 7440-66-6	5 mg/m <sup>3</sup>			
Battery Activation cartridge, CAS No. N/A	Zr - 5 mg/m <sup>3</sup> , Cr-0.05 mg/m <sup>3</sup>			
Prime mix of zirconium powder, ammonium perchlorate ammonium dichromate, and barium chromate, Ignition mix of boron, potassium nitrate and a propellant grain of ammonium perchlorate on epoxy-cured polybutadiene binder.	Cr - 0.05 mg/m <sup>3</sup>			

(Under normal conditions of use or service, this battery does not expose the user to toxic fumes. Prior to use care must be taken filling a dry cell with electrolyte in order to avoid a severe chemical burn to exposed tissue. Skin and eye protection is strongly recommended for the cell/battery fill operation).

This product contains the following EPCRA Section 313 chemicals: Mercury, Silver & Zinc Compounds

**Section III - Physical/Chemical Characteristics**

<b>Boiling Point</b>	NA	<b>Specific Gravity (H<sub>2</sub>O = 1)</b>	NA
<b>Vapor Pressure (mm Hg.)</b>	NA	<b>Melting Point</b>	NA
<b>Vapor Density (AIR = 1)</b>	NA	<b>Evaporation Rate (Butyl Acetate = 1)</b>	NA

**Solubility in Water**

NA

**Appearance and Odor**

Manufactured Article - No chemical exposure under normal handling condition except when unit is activated.

**Section IV - Fire and Explosion Hazard Data**

<b>Flash Point (Method Used)</b>	<b>Flammable Limits</b>	<b>LEL</b>	<b>UEL</b>
NA	NA	NA	NA

**Extinguishing Media**

NA - Utilize media appropriate for surrounding fire conditions. Ordnance device (battery activation cartridge) inside article (battery) is not extinguishable and may be activated by a fire external to the article.

**Special Fire Fighting Procedures**

The ordnance device (battery activation cartridge) is not classified as an explosive when installed in the article (battery). Fires may be fought, but only from safe fire-fighting distance. Evacuate all personnel from immediate area of fire.

**Unusual Fire and Explosion Hazards**

Do not store with high explosives or flammable liquids. Keep away from fire. Do not exceed proper storage temperature (See Section 9). Activation of the article (battery) may release some smoke, fumes, gasses, and liquid, which may be corrosive, irritating, and possible toxic. Initiation of the article (battery) should not result in fragmentation, but may release heat.

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## Section V - Reactivity Data

Stability Normally	Unstable	NA	Conditions to Avoid
Stable	Stable	NA	

### Incompatibility (Materials to Avoid)

Do not store with high explosives, flammable liquids, strong acids, or strong bases.

### Hazardous Decomposition or Byproducts

Upon activation, small amounts of oxides of carbon, and potassium hydroxide may be released.

Hazardous	May Occur		Conditions to Avoid
Polymerization		NA	Do not exceed proper storage temperature (See Section IX), avoid flames. Also avoid electrostatic discharge, impact, electrical current, or RF energy when handling unpackaged battery.
	Will Not Occur	NA	

## Section VI - Health Hazard Data

Route(s) of Entri'nhalation?	Skin?	Ingestion?
Inhalation, skin contact, eye contact, or ingestion are not likely routes of exposure for sealed articles (battery)		

### Health Hazards (Acute and Chronic)

Potassium Hydroxide is corrosive to skin and eyes. Mercuric Oxide bio accumulates in human tissues. Silver bio accumulates in human tissue. Zinc bio accumulates in human tissue. Zinc fumes can cause respiratory distress.

Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?
	No	No	No

### Effects of Overexposure

Inhalation of products released after activation could irritate respiratory system or aggravate existing respiratory condition. Skin contact or eye contact by liquid releases or fumes from the article (battery) can result in severe burns.

### Medical Conditions

#### Generally Aggravated by Exposure

### Emergency and First Aid Procedures

Follow appropriate local emergency plans. Give first aid appropriate to the injury, giving priority to eye contact. Treat eye contact by gently lifting the eyelids and immediately flush the eye with flooding amounts of cool water continuously for at least 15 minutes and then transport to an emergency medical facility. Delays in treating eye contact may result in an increase to the injury.

## Section VII - Precautions for Safe Handling and Use

### Steps to Be Taken in Case Material is Released or Spilled

If article should become damaged so as to expose exposed sealed area, consult Yardney Engineering for guidance. If accidental activation should occur, evacuate unprotected personnel to a safe distance and isolate the battery, if possible. After activation has been completed, allow the unit to cool and dis of the battery in the normal manner for test batteries according to all applicable federal, state, and local regulations. Treat liquid releases as possible caustic spills.

### Waste Disposal Method

The article (battery) may qualify for an exemption from RCRA hazardous waste regulations under the precious metal recovery section. Dispose of the article in accordance with all applicable federal, state and local regulations. In non-activated articles, the battery activation cartridge is a reactive waste

### Precautions to be Taken in Handling And Storage

Observe storage temperature requirements on packaging labeling. Keep connector shunted at all times until article is to be installed. Never attempt to disassemble, machine, or otherwise modify units or injury hazard may result.

### Other Precautions

Observe special precautions on article labels before handling or testing.

### Storage Temperature: 160°F maximum

## Section VIII - Control Measures

### Respiratory Protection (Specific Type)

Test activation article (battery) only in location isolated from personnel to prevent direct exposure.

Ventilation	Local Exhaust	Special
	Recommended for articles which vent gas, fumes, or vapors	NA
	Mechanical (General)	Other
	May be required to assist local exhaust to reach outside atmosphere.	NA

Protective Gloves	Eye Protection
Follow local procedures and requirements. Gloves rated for potassium hydroxide.	Safety glasses meeting ANSI-Z87 standard should be used for routing handling. Chemical goggles should be used during battery activation if isolated location is not used.

### Other Protective Clothing or Equipment

Protective shielding or an enclosure is recommended for functional article testing. Chemical resistant clothing is also recommended if an isolated location is not used during article testing. Equipment and personnel may require special grounding to protect the article from static discharges when handling non-shunted units.

### Work Hygienic Practices

Wash thoroughly after working with AgZn Batteries.