ARTICLE INFORMATION SHEET/SAFETY DATA SHEET (AIS/SDS)
Silver Oxide Battery

This Article Information Sheet (AIS) provides relevant battery information to retailers, consumers, OEMs and other users requesting a GHS-compliant SDS. Articles, such as batteries, are exempt from GHS SDS classification criteria. The GHS criteria is not designed or intended to be used to classify the physical, health and environmental hazards of an article. Branded consumer batteries are defined as electro-technical devices. The design, safety, manufacture, and qualification of Energizer and Rayovac branded consumer batteries follow ANSI and IEC battery standards.

SECTION 1 - Identification

Product Name: Energizer	**Document Number:** 1022-SIOX
Chemical System: Silver Oxide (0Hg)	**Date Prepared:** January 2023
Designed for Recharge: No	**Valid Until:** January 2026

Prepared by: Energizer

Energizer Brands, LLC
533 Maryville University Drive
St. Louis, MO 63141

Email for Information:
customersupport@energizer.com

1-800-383-7323

Description	Silver Oxide Battery (0Hg)
Use	Portable power source
Brand	ENERGIZER/EVERREADY
IEC Designation	ncluded but not limited to: SR42, SR44, SR58, SR60, SR68, SR69, SR66, SR43, SR54, SR55, SR41, SR48, SR57, SR59
Sizes	Included but not limited to: 315Z, 317Z, 319Z, 321Z, 329Z, 335Z, 337Z, 341Z, 344/350Z, 346Z, 357/303HZ, 357/303Z, 362/361Z, 364/363Z, 365Z, 371/370Z, 373Z, 377/376Z, 379Z, 386Z, 387SZ, 390/389Z, 391Z, 392/384Z, 393Z, 394/380Z, 395/399Z, 397/396Z, EPX76Z, A76ZINS
Image	

SECTION 2 – Hazards Identification

Not applicable to Batteries which are classified as Articles

Articles, such as batteries, are exempt from GHS SDS classification criteria. The GHS criteria are not designed or intended to be used to classify the physical, health and environmental hazards of an article.

Inhalation: Contents of an open battery can cause respiratory irritation.
Skin Contact: Contents of an open battery can cause skin irritation.
Eye Contact: Contents of an open battery can cause severe irritation.

©2022 Energizer

SECTION 3 – Composition / Information

The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

All Energizer Alkaline Manganese Dioxide-Zinc have zero added mercury.

MATERIAL OR INGREDIENT	CAS #	%/wt.
Graphite	7782-42-5	0-3
Manganese Dioxide	1313-13-9	0 - 20
Potassium Hydroxide	1310-58-3	0 - 7
Silver Oxide	20667-12-3	10 - 35
Sodium Hydroxide	1310-73-2	0-7
Zinc	7440-66-6	6 - 14
Non-Hazardous Components Steel Water, Paper, Plastic and Other	65997-19-5	30 - 35 Balance

SECTION 4 – First Aid Measures

Ingestion: Do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (800-498-8666) day or night.

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

SECTION 5 – Fire Hazard & Firefighting

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 6 – Accidental Release Measures

Not applicable to Batteries which are classified as Articles

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 requirement.

©2022 Energizer

SECTION 7 - HANDLING AND STORAGE

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

Mechanical Containment: Designers of any water or air-tight device should be aware of the normal evolution of hydrogen gas from alkaline batteries. This gas must be either absorbed or allowed to escape to avoid a potential safety issue.

Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy through heating, 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.

Soldering directly to a battery is not recommended. If welding to the battery is required, consult your Energizer sales 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: The label acts as an electrical insulation for the battery can. Damage to the label can increase the potential for a short circuit.

WARNING: Do not install backwards, charge, put in fire, or mix with other battery types as it may explode or leak causing injury.
Replace all batteries at the same time.

SECTION 8 – Exposure Controls

Not applicable to Batteries which are classified as Articles

In case of rupture or leakage use hand protection. Avoid contact with skin and eyes

SECTION 9 – TRANSPORT INFORMATION

Not applicable to Batteries which are classified as Articles

SECTION 10 – STABILITY AND REACTIVITY

STABLE OR UNSTABLE: Stable

INCOMPATIBILITY (MATERIALS TO AVOID): Not Applicable to articles.

HAZARDOUS DECOMPOSITION PRODUCTS: Not Applicable to articles.

DECOMPOSITION TEMPERATURE (0°F): Not Applicable to articles.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: Avoid electrical shorting, puncturing or deform

©2022 Energizer

SECTION 11 – TOXILOGICAL INFORMATION

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)	0-3
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m^3 Ceiling (as Mn)	0.2 mg/m^3 TWA (as Mn)	0 - 20
Potassium Hydroxide (CAS# 1310-58-3)	None established	2 mg/m^3 Ceiling	0 - 7
Silver Oxide (CAS# 20667-12-3)	0.01 mg/m^3 TWA (as Ag)	0.1 mg/m^3 TWA (as Ag)	10 - 35
Sodium Hydroxide (CAS# 1310-73-2)	2 mg/m^3 TWA	2 mg/m^3 Ceiling	0-7
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 particulate)	6 - 14
Non-Hazardous Components Steel (iron CAS# 65997-19-5) Water, Paper, Plastic and Other	None established None established	None established None established	30 - 35 Balance
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)	0-3
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m^3 Ceiling (as Mn)	0.2 mg/m^3 TWA (as Mn)	0 - 20
Potassium Hydroxide (CAS# 1310-58-3)	None established	2 mg/m^3 Ceiling	0 - 7

SECTION 12 – Ecological Information

Dispose of properly when discharged. Use a recycling outlet if available. Those collecting batteries should follow state and federal regulations.

Partially discharged damaged batteries can overheat and cause fires in the presence of other combustible materials.

SECTION 13 – Disposal Considerations

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

SECTION 14 – TRANSPORT INFORMATION

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged 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 original packaging for Energizer alkaline batteries has been designed to be compliant with these regulatory concerns.

Silver oxide batteries (sometimes referred to as "Dry cell" batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Good Regulations, 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.

©2022 Energizer

Regulatory Body	Special Provisions
ADR	Not Regulated
IMDG	Not Regulated
UN	Not Regulated
US DOT	49 CFR 172.102 Provision 130
IATA	A123
ICAO	Not Regulated

All Energizer silver oxide 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 A123 be provided on the air waybill, when an air waybill is issued.

For emergency information call ChemTel 1-800-526-4727 (North America) or 1-314-985-1511 (International).

SECTION 15 – REGULATORY INFORMATION

Applicable Battery Industry Standards

North America Standards	ANSI C18.1M Part 1	ANSI C18.1M Part 2	ANSI C18.4
International Standards	IEC 60086-1	IEC 60086-2	IEC 60086-5

15.1 Battery

1. **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.
2. **USA EPA Mercury Containing & Rechargeable Battery Management Act of 1996:** No mercury added
3. **EU Battery Directive 2006/66/EC Amended 2013/56/EU:** Energizer batteries are compliant with all aspects of the Directive

15.2 General

1. **CPSIA 2008:** Exempt
2. **US CPSC FHSA (16 CFR 1500):** Not applicable since batteries are defined as articles
3. **USA EPA TSCA (40 CFR 707.20):** Not applicable since batteries are defined as articles
4. **USA EPA RCRA (40 CFR 261):** Classified as non-hazardous waste per ignitable, corrosive, reactive or toxicity testing
5. **California Prop 65:** No warning required
6. **DTSC Perchlorate labeling:** No warning required
7. **EU REACH SVHC:** No REACH listed substances of very high concern are present above 0.1% w/w.

15.3 Article Definitions

©2022 Energizer

1. **OSHA Hazard Communication Standard, Section 1910.1200(c)**

SECTION 16 - OTHER INFORMATION

Energizer has prepared copyrighted Article Information Sheets to provide information on the different Eveready/Energizer/Rayovac battery systems. Batteries are articles as defined under the GHS and exempt from GHS classification criteria (Section 1.3.2.1.1 of the GHS). 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 BRANDS, LLC MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.

16.1 ACRONYM GLOSSARY

1. ANSI: American National Standards Institute
2. CPSC: Consumer Product Safety Commission
3. CPSIA: Consumer Product Safety Improvement Act
4. DTSC: Department of Toxic Substances Control
5. EPA: Environmental Protection Agency
6. FHSA: Federal Hazardous Substances Act
7. GHS: Globally Harmonized System for Hazard Communication
8. IEC: International Electrotechnical Commission
9. OSHA: Occupational Safety and Health Administration
10. RCRA: Resource Conservation and Recovery Act
11. SDS: Safety Data Sheet
12. SVHC: Substances of Very high Concern
13. TSCA: Toxic Substances Control Act

©2022 Energizer