


Article Information Sheet (AIS)

This Article Information Sheet (AIS) provides relevant battery information to retailers, consumers, OEMs and others 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 branded consumer batteries follow ANSI and IEC battery standards. This document is based on principles set forth in the following hazard communication approaches: ANSI Z-400.1, GHS, JAMP AIS, and IEC 62474.

| 1. Document Information | |
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| Document Name | Duracell Silver Oxide Batteries (Specialty Cells) |
| Document ID | AIS-SO |
| Issue Date | 10-Dec-15 |
| Version | 2a |
| Preparer | Product Safety & Regulatory |
| Last Revision | 7/22/2016 |
| Information Contact | moquet.l@duracell.com |
| 2. Company Information | |
| Name & Address | Duracell Global Business Unit, 14 Research Drive, Bethel, CT USA 06801 |
| Telephone | (203) 796- 4430 |
| Website | www.duracell.com |
| Consumer Relations | North America: 1-800-551-2355 (9:00 AM - 5:00 PM EST) |
| 3. Article Information | |
| Description | Duracell branded consumer silver oxide button cell battery |
| Product Category | Electro-technical device |
| Use | Portable power source for electronic devices |
| Global sub-brands (Retail) | Duracell |
| Sizes | 301/386; 303/357; 309/393; 319; 361/362; 364; 371; 376; 377; 379; 381/391; 384/392; 389/390; 394; 395/399; 396/397; MX76 |
| IEC Designation | (SR) |
| Principles of Operation | A battery powers a device by converting stored chemical energy into electrical energy. |
| Representative Product Image |  <p>The image shows a retail blister pack of three Duracell 303/357 silver oxide button cell batteries. The pack is black with yellow and white text. It features the Duracell logo and the model number 303/357. At the bottom, it indicates '3 Batteries' and '1.5V Silver Oxide Button Cell'. The batteries are visible through a clear plastic window.</p> |
| 4. Article Construction | |
| Applicable Battery Industry Standards | ANSI C18.1M Part 1, ANSI C18.1M Part 2, ANSI C18.4, IEC 60086-1, IEC 60086-2, IEC 60086-5 |
| Electro-technical System | Silver Oxide |
| Anode (Electrode - Negative) | Zinc (CAS # 7440-66-6) |
| Cathode (Electrode - Positive) | Silver Oxide (CAS # 20667-12-3); Manganese Dioxide (CAS #1313-13-9) |
| Electrolyte | Alkali Metal Hydroxide (Aqueous Mixture: potassium hydroxide - CAS # 1310-58-3; sodium hydroxide - CAS # 1310-73-2) |
| Materials of Construction - Can | Nickel Plated Steel |
| Declarable Substances (IEC 62474 Criteria 1) | None |
| Mercury Free Battery (ANSI C18.4M <5ppm) | Yes |

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| Small Cell or Battery (ANSI C18.1M Part 2; IEC 60086-5) | All sizes of button cell batteries fit inside a specially designed test cylinder 2.25 inches (57.1mm) long by 1.25 inches (31.70 mm) wide. |
| 5. Health & Safety | |
| Ingestion/Small Parts Warning | <u>Required for sizes of button cell batteries:</u> Keep away from children. If swallowed, consult a physician immediately. |
| Normal Conditions of Use | Exposure to contents inside the sealed battery will not occur unless the battery leaks, is exposed to high temperatures, or is mechanically abused. |
| Note to Physician | A damaged battery will release concentrated and caustic potassium hydroxide. |
| First Aid - If swallowed | Do not induce vomiting. Seek medical attention immediately. USA CALLS ONLY - CALL 24-HOUR NATIONAL BATTERY INGESTION HOTLINE: (202) 625-3333 - COLLECT. |
| First Aid - Eye Contact | Flush with water for at least 15 minutes. Seek medical care if irritation persists. |
| First Aid - Skin Contact | Remove contaminated clothing. Wash skin with soap and water. Seek medical care if irritation persists. |
| First Aid - Inhalation | Remove to fresh air. |
| Precautionary Statements | CAUTION: Keep batteries away from children. If swallowed, consult a physician at once. Batteries can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Do not carry batteries loose in your pocket or purse. |
| 6. Fire Hazard & Firefighting | |
| Fire Hazard | Batteries may rupture or leak if involved in a fire. |
| Extinguishing Media | Use any extinguishing media appropriate for the surrounding area. |
| Fires Involving Large Quantities of Batteries | Large quantities of batteries involved in a fire will rupture and release caustic potassium hydroxide. Firefighters should wear self-contained breathing apparatus and protective clothing. |
| 7. Handling & Storage | |
| Handling Precautions | Avoid mechanical and electrical abuse. Do not short circuit or install incorrectly. Batteries may rupture or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions. |
| Storage Precautions | Store batteries in a dry place at normal room temperature. Refrigeration does not make them last longer. |
| Spills of Large Quantities of Loose Batteries (unpackaged) | Notify spill personnel of large spills. Irritating and flammable vapors may be released from leaking or ruptured batteries. Spread batteries apart to stop shorting. Eliminate all ignition sources. Evacuate area and allow vapors to dissipate. Clean-up personnel should wear appropriate PPE to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in appropriate container for disposal. Remove any spilled liquid with absorbent material and contain for disposal. |
| 8. Disposal Considerations (GHS Section 13) | |
| Collection & Proper Disposal | Dispose of used (or excess) batteries in compliance with federal, state/provincial and local regulations. Do not accumulate large quantities of used batteries for disposal as accumulations could cause batteries to short-circuit. Do not incinerate. In countries, such as Canada and the EU, where there are regulations for the collection and recycling of batteries, consumers should dispose of their used batteries into the collection network at municipal depots and retailers. They should not dispose of batteries with household trash. |
| USA EPA RCRA (40 CFR 261) | Classified as non-hazardous waste (not ignitable, corrosive, reactive or toxic). Federal Universal Waste Regulations (40 CFR 273) do not apply. State requirements may be more stringent than Federal. |
| California Universal Waste Rule (Cal. Code Regs. Title 22, Div. 4.5, Ch. 23) | California prohibits disposal of batteries as trash (including household trash). |

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| 9. Transport Information (GHS Section 14) | |
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| Regulatory Status | Not regulated. Silver oxide batteries (sometimes referred to as “Dry Cell” or “household” batteries) are not listed or regulated as dangerous goods under IATA Dangerous Goods Regulations, ICAO Technical Instructions, IMDG Code, UN Model Regulations, U.S. Hazardous Materials Regulations (49 CFR), and UNECE ADR. |
| UN Identification Number/ Shipping Name | None - Not Required |
| Special Provision (SP) Conformance | Special regulatory provisions require batteries to be packaged in a manner that prevents the generation of a dangerous quantity of heat and short circuits. Shippers can prepare batteries by taping the terminals, individually packaging batteries, or otherwise segregating the batteries to prevent risk of creating a short circuit. Batteries shipped in original unopened Duracell packaging is compliant. |
| US DOT SP | 49 CFR 172.102 Special Provision 130 |
| Air Transport (IATA/ICAO) SP | Special Provision A123 (IATA 57th Edition - 2016). NOTE: The words "NOT RESTRICTED" and "SPECIAL PROVISION A123" must be included on the description of the substance on the Air Waybill, when air way-bill is issued. |
| Passenger Air Travel | No restrictions |
| Emergency Transportation Hotline | CHEMTREC 24-Hour Emergency Response Hotline Within the United States call +703-527-3887 Outside the United States, call +1 703-527-3887 (Collect) |
| 10. Regulatory Information (GHS Section 15) | |
| 10a. Battery Requirements | |
| USA EPA Mercury Containing & Rechargeable Battery Management Act of 1996 | During the manufacturing process, no mercury is added. |
| EU Battery Directive 2006/66/EC & amendment 2013/56/EU | Compliant with marking and substance restrictions for mercury (<0.0005%); cadmium (<0.0020%) and lead (<0.0040%). Global labels are marked with the special collection symbol and the EU qualifier in accordance with EU Battery Directive 2006/66/EC, Article 11. Paragraph 1 on batteries and accumulators and waste batteries and accumulators |
| 10b. General Requirements | |
| USA CPSIA 2008 (PL. 11900314) | Exempt |
| USA CPSC FHSA (16 CFR 1500) | Consumer batteries are not listed as a hazardous product. |
| USA EPA TSCA Section 13 (40 CFR 707.20) | For customs clearance purpose, batteries are defined as an "Article". |
| USA EPA RCRA (40 CFR 261) | Classified as non-hazardous waste (not ignitable, corrosive, reactive or toxic). Federal Universal Waste Regulations (40 CFR 273) do not apply. State requirements may be more stringent than Federal. |
| California Prop 65 | No warning required per 3rd party assessment. |
| CANADA Products Containing Mercury Regulations SOR/20140254 | Mercury free |
| EU REACH SVHC's (169 Substances/Candidate List June 2016) | No listed substances are present (>0.01% w/w) |
| EU REACH Article 31 | SDS is not required consumer alkaline batteries. |
| 10c. Regulatory Definitions - Articles | |
| USA OSHA | 29 CFR 1910.1200(b)(6)(v) |
| USA TSCA | 40 CFR 704.3; 710.2(3)(c); and [19 CFR 12.1209a]] |
| EU REACH | Title 1 - Chapter 2 - Article 3(3) |
| GHS | Section 1.3.2.1 |

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11. Other Information

11a. AIS Hazard Communication Approaches (consulted in developing this document):

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| Globally Harmonized System (GHS) | GHS SDS requirements and classification criteria do not apply to articles or products (such as batteries) that have a fixed shape, which are not intended to release a chemical. The article exemption is found in Section 1.3.2.1.1 of the GHS and reads: <i>The GHS applies to pure substances and their dilute solutions and to mixtures. "Articles" as defined by the Hazard Communication Standard (29 CFR 1900.1200) of the OSHA of the USA, or by similar definition, are outside the scope of the system.</i> |
| Joint Article Management Promotion Consortium JAMP | JAMP is a Japanese Industry Association who developed the concept of an Article Information Sheet as a supply chain tool to share and communicate chemical information in articles. The AIS authoring process is based on "declarable" substances to meet global regulatory requirements as well as substances to be reported by GADSL, JIG, etc. |
| IEC 62474 Ed. 1.0 B:2012 Material Declaration for Products of and for the Electro-technical Industry | An international standard that came into effect in March 2012 concerning declaration for electrical and electronic products. IEC 6274 replaces the defunct Joint Industry Guide – Material Declaration for Electro-technical Products (JIG-101-Ed 4.1 (May 21, 2012) |
| IEC 62474 Database - Publically available online (maintained by TC11: Environmental Standardization for electrical and electronic products and systems. | The general principle for a substance to be included in the database as a declarable substance is: 1) existing national laws or regulations in an IEC member country that are relevant to Electro-technical products and that prohibit or restrict substances, or that have a labeling, communication, reporting or notification requirement, and 2) applying IEC 62474 criteria results in identification of declarable substance. |
| ANSI Z 400.1/Z19.1 (2010) | 2.1 Scope: Applies to preparation of SDSs for hazardous chemicals used under occupational conditions. Does not address how the standard may be applied to articles. It presents basic information on how to develop and write a SDS. Additional information is provided to help comply with state and federal environmental and safety laws and regulations. Elements of the standard may be acceptable for International use. |

DISCLAIMER: This AIS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered by Duracell to be dependable and is accurate to the best of the Company's knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations. This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. Duracell assumes no responsibility for injury to the recipient or third persons or for any damage to any property resulting from misuse of the product.