Article Information Sheet (AIS)

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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, IEC 62474, and ANSI C18.4M.

1. Document Information	
Document Name	**Duracell Lithium Coin Batteries (primary lithium metal cells and batteries)**
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Preparer	Product Safety & Regulatory (PSR)
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2. Company Information	
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Telephone	(203) 796 - 4000
Global Website	www.duracell.com
Consumer Relations: NA	North America: 1-800-551-2355 (9:00 AM - 5:00 PM EST)
Consumer Relations: E & A	(UK) 0800 716434, (FR) 0800 346 790 Service & appel gratuits, (IRL) 1 800 509 176, (DE) 800 101 2112, (AT) 0800 1025 1956, (CH) 0800 000 885, (BE) 0800 509 95, (NL) 0800 265 8616, (IT) 800 125 662, (ES) 900 800 522, (PT) 800 781 012, (GR) 210 66 75 000, (CY) 22-210900, (DK) 78734857, (SE) 0852503857, (FI) 0942705057, (NO) 63791957, (ZA) +27211403500, (RO) 021 3361915, (MD) 022472402, (BG) 02 40 24 500, (BIH) 033756000, (MNE) 020261920, (PL) 22 692 42 77, (LT) (8) 37 401 111, (LV) 67798667, (EE) +3726505555, (CZ) +420233332010, (SK) +42153419601, (HU) 0620 770 7099, (HR) 0800 0009, (SI) 01/588 6800, (AZ) 812 3100949, (UA) +380444909771 (ДП «САВ 92») & +380442476704 (ТОВ «ІНВЕСТКОМ»), (KZ) +7 727 250 05 50, (TM) 00865 530070, (KG) 0312 41 77 04 (Apple City International), (TR) 0 850 502 61 40.
3. Article Information	
Description	Duracell branded consumer lithium battery
Product Category	Electro-technical device
Use	Portable power source for electronic devices.
Global sub-brands (Retail)	Duracell, Ultra
Global sub-brands (B2B)	Bulk
Sizes	1220, 1616, 1632, 2016, 2025, 2032, 2430, 2450
IEC Designations	CR (1220, 1616, 1632, 2016, 2025, 2032, 2430. 2450)
Principles of Operation	A battery powers a device by converting stored chemical energy into electrical energy.

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Representative Product Images				
		Bulk		

4. Article Construction	
Applicable Battery Industry Standards	ANSI C18.3M Part 1, ANSI C18.3M Part 2, ANSI C18.4, IEC 60086,1, IEC 60086-2, IEC 60086-4
Electro-technical System	Lithium Manganese Dioxide
Electrode - Negative	Lithium Alloy (CAS # 7439-93-2; 0.5-6%)
Electrode - Positive	Manganese Dioxide (CAS # 1313-13-9; 12-50%)
Electrolyte	Organic Electrolyte (NO CAS#; 2.5-7%)
Electrolyte	1,2-Dimethoxyethane Solvent (CAS # 110-71-4; 1.5-3.5%)
Electrolyte	Lithium Perchlorate Salt (CAS # 7791-03-9; 0.2-0.7%)
Plastic Parts	Polypropylene (CAS# 9003-07-0; 0.5-10%)
Materials of Construction - Can	Steel (CAS #7431-89-6; 7440-47-3; 30-85%)
Declarable Substances (IEC 62474 Criteria 1)	1-2-Dimethoxyethane (CAS # 110-71-4)
Mercury Free Battery (ANSI C18.4M <5ppm)	Yes
Small Cell or Battery (ANSI C18.1M Part 2; IEC 60086-4	Lithium coin batteries fit inside a specially designed test cylinder 2.25 inches (57.1mm) long by 1.25 inches (31.70 mm) wide.
Bitternant (Denatonium benzoate; CAS# 3734-33-4) Bitterant Application Scope: Lithium Coin sizes 2032, 2025, and 2016 ONLY.	Lithium coin battery sizes 2016, 2025 & 2032 have a transparent layer of bitterant (denatonium benzoate) applied to the negative side of the coin cell. Denatonium benzoate has a long history of being added to many different types of consumer products to help prevent childhood ingestion of potentially harmful substances.

5. Health & Safety	
Ingestion/Small Parts Warning	Required for all sizes of lithium coin batteries: 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	**Note to Physician** – For information on battery identification and treatment, call the 24-hour **NATIONAL BATTERY INGESTION HOTLINE (800-498-8666).** Additional treatment information is available from the **NATIONAL CAPITAL POISON CONTROL CENTER BUTTON BATTERY INGESTION TRIAGE AND TREATMENT GUIDELINE: https://www.poison.org/battery/guideline.** If the patient is less than or equal to 12 years, immediately obtain an x-ray t o locate the battery. If the patient is > 12 years and the battery diameter is > than 12 mm or unknown also obtain an x-ray. X-rays should include the entire neck, esophagus and abdomen. Once the position of the battery in the esophagus is determined by x-ray and if less than 12 hours post ingestion consider giving sucralfate suspension 10ml by mouth every 10 minutes, up to 3 doses while waiting for sedation for endoscopy.

	Do not delay battery removal because a patient has eaten recently or was given honey or sucralfate by mouth. Batteries lodged in the esophagus should be removed immediately since battery leakage, caustic burns and perforation can occur as soon as two hours after ingestion. Endoscopic removal is preferred as it allows direct visualization of tissue injury. After the battery is removed from the esophagus if no perforation is evident irrigate the injured area with 50 mL to 150 mL of 0.25% sterile acetic acid and then observe for delayed complications. If a large battery (equal to or greater than 20 mm) is in the stomach or beyond of a child < 5 years, and based on history, might have lodged in the esophagus for > 2 hours, consider diagnostic endoscopy to exclude the remote possibility of esophageal injury. Retrieve batteries, endoscopically if possible, from the stomach or beyond if: 1) A magnet was also ingested, 2) The patient develops signs or symptoms that are likely related to a battery ingestion, or, 3) A large battery equal to or greater than 15 mm is ingested by a child younger than 6 years, remains in the stomach for 4 days or longer. Allow batteries to pass spontaneously if they have passed beyond the esophagus (stomach and beyond) and no clinical indication of any significant gastrointestinal injury is evident. Confirm battery passage by inspecting stools. Consider repeat radiographs to confirm passage if battery passage not observed in 10-14 days.
First Aid - If swallowed	**First Aid – If battery swallowed. DO NOT GIVE IPECAC.** Do not induce vomiting. Seek medical attention immediately and call 24 hour **NATIONAL BATTERY INGESTION HOTLINE (800-498-8666)** for assistance with battery identification and treatment. Attempt to determine battery imprint code (or diameter) of companion or replacement battery. If no imprint code is available, measure or estimate the battery diameter based on the size of the slot the battery fits or the size of the comparable battery. Provide this information to the treating health care provider. If the child is greater than 12 months of age and able to swallow, and the battery was swallowed within the prior 12 hours, if readily available administer honey immediately and while on route to the emergency room. Give 10 mL (2 teaspoons) of honey by mouth every 10 minutes for up to 6 doses. **Do not delay going to the ER to obtain or give honey.** Other than the honey do not give anything by mouth.
Poison Center/North America	**USA/CANADA CALLS ONLY: 1-800-498-8666 (Toll Free) [24 Hour National Battery Ingestion Hotline]**
Poison Centers /World Directory	http://globalcrisis.info/poisonemergency.html#AAA
First Aid - Eye Contact	Flush with running water for at least 30 minutes. Seek medical attention immediately.
First Aid - Skin Contact	Remove contaminated clothing and flush skin with running water for at least 15 minutes. Seek medical attention if irritation persists.
First Aid - Inhalation	Contents of leaking battery may be irritating to respiratory passages. Move to fresh air. Seek medical attention if irritation persists.
Battery Safety Standards & Testing	Duracell lithium coin cell batteries meet the requirements of ANSI C18. 3M Part 2 and IEC 60086-4. These standards specify tests and requirements for lithum primary cells and batteries to ensure safe operation under normal use and reasonably foreseeable misuse. The test regimes assess three conditions of safety. These are: **1-Intended use simulation:** Partial use, vibration, thermal shock, and mechanical shock **2-Reasonably foreseeable misuse:** Incorrect installation, external short-circuit, free fall (user-drop), over-discharge, and crush **3-Design consideration:** Thermal abuse, mold stress

Precautionary Statements	CAUTION: Keep batteries away from children. If swallowed, consult a physician at once. For information on treatment, within North America call **1-800-498-8666 (Toll Free)** . Ingestion may lead to serious injury or death. Cell can explode or leak if heated, disassembled, shorted, recharged, exposed to fire or high temperature or inserted incorrectly. Keep in original package until ready to use. 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. For incipient (beginning) fires, carbon dioxide extinguishers or copious amounts of water are effective in cooling burning lithium metal batteries. If fire progresses to where lithium metal is exposed (deep red flames), use a Class D extinguisher suitable for lithium metal.
Fires Involving Large Quantities of Batteries	Large quantities of batteries involved in a fire will rupture and release irritating fumes from thermal degradation Use a Class “D” fire extinguisher or other smothering agent such as Lith-X, copper powder or dry sand. If using water, use enough to smother the fire. Using an insufficient amount of water will make the fire worse. Cooling exterior of batteries will help prevent rupturing. Burning batteries generate toxic and corrosive lithium hydroxide fumes. Firefighters should wear self-contained breathing apparatus. Detailed information on fighting a lithium metal battery fire can be found in US DOT Emergency Response Guide 138 (Substances–Water–Reactive).
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)	"Charged" lithium coin batteries meet the criteria (D003 - Reactivity) of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.23. If recycled, lithium coin batteries are classified as Universal Waste.

USA DOT (49 CFR 173.184 (d))	d) Lithium cells or batteries shipped for disposal or recycling. A lithium cell or battery, including a lithium cell or battery contained in equipment, that is transported by motor vehicle to a permitted storage facility or disposal site, or for purposes of recycling, is excepted from the testing and record keeping requirements of paragraph (a) and the specification packaging requirements of paragraph (b)(3) of this section, when packed in a strong outer packaging conforming to the requirements of §§173.24 and 173.24a. A lithium cell or battery that meets the size, packaging, and hazard communication conditions in paragraph (c)(1)-(3) of this section is excepted from subparts C through H of part 172 of this subchapter.
California Universal Waste Rule (Cal. Code Regs. Title 22, Div. 4.5, Ch. 23)	California prohibits disposal of batteries as trash (including household trash).
Vermont Primary Battery Stewardship Law (ACT 139)	In Vermont, consumers must recycle lithium coin batteries. For information, contact http://www.call2recycle.org.

9. Transport Information (GHS Section 14)

UN38.3 Test Summary Documents	**UN38.3 Test Summary Documents that are required January 1, 2020 by the UN Model Regulations, 20th Revised Edition, 2.9.4 can be requested by sending an email request to UN38.3_duracell@duracell.com**
Regulatory Status	Duracell lithium coin batteries are produced and delivered in accordance with current IATA/ICAO regulations. Duracell lithium coin batteries can be shipped in accordance with ICAO, 2018 edition or IATA 2020- 61st edition. Shipping packages for all DURACELL lithium cells/batteries are designed to prevent: short circuits, movement within the package, damge to the cells/batteries, and release of the package contents. Persons who prepare or offer lithium batteries for transport are required by regulation to be trained to the extent of their responsibility. The information in this section is provided for informational purposes only. The transportation of lithium metal batteries is regulated by ICAO, IATA, IMO and US DOT. Duracell lithium coin batteries are not subject to the other provisions of the Dangerous Goods regulations as long as they are packaged and marked in accordance with the applicable regulations.
DEFECTIVE Lithium Batteries	Defective Lithium batteries are **forbidden** on both Passenger and Cargo Aircraft. For all other modes of transportation, defective lithium batteries are fully regulated as **Dangerous Goods.**

Total Lithium Content (grams)	**Size**	**Total Lithium Content (Grams)**	**Total Coin Weight (grams)**
	1220	0.01	1.0
	1616	0.02	1.2
	1620	0.04	1.3
	1632	0.04	1.8
	2016	0.03	2.0
	2025	0.05	2.4
	2032	0.07	2.95
	2430	0.9	4.5
	2450	0.18	6.3

UN Identification Number/ Shipping Name	UN3090 Primary lithium metal batteries UN3091 Primary lithium metal batteries packed with or contained in equipment

UN 38.3 Transportation Tests	Duracell certifies that all of its lithium batteries meet the requirements of the UN Manual of Tests and Criteria, Part III subsection 38.3. If you assemble these batteries into larger battery packs, it is recommended that you perform the UN Tests to ensure the requirements are met prior to shipment.
Special Provisions 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.
USA DOT Special Provision	49 CFR 173.185(c) SP A101
USA DOT Exceptions for Lithium Cells or Batteries Shipped for Disposal or Recycling	40 CFR 173.185(d)
Air Transport (IATA/ICAO) Packing Instructions	PI 968 – Lithium metal batteries PI 969 – Lithium metal batteries packed with equipment PI 970 – Lithium metal batteries contained in equipment
Marine/Water Transport (IMDG) Special Provision	188
ADR/RID Special Provision	188
Passenger Air Travel	Air travelers should consult the US Department of Transportation (DOT) Safety Travel web site at http://safetravel.dot.gov for guidance regarding carry on of lithium batteries.
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%)l and lead (<0.0040%). EU retail and bulk packaging containing lithium coin batteries are marked with the special collection sysmbol in accordance with Article 21.
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)	"Charged" lithium coin batteries meet the criteria (D003 - Reactivity) of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.23. If recycled, lithium coin batteries are classified as Universal Waste.
USA California Prop 65	No warning required per 3rd party assessment.
USA California Perchlorate Contamination Prevention Act of 2003	Contains perchlorate. Required labeling: Perchlorate material - special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate
CANADA Products Containing Mercury Regulations SOR/20140254	Mercury free
EU REACH REGULATION (EC) NO. 1907/2006	Regulated as an "article." Contains 1,2-dimethoxyethane (CAS# 110-71-4).

EU REACH SVHC Communication	SVHC Substance Name: 1,2-dimethoxyethane (EGDME) Use: Incorporated in a lithium battery as electrolyte solvent EINEC Number: 203-794-9 CAS Number: 110-71-4 Concentration: The battery contains EGDME –SVHC in a concentration ranging from 1.5 - 3.5% by weight. Because the battery is sealed, 100% of the EGDME-SVHC is contained in the battery. Safe Handling: Do not open the battery or disassemble it. Do not expose to fire or high temperatures (>60°C). At end of life, the battery should be taken back to the nearest collection point established by a National Collection Scheme used for batteries.
EU REACH Article 31	An SDS is not required for articles.
10c. Regulatory Definitions - Articles	An SDS is not required for 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
11. Other Information	
11a. Certification & 3rd Party Approvals	
UL Listing	Lithium Batteries - Component BBCV2.MH12538
11b. AIS Hazard Communication Approaches (consulted in developing this document):	
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: ***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."***
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 (http://std.iec.ch/iec62474). 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.

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ANSI C18.4M-2017 Portable Cells and Batteries - Environmental	This standard provides regulatory guidance and a template to author an article information sheet for a portable consumer battery. See Annex C.2 (Informative) Safety Data Sheets and Annex E (Informative) Article Information Sheet.

DISCLAIMER: This AIS is intended to provide a brief summary of our knowledge and guidance regarding the use of this article. 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.