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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	
Document Name	**Duracell Lithium HPL Cells and Batteries**
Document ID	AIS-Li HPL
Issue Date	1-Sep-15
Version	1
Preparer	Product Safety & Regulatory
Last Revision	12/7/2022
Information Contact	SDS@duracell.com
2. Company Information	
Name & Address	Duracell US Operations, 14 Research Drive, Bethel, CT USA 06801. Duracell Batteries BV, Nijverheidslaan 7, 3200 Aarschot, Belgium. Duracell International Operations Sàrl, Rue du Pré-de-la-Bichette 1, CH-1202, Geneva, Switzerland. & EU Website duracell.info
Telephone	(203) 796-4000
Global Website	www.duracell. com
Consumer Relations	North America: 1-800-551-2355 (9:00 AM - 5:00 PM EST)
Consumer Relations:	**Latin America** (Brazil) 0 800 727 1165, (Chile) 188 800 224 488, (México) 0 1800 283 2901 (Rest of Latin America) duracell.mx.help **Europe** (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-FI-NO-SE) +46 8 799 1926, (NO) 63791957, (ZA) 0800980782, (RO) 021 3361915, (IS) +354 5222700, (MD) +373 0800700 88, (BG) 02 40 24 500, (BIH) 033756000, (MNE) 020261920, (PL) 00800 77628282, (LT) +370 656 40111, (LV) +371 670 48400, (EE) +3726505555, (CZ) +420 233 325 614, (SK) +42153419601, (HU) 0620 770 7099, (HR) 0800 0009, (SI) 01/588 6800, (AZ) 99412 5990511, (UA) +380444909771 (ПрАТ "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, (BG)02/40 24 500, (BIH) 38733756000, (UZ) 998 900123313 **Asia** (CN) 4008850883, (HK) 800-969-950, (TW) 0800-251-122, (AU) 1-800-239901, (NZ) 0800-44-6869, (KP) 080-393-3000, (SG) 800-120-5608, (TH) 001 800 852 6595, (VN) 120 11543, (MY) 1-800-81-5379, (ID)001-803-0167294, (PH) 1-800-1110-1392, (IN) 1800-120-7897
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
Model Numbers/IEC Designations (physical descriptions)	CR2 (CR15H270), CR-V3, 1/3N (CR/DL 1/3N, CR11108), 123 (123A, CR123A, DL123A, CR17345), 2/3A (CR123A, DL123A, CR17345), 223 (CR223, CR-P2, DL223), 245 (CR245, 2CR5, DL245), 28L (PX28L, 2CR11108, 2CR13252)
Principles of Operation	A battery powers a device by converting stored chemical energy into electrical energy.

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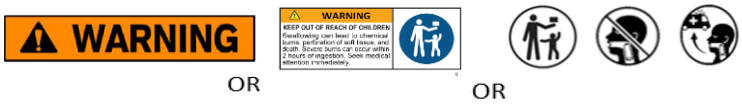
4. Article Construction	
Applicable Battery Industry Standards	ANSI C18.3M Part 1, ANSI C18.3M Part 2, ANSI C18.4, IEC 60086,1, IEC 60086-2, IEC 60086-4
Electro-technical System	Lithium Manganese Dioxide
Electrode - Negative	Lithium Alloy (CAS # 7439-93-2)
Electrode - Positive	Manganese Dioxide (CAS # 1313-13-9)
Electrolyte	Propylene Carbonate Solvent (CAS # 108-32-7)
Electrolyte	1,2-Dimethoxyethane Solvent (CAS # 110-71-4)
Materials of Construction - Can	Steel (CAS # 110-71-4)
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 60086-5)	N/A
5. Health & Safety	
Ingestion	Required for all sizes of lithium coin batteries: Keepout of reach of children. If swallowed, consult a physician immediately. ANSI or IEC requirements 
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.
First Aid - If swallowed	Required for sizes 1/3N, 123, 28L, CR2: Keep away from children. If swallowed, consult a physician immediately. Call National Ingestion Hotline (800-408-8666).
Note to Physician	For information on battery identification and treatment, call the 24- hour National Battery Ingestion Hotline (800-408-8666). 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 to 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 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.

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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 metal batteries meet the requirements of ANSI C18. 3M Part 2 and IEC 60086-4. These standards specify tests and requirements for lithium 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 (202) 625-3333 collect. 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.

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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 metal batteries meet the criteria (D003 - Reactivity) of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CRT 261.23. If recycled, lithium metal 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.

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California Universal Waste Rule (Cal. Code Regs. Title 22, Div. 4.5, Ch. 23)	California prohibits disposal of batteries as trash (including household trash).
Requirements of EU	After use, the cells and/or batteries must be disposed separately from unsorted municipal waste and delivered to a commerical or authorized collection/recycling facility 
Requirements of Brazil	Afte use, the cells and/or batteries must be delivered to the commercial establishment of authorized technical assistance network. 
9. Transport Information (GHS Section 14)	
Regulatory Status	Duracell Lithium Coin Batteries are manufactured and distributed according to current global transportation regulations. The shipping cartons for all Duracell Lithium cells/batteries are designed to prevent short circuit, displacement within the package, damage to the batteries and release of the contents of the package. Persons preparing or distributing lithium batteries for transportation are required by regulations to be trained in their level of responsibility. The information in this section has been provided for clarification. The transportation of lithium metal batteries is regulated by ICAO, IATA, IMDG,IMO, US DOT,ADR.

Total Lithium Content (grams)

Catalog No.	Total Lithium Content (grams)	Type	Total Cell/Battery Weight (grams)
1/3N	0.06	Cell	3
123	0.55	Cell	17
223	1.1	Battery	38
28L	0.12	Battery	9.4
CR-V3	1.4	Battery	39
CR2	0.26	Cell	11
245	1.1	Battery	38.6

UN Identification Number/ Shipping Name	UN3090 Lithium metal batteries UN3091 Lithium metal batteries packed with or contained in equipment
UN 38.3 Transportation Tests	UN38.3 Test Summary Documents that are required by the UN Model Regulations, can be requested by sending an email request to UN38.3_duracell@duracell.com
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. 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.
Air Transport IATA 64th edition, ICAO	Packaging Instructions (PI) 968-970
Marine/Water Transport (IMDG) - SP	188, 230, 310, 957
US DOT - SP	29, A54, A100, A101
ADR/RID SP	188, 230, 310, 957
ANTT (National land Transportation Agency	Regulation 5232, 14 Dec 2016; SP 188, 230, 310, 376; Packaging Instructions P903 Complementary Instructions 5947/, 1 July 2021
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.

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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 metal 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 metal 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 metal batteries are classified as Universal Waste.
USA California Prop 65	No warning required per 3rd party assessment.
CANADA Products Containing Mercury Regulations SOR/20140254	Mercury free
EU REACH SVHC's	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 1.0 to 5.0% 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.
Japan: JIS C 8513:2020	Safety of primary lithium batteries, 2020 which specifies the necessary requirements and test methods to ensure safety during intended use and reasonably foreseeable misuse of lithium primary batteries.
EU REACH Article 31	An SDS is not required for articles.
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
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.

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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.
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.