

## Technical Data Sheet (TDS)

This Technical Data Sheet (TDS) 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	
<b>Document Name</b>	<b>Duracell Lithium HPL Cells and Batteries (primary lithium metal cells and batteries)</b>
<b>Document ID</b>	AIS-Li HPL
<b>Issue Date</b>	8-Dec-15
<b>Version</b>	3b
<b>Preparer</b>	Product Safety & Regulatory (PSR)
<b>Last Revision</b>	9/1/2017
<b>Information Contact</b>	<a href="mailto:moquet.l@duracell.com">moquet.l@duracell.com</a>
2. Company Information	
<b>Name &amp; Address</b>	Duracell US Operations, Inc. 14 Research Drive, Bethel, CT 06801
<b>Telephone</b>	(203) 796-4000
<b>Website</b>	<a href="http://www.duracell.com">www.duracell.com</a>
<b>Consumer Relations</b>	North America: 1-800-551-2355 (9:00 AM - 5:00 PM EST)
3. Article Information	
<b>Description</b>	Duracell branded consumer lithium battery
<b>Product Category</b>	Electro-technical device
<b>Use</b>	Portable power source for electronic devices
<b>Global sub-brands (Retail)</b>	Duracell, Ultra
<b>Global sub-brands (B2B)</b>	Bulk
<b>Sizes</b>	DLCR-2, DLCR-V3, DL1/3N, DL123(DL123A; DL2/3A), DL223 (DL223A), DL245, DL1604, PL123, PX28L
<b>IEC Designation (IEC-60086-2; Annex D)</b>	CR-P2, 2CR5, CR15H270, CR11108, 2CR13252, CR17345
<b>Principles of Operation</b>	A battery powers a device by converting stored chemical energy into electrical energy.
<b>Representative Product Images</b>	
4. Article Construction	
<b>Applicable Battery Industry Standards</b>	ANSI C18.3M Part 1, ANSI C18.3M Part 2, ANSI C18.4, IEC 60086,1, IEC 60086-2, IEC 60086-4
<b>Electro-technical System</b>	Lithium Manganese Dioxide
<b>Electrode - Negative</b>	Lithium Alloy (CAS # 7439-93-2)
<b>Electrode - Positive</b>	Manganese Dioxide (CAS # 1313-13-9)
<b>Electrolyte</b>	Propylene Carbonate Solvent (CAS # 108-32-7)
<b>Electrolyte</b>	1,2-Dimethoxyethane Solvent (CAS # 110-71-4)
<b>Materials of Construction - Can</b>	Steel (CAS # 110-71-4)
<b>Declarable Substances (IEC 62474 Criteria 1)</b>	1-2-Dimethoxyethane (CAS # 110-71-4)

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<b>Mercury Free Battery (ANSI C18.4M &lt;5ppm)</b>	Yes
<b>Small Cell or Battery (ANSI C18.1M Part 2; IEC 60086-5)</b>	Sizes 1/3N, 123, 28L, CR2 fit inside a specially designed test cylinder 2.25 inches (57.1 mm) long by 1.25 inches (31.70 mm) wide.
<b>5. Health &amp; Safety</b>	
<b>Ingestion</b>	<u>Required for sizes 1/3N, 123, 28L, CR2:</u> Keep away from children. If swallowed, consult a physician immediately.
<b>Normal Conditions of Use</b>	Exposure to contents inside the sealed battery will not occur unless the battery leaks, is exposed to high temperatures, or is mechanically abused.
<b>Note to Physician</b>	<u>Cell Ingestion:</u> Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. Irritation to the internal/external mouth areas may occur following exposure to a leaking battery. Published reports recommend removal from the esophagus should be done endoscopically (under direct visualization). Batteries beyond the esophagus need not be retrieved unless there are signs of injury to the GI tract or a large diameter battery fails to pass the pylorus. If asymptomatic, follow-up x-rays are necessary only to confirm the passage of larger batteries. Confirmation by stool inspection is preferable under most circumstances. For information on treatment, call the NATIONAL BATTERY INGESTION HOTLINE (telephone number below).
<b>First Aid - If swallowed</b>	<u>DO NOT GIVE IPECAC.</u> Do not induce vomiting. Seek medical attention immediately and call 24-HOUR BATTERY INGESTION HOTLINE (telephone number below). If mouth area irritation or burning has occurred, rinse mouth and surrounding area with tepid water for at least 15 minutes..
<b>24-Hour National Battery Ingestion Hotline</b>	<b>USA Calls Only: 1-800-498-8666 (Toll Free)</b> CANADA: (202) 625-3333 (Collect)
<b>First Aid - Eye Contact</b>	Flush with running water for at least 30 minutes. Seek medical attention immediately.
<b>First Aid - Skin Contact</b>	Remove contaminated clothing and flush skin with running water for at least 15 minutes. Seek medical attention if irritation persists.
<b>First Aid - Inhalation</b>	Contents of leaking battery may be irritating to respiratory passages. Move to fresh air. Seek medical attention if irritation persists.
<b>Battery Safety Standards &amp; Testing</b>	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: <u>1-Intended use simulation:</u> Partial use, vibration, thermal shock, and mechanical shock <u>2-Reasonably foreseeable misuse:</u> Incorrect installation, external short-circuit, free fall (user-drop), over-discharge, and crush <u>3-Design consideration:</u> Thermal abuse, mold stress
<b>Precautionary Statements</b>	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.

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<b>6. Fire Hazard &amp; Firefighting</b>	
<b>Fire Hazard</b>	Batteries may rupture or leak if involved in a fire.
<b>Extinguishing Media</b>	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.
<b>Fires Involving Large Quantities of Batteries</b>	<p>Large quantities of batteries involved in a fire will rupture and release irritating fumes from thermal degradation</p> <p>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).</p>
<b>7. Handling &amp; Storage</b>	
<b>Handling Precautions</b>	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.
<b>Storage Precautions</b>	Store batteries in a dry place at normal room temperature. Refrigeration does not make them last longer.
<b>Spills of Large Quantities of Loose Batteries (unpackaged)</b>	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 personal protective equipment 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.
<b>8. Disposal Considerations (GHS Section 13)</b>	
<b>Collection &amp; Proper Disposal</b>	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.
<b>USA EPA RCRA (40 CFR 261)</b>	"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.

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<p><b>USA DOT (49 CFR 173.184 (d))</b></p>	<p>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.</p>																																				
<p><b>California Universal Waste Rule (Cal. Code Regs. Title 22, Div. 4.5, Ch. 23)</b></p>	<p>California prohibits disposal of batteries as trash (including household trash).</p>																																				
<p><b>Vermont Primary Battery Stewardship Law (ACT 139)</b></p>	<p>In Vermont, consumers must recycle lithium batteries. For information, contact <a href="http://www.call2recycle.org">http://www.call2recycle.org</a>.</p>																																				
<p><b>9. Transport Information (GHS Section 14)</b></p>																																					
<p><b>Regulatory Status</b></p>	<p>Duracell lithium metal batteries are produced and delivered in accordance with current IATA/ICAO regulations. Duracell lithium metal batteries can be by air shipped in accordance with ICAO or IATA. Shipping packages for all DURACELL lithium cells/batteries are designed to prevent: short circuits, movement within the package, damage 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, ADR and US DOT.</p>																																				
<p><b>DEFECTIVE Lithium Batteries</b></p>	<p>Defective Lithium batteries are <b>forbidden</b> on both Passenger and Cargo Aircraft. For all other modes of transportation, defective lithium batteries are fully regulated as <b><u>Dangerous Goods</u></b>.</p>																																				
<p><b>Total Lithium Content (grams)</b></p>	<p>See below for each catalog number:</p> <table border="1" data-bbox="565 1205 1461 1577"> <thead> <tr> <th>Catalog No.</th> <th>Total Lithium Content (grams)</th> <th>Type</th> <th>Total Cell/Battery Weight (grams)</th> </tr> </thead> <tbody> <tr> <td>DL 1/3N</td> <td>0.06</td> <td>Cell</td> <td>3</td> </tr> <tr> <td>DL 123</td> <td>0.55</td> <td>Cell</td> <td>17</td> </tr> <tr> <td>DL 223</td> <td>1.1</td> <td>Battery</td> <td>38</td> </tr> <tr> <td>PX 28L</td> <td>0.12</td> <td>Battery</td> <td>9.4</td> </tr> <tr> <td>CR-V3</td> <td>1.4</td> <td>Battery</td> <td>39</td> </tr> <tr> <td>DL CR2</td> <td>0.26</td> <td>Cell</td> <td>11</td> </tr> <tr> <td>DL 245</td> <td>1.1</td> <td>Battery</td> <td>38.6</td> </tr> <tr> <td>DL 1604</td> <td>0.9</td> <td>Battery</td> <td>34</td> </tr> </tbody> </table>	Catalog No.	Total Lithium Content (grams)	Type	Total Cell/Battery Weight (grams)	DL 1/3N	0.06	Cell	3	DL 123	0.55	Cell	17	DL 223	1.1	Battery	38	PX 28L	0.12	Battery	9.4	CR-V3	1.4	Battery	39	DL CR2	0.26	Cell	11	DL 245	1.1	Battery	38.6	DL 1604	0.9	Battery	34
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<p><b>UN Identification Number/ Shipping Name</b></p>	<p>UN3090 Lithium metal batteries UN3091 Lithium metal batteries packed with or contained in equipment</p>																																				
<p><b>UN 38.3 Transportation Tests</b></p>	<p>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.</p>																																				
<p><b>Special Provisions Conformance</b></p>	<p>Special regulatory provisions require batteries to be packaged in a manner that prevents the generation of a dangerous quantity of heat and short circuits.</p>																																				

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<b>USA DOT Special Provision</b>	49 CFR 173.185( c) SP A101 (packed within equipment by air)
<b>USA DOT Exceptions for Lithium Cells or Batteries Shipped for Disposal or Recycling</b>	40 CFR 173.185(d)
<b>Air Transport (IATA/ICAO) Packing Instructions (58th edition/2017)</b>	PI 968 – Lithium metal batteries (shipped alone) <b>Note: Per IATA, on <u>April 1, 2016</u> PI 968 Section II will be amended to limit to 1 the quantity of packages offered for consignment, quantity (1) in an overpack and the package must be offered separately from other cargo.</b> PI 969 – Lithium metal batteries packed with equipment PI 970 – Lithium metal batteries contained in equipment
<b>Marine/Water Transport (IMDG) Special Provision</b>	188
<b>ADR/RID Special Provision</b>	188
<b>Passenger Air Travel</b>	Air travelers should consult the US Department of Transportation (DOT) Safety Travel web site at <a href="http://safetravel.dot.gov">http://safetravel.dot.gov</a> for guidance regarding carry on of lithium batteries.
<b>Emergency Transportation Hotline</b>	<b>CHEMTREC 24-Hour Emergency Response Hotline</b> <b>Within the United States call +703-527-3887</b> <b>Outside the United States, call +1 703-527-3887 (Collect)</b>
<b>10. Regulatory Information (GHS Section 15)</b>	
<b>10a. Battery Requirements</b>	
<b>USA EPA Mercury Containing &amp; Rechargeable Battery Management Act of 1996</b>	During the manufacturing process, no mercury is added.
<b>EU Battery Directive 2006/66/EC &amp; amendment 2013/56/EU</b>	Compliant with marking and substance restrictions for mercury (<0.0005%); cadmium (<0.0020%) and lead (<0.0040%). EU retail and bulk packaging containing lithium metal batteries are marked with the special collection symbol in accordance with Article 21.
<b>10b. General Requirements</b>	
<b>USA CPSIA 2008 (PL. 11900314)</b>	Exempt
<b>USA CPSC FHSA (16 CFR 1500)</b>	Consumer batteries are not listed as a hazardous product.
<b>USA EPA TSCA Section 13 (40 CFR 707.20)</b>	For customs clearance purpose, batteries are defined as an "Article".
<b>USA EPA RCRA (40 CFR 261)</b>	"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.
<b>USA California Prop 65</b>	No warning required per 3rd party assessment.
<b>CANADA Products Containing Mercury Regulations SOR/20140254</b>	Mercury free
<b>EU REACH REGULATION (EC) NO. 1907/2006</b>	Regulated as an "article." Contains 1,2-dimethoxyethane (CAS# 110-71-4). If needed, a declaration (DoC) confirming the current SVHC Candidate List can be downloaded from the Duracell web site ( <a href="https://www.duracell.com/en-us/for-business/">https://www.duracell.com/en-us/for-business/</a> ) Folder: "Environmental & Regulatory."

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<p><b>EU REACH SVHC Communication</b></p>	<p><u>SVHC Substance Name:</u> 1,2-dimethoxyethane (EGDME)  <u>Use:</u> Incorporated in a lithium battery as electrolyte solvent  <u>EINEC Number:</u> 203-794-9  <u>CAS Number:</u> 110-71-4  <u>Concentration:</u> The battery contains EGDME –SVHC in a concentration ranging from 1.0 to 10.0% by weight. Because the battery is sealed, 100% of the EGDME-SVHC is contained in the battery.  <u>Safe Handling:</u> Do not open the battery or disassemble it. Do not expose to fire or high temperatures (&gt;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.</p>
<p><b>EU REACH Article 31</b></p>	<p>An SDS is not required for articles.</p>
<p><b>10c. Regulatory Definitions - Articles</b></p>	
<p><b>USA OSHA</b></p>	<p>29 CFR 1910.1200(b)(6)(v)</p>
<p><b>USA TSCA</b></p>	<p>40 CFR 704.3; 710.2(3)( c); and [19 CFR 12.1209a]]</p>
<p><b>EU REACH</b></p>	<p>Title 1 - Chapter 2 - Article 3(3)</p>
<p><b>GHS</b></p>	<p>Section 1.3.2.1</p>
<p><b>11. Other Information</b></p>	
<p><b>11a. Certification &amp; 3rd Party Approvals</b></p>	
<p><b>UL Listing</b></p>	<p>Lithium Batteries - Component BBCV2.MH12538</p>
<p><b>11b. AIS Hazard Communication Approaches (consulted in developing this document):</b></p>	
<p><b>Globally Harmonized System (GHS)</b></p>	<p>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:  <b><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></b></p>
<p><b>Joint Article Management Promotion Consortium JAMP</b></p>	<p>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.</p>
<p><b>IEC 62474 Ed. 1.0 B:2012 Material Declaration for Products of and for the Electro-technical Industry</b></p>	<p>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)</p>
<p><b>IEC 62474 Database - Publically available online (<a href="http://std.iec.ch/iec62474">http://std.iec.ch/iec62474</a>). Maintained by TC11: Environmental Standardization for electrical and electronic products and systems.</b></p>	<p>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.</p>
<p><b>ANSI Z 400.1/Z19.1 (2010)</b></p>	<p>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.</p>

## Technical Data Sheet (TDS)

**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.

**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			
<b>Document Name</b>	<b>Duracell Lithium Coin Batteries (primary lithium metal cells and batteries)</b>		
<b>Document ID</b>	AIS-LiCoin		
<b>Issue Date</b>	1-Jul-15		
<b>Version</b>	2b		
<b>Preparer</b>	Global Product Stewardship		
<b>Last Revision</b>	2/24/2016		
<b>Information Contact</b>	<a href="mailto:benoit.sa@duracell.com">benoit.sa@duracell.com</a>		
2. Company Information			
<b>Name &amp; Address</b>	Duracell Global Business Unit, 14 Research Drive, Bethel, CT USA 06801		
<b>Telephone</b>	(203) 796 - 4000		
<b>Website</b>	<a href="http://www.duracell.com">www.duracell.com</a>		
<b>Consumer Relations</b>	North America: 1-800-551-2355 (9:00 AM - 5:00 PM EST)		
3. Article Information			
<b>Description</b>	Duracell branded consumer lithium battery		
<b>Product Category</b>	Electro-technical device		
<b>Use</b>	Portable power source for electronic devices		
<b>Global sub-brands (Retail)</b>	Duracell, Ultra		
<b>Global sub-brands (B2B)</b>	Bulk		
<b>Sizes</b>	1025, 1216, 1220, 1225, 1612, 1616, 1620, 1632, 2016, 2025, 2032, 2320, 2325, 2330, 2354, 2412, 2430, 2450, 2477		
<b>IEC Designations</b>	CR (1025, 1216, 1220, 1225, 1612, 1616, 1620, 1632, 2016, 2025, 2032, 2320, 2325, 2330, 2354, 2412, 2430, 2450, 2477)		
<b>Principles of Operation</b>	A battery powers a device by converting stored chemical energy into electrical energy.		
<b>Representative Product Images</b>	 		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;"><b>Retail</b></td> <td style="width: 50%; text-align: center;"><b>Bulk</b></td> </tr> </table>	<b>Retail</b>	<b>Bulk</b>
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4. Article Construction			
<b>Applicable Battery Industry Standards</b>	ANSI C18.3M Part 1, ANSI C18.3M Part 2, ANSI C18.4, IEC 60086,1, IEC 60086-2, IEC 60086-4		
<b>Electro-technical System</b>	Lithium Manganese Dioxide		
<b>Electrode - Negative</b>	Lithium Alloy (CAS # 7439-93-2)		
<b>Electrode - Positive</b>	Manganese Dioxide (CAS # 1313-13-9)		
<b>Electrolyte</b>	Propylene Carbonate Solvent (CAS # 108-32-7)		
<b>Electrolyte</b>	1,2-Dimethoxyethane Solvent (CAS # 110-71-4)		
<b>Electrolyte</b>	Lithium Perchlorate Salt (CAS # 7791-03-9)		
<b>Materials of Construction - Can</b>	Steel (CAS # 110-71-4)		
<b>Declarable Substances (IEC 62474 Criteria 1)</b>	1-2-Dimethoxyethane (CAS # 110-71-4)		
<b>Mercury Free Battery (ANSI C18.4M &lt;5nm)</b>	Yes		
<b>Small Cell or Battery (ANSI C18.1M Part 2; IEC 60086-5)</b>	Lithium coin batteries fit inside a specially designed test cylinder 2.25 inches (57.1mm) long by 1.25 inches (31.70 mm) wide.		



**Article Information Sheet (AIS)**

<b>5. Health &amp; Safety</b>	
<b>Ingestion/Small Parts Warning</b>	<u>Required for all sizes of lithium coin batteries:</u> Keep away from children. If swallowed, consult a physician immediately.
<b>Normal Conditions of Use</b>	Exposure to contents inside the sealed battery will not occur unless the battery leaks, is exposed to high temperatures, or is mechanically abused.
<b>Note to Physician</b>	<u>Cell Ingestion:</u> Batteries lodged in the esophagus should be removed immediately since leakage, caustic burns and perforation can occur as soon as two hours after ingestion. Irritation to the internal/external mouth areas may occur following exposure to a leaking battery. Published reports recommend removal from the esophagus should be done endoscopically (under direct visualization). Batteries beyond the esophagus need not be retrieved unless there are signs of injury to the GI tract or a large diameter battery fails to pass the pylorus. If asymptomatic, follow-up x-rays are necessary only to confirm the passage of larger batteries. Confirmation by stool inspection is preferable under most circumstances. For information on treatment, call the NATIONAL BATTERY INGESTION HOTLINE @ (202) 625-3333 collect, day or night (USA calls only).
<b>First Aid - If swallowed</b>	<u>DO NOT GIVE IPECAC.</u> Do not induce vomiting. Seek medical attention immediately. USA: CALL NATIONAL BATTERY INGESTION HOTLINE @ (202) 625-3333 COLLECT, DAY OR NIGHT. If mouth area irritation or burning has occurred, rinse mouth and surrounding area with tepdi water for at least 15 minutes..
<b>First Aid - Eye Contact</b>	Flush with running water for at least 30 minutes. Seek medical attention immediately.
<b>First Aid - Skin Contact</b>	Remove contaminated clothing and flush skin with running water for at least 15 minutes. Seek medical attention if irritation persists.
<b>First Aid - Inhalation</b>	Contents of leaking battery may be irritating to respiratory passages. Move to fresh air. Seek medical attention if irritation persists.
<b>Battery Safety Standards &amp; Testing</b>	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 alkaline batteries to ensure safe operation under normal use and reasonably foreseeable misuse. The test regimes assess three conditions of safety. These are: <u>1-Intended use simulation:</u> Partial use, vibration, thermal shock, and mechanical shock <u>2-Reasonably foreseeable misuse:</u> Incorrect installation, external short-circuit, free fall (user-drop), over-discharge, and crush <u>3-Design consideration:</u> Thermal abuse, mold stress
<b>Precautionary Statements</b>	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.
<b>6. Fire Hazard &amp; Firefighting</b>	
<b>Fire Hazard</b>	Batteries may rupture or leak if involved in a fire.
<b>Extinguishing Media</b>	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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<p><b>Fires Involving Large Quantities of Batteries</b></p>	<p>Large quantities of batteries involved in a fire will rupture and release irritating fumes from thermal degradation</p> <p>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)</p>
<p><b>7. Handling &amp; Storage</b></p>	
<p><b>Handling Precautions</b></p>	<p>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.</p>
<p><b>Storage Precautions</b></p>	<p>Store batteries in a dry place at normal room temperature. Refrigeration does not make them last longer.</p>
<p><b>Spills of Large Quantities of Loose Batteries (unpackaged)</b></p>	<p>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.</p>
<p><b>8. Disposal Considerations (GHS Section 13)</b></p>	
<p><b>Collection &amp; Proper Disposal</b></p>	<p>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.</p>
<p><b>USA EPA RCRA (40 CFR 261)</b></p>	<p>"Charged" lithium coin 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 coin batteries are classified as Universal Waste.</p>
<p><b>USA DOT (49 CFR 173.184 (d))</b></p>	<p>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.</p>
<p><b>California Universal Waste Rule (Cal. Code Regs. Title 22, Div. 4.5, Ch. 23)</b></p>	<p>California prohibits disposal of batteries as trash (including household trash).</p>
<p><b>9. Transport Information (GHS Section 14)</b></p>	

**Article Information Sheet (AIS)**

<b>Regulatory Status</b>	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, 2013-2014 edition or IATA 2016- 57th edition. 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.
<b>Total Lithium Content (grams)</b>	The lithium metal content of each coin cell is less than 0.3g.
<b>UN Identification Number/ Shipping Name</b>	UN3090 Primary lithium metal batteries UN3091 Primary lithium metal batteries packed with or contained in equipment
<b>UN 38.3 Transportation Tests</b>	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.
<b>Special Provisions Conformance</b>	Special regulatory provisions require batteries to be packaged in a manner that prevents the generation of a dangerous quantity of heat and short circuits.
<b>USA DOT Special Provision</b>	49 CFR 173.185( c) SP A101
<b>USA DOT Exceptions for Lithium Cells or Batteries Shipped for Disposal or Recycling</b>	40 CFR 173.185(d)
<b>Air Transport (IATA/ICAO) Packing Instructions</b>	PI 968 – Lithium metal batteries <b>Note: Per IATA, on <u>April 1, 2016</u> PI 968 Section II will be amended to limit to 1 the quantity of packages offered for consignment, quantity (1) in an overpack and the package must be offered separately from other cargo.</b> PI 969 – Lithium metal batteries packed with equipment PI 970 – Lithium metal batteries contained in equipment
<b>Marine/Water Transport (IMDG) Special Provision</b>	188
<b>ADR/RID Special Provision</b>	188
<b>Passenger Air Travel</b>	Air travelers should consult the US Department of Transportation (DOT) Safety Travel web site at <a href="http://safetravel.dot.gov">http://safetravel.dot.gov</a> for guidance regarding carry on of lithium batteries.
<b>Emergency Transportation Hotline</b>	<b>CHEMTREC 24-Hour Emergency Response Hotline</b> <b>Within the United States call +703-527-3887</b> <b>Outside the United States, call +1 703-527-3887 (Collect)</b>
<b>10. Regulatory Information (GHS Section 15)</b>	
<b>10a. Battery Requirements</b>	
<b>USA EPA Mercury Containing &amp; Rechargeable Battery Management Act of 1996</b>	During the manufacturing process, no mercury is added.
<b>EU Battery Directive 2006/66/EC &amp; amendment 2013/56/EU</b>	Compliant with marking and substance restrictions for mercury (<0.0005%); cadmium (<0.0020%) and lead (<0.0040%). EU retail and bulk packaging containing lithium coin batteries are marked with the special collection symbol in accordance with Article 21,
<b>10b. General Requirements</b>	

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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. <u>Required labeling</u> : Perchlorate material - special handling may apply. See <a href="http://www.dtsc.ca.gov/hazardouswaste/perchlorate">www.dtsc.ca.gov/hazardouswaste/perchlorate</a>
CANADA Products Containing Mercury Regulations SOR/20140254	Mercury free
EU REACH SVHC's (168 Substances/Candidate List Updated December 2015)	Contains 1,2-dimethoxyethane (CAS# 110-71-4)
EU REACH SVHC Communication	<u>SVHC Substance Name</u> : 1,2-dimethoxyethane (EGDME) <u>Use</u> : Incorporated in a lithium battery as electrolyte solvent <u>EINEC Number</u> : 203-794-9 <u>CAS Number</u> : 110-71-4 <u>Concentration</u> : 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. <u>Safe Handling</u> : 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.
<b>10c. Regulatory Definitions - Articles</b>	
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
<b>11. Other Information</b>	
<b>11a. Certification &amp; 3rd Party Approvals</b>	
UL Listing	Lithium Batteries - Component BBCV2.MH12538
<b>11b. AIS Hazard Communication Approaches (consulted in developing this document):</b>	
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: <b><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></b>
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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<p><b>IEC 62474 Ed. 1.0 B:2012 Material Declaration for Products of and for the Electro-technical Industry</b></p>	<p>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)</p>
<p><b>IEC 62474 Database - Publically available online (<a href="http://std.iec.ch/iec62474">http://std.iec.ch/iec62474</a>). Maintained by TC11: Environmental Standardization for electrical and electronic products and systems.</b></p>	<p>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.</p>
<p><b>ANSI Z 400.1/Z19.1 (2010)</b></p>	<p>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.</p>

**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.**

## Safety Data Sheets (SDSs)

Client	HuiZhou ShenZhou Super Power Technology CO.,LTD
Add. of Client	Workshop of Dongsheng Citizen Group, No.52, XieXia, Huihuan Town, Huizhou, Guangdong, China
Description	Ni MH rechargeable battery
Model /Type	Ni-MH Battery AA 1.2V 1000mAh
Manufacturer	HuiZhou ShenZhou Super Power Technology CO.,LTD
Add. of Manufacturer	Workshop of Dongsheng Citizen Group, No.52, XieXia, Huihuan Town, Huizhou, Guangdong, China
Nominal Voltage	1.2V 1000mAh
Date of Receipt	2022-4-19

Laboratory	Dongguan ZRLK Testing Technology Co., Ltd.
Address	Building D, No.2, Jinyuyuan Mansion, No.18, Industrial West Road, Songshan Lake High-tech Industrial Development Zone, Dongguan, Guangdong, China

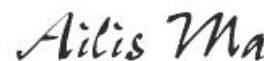
Approved Signatory

Maggie.Gao



Inspected by

Ailis.Ma



Censored by

Lahm Peng



## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product Identifier

Product name: Ni MH rechargeable battery  
Model: Ni-MH Battery AA 1.2V 1000mAh

### Other means of identification

Synonyms:none

### Recommended use of the chemical and restrictions on use

Recommended Use:Used in portabl electronic equipments;

Uses advised against:

- a) Do not dismantle, open or shred secondary cells or batteries.
- b) Keep batteries out of the reach of children  
Battery usage by children should be supervised. Especially keep small batteries out of reach of small children.
- c) Seek medical advice immediately if a cell or a battery has been swallowed.
- d) Do not expose cells or batteries to heat or fire. Avoid storage in direct sunlight.
- e) Do not short-circuit a cell or a battery. Do not store cells or batteries haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.
- f) Do not remove a cell or battery from its original packaging until required for use.
- g) Do not subject cells or batteries to mechanical shock.
- h) In the event of a cell leaking, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with copious amounts of water and seek medical advice.
- i) Do not use any charger other than that specifically provided for use with the equipment.
- j) Observe the plus (+) and minus (–) marks on the cell, battery and equipment and ensure correct use.
- k) Do not use any cell or battery which is not designed for use with the equipment.
- l) Do not mix cells of different manufacture, capacity, size or type within a device.
- m) Always purchase the battery recommended by the device manufacturer for the equipment.
- n) Keep cells and batteries clean and dry.
- o) Wipe the cell or battery terminals with a clean dry cloth if they become dirty.
- p) Secondary cells and batteries need to be charged before use. Always use the correct charger and refer to the manufacturer's instructions or equipment manual for proper charging instructions.
- q) Do not leave a battery on prolonged charge when not in use.
- r) After extended periods of storage, it may be necessary to charge and discharge the cells or batteries several times to obtain maximum performance.
- s) Retain the original product literature for future reference.
- t) Use the cell or battery only in the application for which it was intended.
- u) When possible, remove the battery from the equipment when not in use.
- v) Dispose of properly.

### Details of the supplier of the safety data sheet:

Supplier Name: HuiZhou ShenZhou Super Power Technology CO.,LTD  
Address: Workshop of Dongsheng Citizen Group, No.52, XieXia, Huihuan  
Town, Huizhou, Guangdong, China  
Telephone number of the supplier: 0086-0752-8216589  
Postcode: 516006

E-mail address: dinglx@lc-battery.com

**Emergency telephone number**

Company Emergency Phone Number: 0086-0752-8216500

## 2. HAZARDS IDENTIFICATION

**Classification**

Acute toxicity - Dermal	Category 3
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

**GHS Label elements, including precautionary statements**

**Danger**

**Hazard statements**

Toxic in contact with skin

Causes serious eye irritation

Suspected of causing cancer

Causes damage to organs through prolonged or repeated exposure



**Precautionary statements-Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Wear protective gloves/protective clothing/eye protection/face protection

Wash face, hands and any exposed skin thoroughly after handling

Do not breathe dust/fume/gas/mist/vapors/spray

Do not eat, drink or smoke when using this product

**Precautionary Statements - Response**

If exposed or concerned: Get medical advice/attention

Specific treatment (see supplemental first aid instructions on this label)



**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

**Skin**

IF ON SKIN: Wash with plenty of water and soap

Call a POISON CENTER or doctor if you feel unwell

Take off immediately all contaminated clothing and wash it before reuse

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other information**

harmful if swallowed. Very toxic to aquatic life with long lasting effects.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical characterization: Mixtures****Description:**

Product: Consisting of the following components.

Common Chemical Name	Concentration (%)	CAS Number
Nickel hydroxide	31.6	12054-48-7
Potassium hydroxide	20	1310-58-3
Water	18.3	7732-18-5
Ferrous oxide	16.7	1345-25-1
Lanthanum, compound with nickel (1:5)	8	12196-72-4
Sodium hydroxide	2.8	1310-73-2
Graphite	2.6	7782-42-5

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

### 4. FIRST-AID MEASURES

**First aid measures**

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact Remove contaminated clothing and shoes. Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

Swallowing Do not induce vomiting. Get medical attention.

**Most Important Symptoms/Effects** No information available.

**Indication of any immediate medical attention and special treatment needed**

Notes to Physician Treat symptomatically

## 5. FIRE-FIGHTING MEASURES

### **Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical powder, water spray.

Unsuitable Extinguishing Media: No information available.

### **Specific Hazards Arising from the Chemical**

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Carbon monoxide(CO)

Carbon dioxide

Other irritating and toxic gases.

### **Hazardous Combustion Products**

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No

Sensitivity to Static Discharge No

### **Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. For example: Wear self-contained respiratory protective device. Wear suitable protective clothing and eye/face protection.

### **Special hazards arising from the substance or mixture:**

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150°C), When damaged or abused(e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

## 6. ACCIDENTAL RELEASE MEASURES

### **Personal precautions, protective equipment and emergency procedures**

Personal Precautions Avoid contact with eyes.



Refer to section 8 for personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas.

**Environmental precautions**

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

**Methods and material for containment and cleaning up**

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning up Use personal protective equipment. Dam up. Cover liquid spill with sand, earth or other Non combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

Wash thoroughly after handling. Use this material with adequate ventilation.

The product is not explosive.

**Conditions for safe storage, including any incompatibilities**

If the Battery is subject to storage for such a long term as more than 3 months.

3 months: -10°C~+40°C, 45 to 85%RH

And recommended at 0°C~+35°C for long period storage.

The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more.

The voltage for a long time storage shall be 3.7V~4.2V range.

Do not storage Lithium-ion Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.

Keep out of reach of children.

Do not expose Lithium ion battery to heat or fire. Avoid storage in direct sunlight.

Do not store together with oxidizing and acidic materials.

Keep ignition sources away- Do not smoke.

Store in cool, dry and well-ventilated place.

**Incompatible Products** None known.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Control parameters**

Ingredients with limit values that require monitoring at the workplace:	
TLV (USA)	0.02mg/m <sup>3</sup>
MAK (Germany)	0.1mg/m <sup>3</sup>

**Other Exposure Guidelines** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962(11th Cir., 1992).

**Appropriate engineering controls**

- Engineering Measures** Showers  
 Eyewash stations  
 Ventilation systems

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ensure adequate ventilation.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection:**



**Tightly sealed goggles**

**Body protection:**

Protective work clothing.

**Skin protection:**



**Protective gloves**

**Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Respiratory Protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical State	Form: Cylindrical
	Color: Green
	Odour: Odourless
	Odor Threshold: No information available
Change in condition:	
pH, with indication of the concentration	Not determined.
Melting point/freezing point	Not determined.



Initial boiling point and Boiling range:	Not determined.
Flash Point	Not determined.
Evaporation rate	Not determined.
Flammability (solid, gas)	Not determined.
Upper/lower flammability or explosive limits	Not determined.
Vapor Pressure:	Not determined.
Vapor Density:	Not determined.
relative density:	Not determined.
Solubility in Water:	Not determined.
Solubility in other solvents	Not determined.
n-octanol/water partition coefficient	Not determined.
Auto-ignition temperature	Product is not self-igniting.
Decomposition temperature	Not determined.
Odour threshold	Not determined.
Evaporation rate	Not determined.
Viscosity	Not determined.
Other Information	No further relevant information available.

## 10. STABILITY AND REACTIVITY

**Reactivity:** Stable under recommended storage and handling conditions (see section 7, Handling and storage).

**Chemical stability:** Stable under normal conditions of use, storage and transport.

**Thermal decomposition/conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of Hazardous Reactions:** None under normal processing.

**Hazardous Polymerization:** Hazardous polymerization does not occur.

**Conditions to avoid:** Strong heating, fire, Incompatible materials.

**Incompatible materials:** Strong oxidizing agents. Strong acids. Base metals.

**Hazardous Decomposition Products:** Carbon oxides, Other irritating and toxic gases.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:** No data available.

LD/LC50 values relevant for classification:

Not available.

**Skin corrosion/irritation:** No irritant effect.

**Serious eye damage/irritation:** Cause serious eye irritation.

**Respiratory or skin sensitization:** No sensitizing effects known.

**Specific target organ system toxicity:** No information available.

**CMR effects(carcinogenity, mutagenicity and toxicity for reproduction):** No information available.

## 12. Ecological Information

### Toxicity:

Acquatic toxicity:
No further relevant information available.

**Persistence and degradability:** No further relevant information available.

**Bioaccumulative potential:** No further relevant information available.

**Mobility in soil:** No further relevant information available.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

**Other adverse effects:** No information available.

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

Recommendation: Must not be disposed together with household garbage.

Do not allow product to reach sewage system

### Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

## 14. TRANSPORT INFORMATION

### Land transport

ADR/RID class: Not regulated.

### Maritime transport

Non-hazardous for sea transport.

### Air transport

The Ni-MH Battery according to SP A 199 of the 2022 IATA Dangerous Goods regulations 63<sup>rd</sup> Edition may be transported. and applicable U.S. DOT regulations for the safe transport of Ni-MH Battery.

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture.

The Ni-MH Battery having the potential of a dangerous evolution of heat must be prepared for transport so as to prevent:

a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or, in the case of equipment, by disconnection of the battery and protection of exposed terminals); and unintentional activation.

The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

The package must be handled with care and that a flammability hazard exists if the package is damaged;

## 15. REGULATORY INFORMATION

### Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation:

**Authorisations:** No information available.

**Restrictions on use:** No information available.

#### Regulatory information

CAS No.	EU (EINECS )	US (TSCA)	Japan (ENCS)	Canada (DSL/ NDSL)	Australia (AICS)	Korea (ECL)	China (IECSC)
12054-48-7	Listed	Not listed	Not listed	NDSL	Not listed	Not listed	Not listed
1310-58-3	Listed	Listed	Listed	DSL	Listed	Listed	Listed
7732-18-5	Listed	Listed	Listed	DSL	Listed	Listed	Listed
1345-25-1	Not listed	Listed	Not listed	DSL	Listed	Listed	Listed
12196-72-4	Not listed	Listed	Not listed	DSL	Listed	Listed	Listed
1310-73-2	Listed	Not listed	Not listed	NDSL	Not listed	Not listed	Not listed
7782-42-5	Listed	Not listed	Not listed	NDSL	Not listed	Not listed	Not listed

**Chemical safety assessment** A Chemical Safety Assessment has not been carried out.

## 16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

\*\*\*\*\*End of SDS\*\*\*\*\*

## 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 Alkaline Batteries (Major and Specialty Cells)
Document ID	AIS-ALK
Issue Date	1-May-15
Version	1
Preparer	Global Product Stewardship
Last Revision	New
Information Contact	moquet.l@pg.com
2. Company Information	
Name & Address	P&G 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 alkaline battery
Product Category	Electro-technical device
Use	Portable power source for electronic devices
Global sub-brands (Retail)	Coppertop, Plus, Quantum, Simply, Turbo, Ultra, Basic, TurboMax
Global sub-brands (B2B)	Procell, Industrial, OEM/OEA
Sizes	Major Cells: AA,AAA, C, D & 9V
Sizes	Specialty Cells: AAAA, MN11, MN21, MN27, MN175, PX76 (LR44), PX28, PX625, (LR09), LR43, LR54, N, J, 4.5V, 625A
Sizes	Lanterns: MN903, MN908, MN915, MN918; MN1203
Principles of Operation	A battery powers a device by converting stored chemical energy into electrical energy.
Representative Product Images	
	<div style="display: flex; justify-content: space-around; text-align: center;"> <div><b>Major Cells</b></div> <div><b>Major Cells</b></div> <div><b>Lantern</b></div> <div><b>Specialty</b></div> </div>
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	Alkaline Manganese Dioxide
Electrode - Negative	Zinc (CAS # 7440-66-6)
Electrode - Positive	Manganese Dioxide (CAS # 1313-13-9)
Electrolyte	Alkali Metal Hydroxide (aqueous potassium hydroxide - CAS # 1310-58-3)
Materials of Construction - Can	Nickel Plated Steel
Declarable Substances (IEC 62474 Criteria 1)	None
Mercury Free Battery (ANSI C18.4M <50ppm)	Yes
Small Cell or Battery (ANSI C18.1M Part 2; IEC 60086-5)	Sizes: AAA and Specialty Cells fit inside a specially designed test cylinder 2.25 inches (57.1mm) long by 1.25 inches (31.70 mm) wide.
5. Health & Safety	



**Article Information Sheet (AIS)**

<b>Ingestion/Small Parts Warning</b>	<u>Required for Small Cell or Battery (Sizes: AAA and Specialty Cells):</u> Keep away from children. If swallowed, consult a physician immediately.
<b>Normal Conditions of Use</b>	Exposure to contents inside the sealed battery will not occur unless the battery leaks, is exposed to high temperatures, or is mechanically abused.
<b>Note to Physician</b>	A damaged battery will release concentrated and caustic potassium hydroxide.
<b>First Aid - If swallowed</b>	Do not induce vomiting. Seek medical attention immediately. USA CALLS ONLY - CALL 24-HOUR NATIONAL BATTERY INGESTION HOTLINE: (202) 625-3333 - COLLECT.
<b>First Aid - Eye Contact</b>	Flush with water for at least 15 minutes. Seek medical care if irritation persists.
<b>First Aid - Skin Contact</b>	Remove contaminated clothing. Wash skin with soap and water. Seek medical care if irritation persists.
<b>First Aid - Inhalation</b>	Remove to fresh air.
<b>Battery Safety Standards &amp; Testing</b>	Duracell batteries meet the requirements of ANSI C18. 1M Part 2 and IEC 60086-5. These standards specify tests and requirements for alkaline batteries to ensure safe operation under normal use and reasonably foreseeable misuse. The test regimes assess three conditions of safety. These are: <u>1-Intended use simulation:</u> Partial use, vibration, thermal shock, and mechanical shock <u>2-Reasonably foreseeable misuse:</u> Incorrect installation, external short-circuit, free fall (user-drop), over-discharge, and crush <u>3-Design consideration:</u> Thermal abuse, mold stress
<b>Precautionary Statements</b>	<b>CAUTION:</b> Batteries may explode or leak, and cause burn injury, if recharged, disposed of in fire, mixed with a different battery type, inserted backwards or disassembled. Replace all used batteries at the same time. Do not carry batteries loose in your pocket or purse. Do not remove the battery label. Keep small batteries (i.e., AAA) away from children. If swallowed, consult a physician at once.
<b>6. Fire Hazard &amp; Firefighting</b>	
<b>Fire Hazard</b>	Batteries may rupture or leak if involved in a fire.
<b>Extinguishing Media</b>	Use any extinguishing media appropriate for the surrounding area.
<b>Fires Involving Large Quantities of Batteries</b>	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.
<b>7. Handling &amp; Storage</b>	
<b>Handling Precautions</b>	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.
<b>Storage Precautions</b>	Store batteries in a dry place at normal room temperature. Refrigeration does not make them last longer.
<b>Spills of Large Quantities of Loose Batteries (unpackaged)</b>	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.
<b>8. Disposal Considerations (GHS Section 13)</b>	
<b>Collection &amp; Proper Disposal</b>	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.

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<b>USA EPA RCRA (40 CFR 261)</b>	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.
<b>California Universal Waste Rule (Cal. Code Regs. Title 22, Div. 4.5, Ch. 23)</b>	California prohibits disposal of batteries as trash (including household trash).
<b>9. Transport Information (GHS Section 14)</b>	
<b>Regulatory Status</b>	Not regulated. Alkaline 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.
<b>UN Identification Number/ Shipping Name</b>	None - Not Required
<b>Special Provision (SP) Conformance</b>	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.
<b>US DOT SP</b>	49 CFR 172.102 Special Provision 130
<b>Air Transport (IATA/ICAO) SP</b>	Special Provision A123 (56th Edition - 2015). 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.
<b>Passenger Air Travel</b>	No restrictions
<b>Emergency Transportation Hotline</b>	<b>CHEMTREC 24-Hour Emergency Response Hotline</b> <b>Within the United States call +703-527-3887</b> <b>Outside the United States, call +1 703-527-3887 (Collect)</b>
<b>10. Regulatory Information (GHS Section 15)</b>	
<b>10a. Battery Requirements</b>	
<b>USA EPA Mercury Containing &amp; Rechargeable Battery Management Act of 1996</b>	During the manufacturing process, no mercury is added.
<b>EU Battery Directive 2006/66/EC &amp; amendment 2013/56/EU</b>	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
<b>10b. General Requirements</b>	
<b>USA CPSIA 2008 (PL. 11900314)</b>	Exempt
<b>USA CPSC FHSA (16 CFR 1500)</b>	Consumer batteries are not listed as a hazardous product.
<b>USA EPA TSCA Section 13 (40 CFR 707.20)</b>	For customs clearance purpose, batteries are defined as an "Article".
<b>USA EPA RCRA (40 CFR 261)</b>	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.
<b>California Prop 65</b>	No warning required per 3rd party assessment.
<b>CANADA Products Containing Mercury Regulations SOR/20140254</b>	Mercury free
<b>EU REACH SVHC's (161 Substances) Candidate List December 2014)</b>	No listed substances are present (>0.01% w/w)
<b>EU REACH Article 31</b>	SDS is not required consumer alkaline batteries.

**Article Information Sheet (AIS)**

**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 (UTGT2.S50939 Single Multiple Station Smoke Alarms - Component)	AA, 9V Certification Standard: ANSI/UL 217 Single & Multiple Station Smoke Alarms
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**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: <i><b>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."</b></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 Procter & Gamble 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. Procter & Gamble assumes no responsibility for injury to the recipient or third persons or for any damage to any property resulting from misuse of the product.**