maxell

Coin Type CR Battery

Product Safety Data Sheet

The batteries are exempt articles and are not subject to the OSHA Hazard Communication Standard Requirement. This sheet is provided as technical information only. The information and recommendations set forth are made in good faith and are believed to be accurate as of the date of preparation. However, Maxell makes no warranty expressed or implied.

Section 1 - Product and Company Identification

Product Name:	Sizes:	Date of preparation:
Coin Type Lithium Manganese Dioxide Battery (CR)	All	Jan. 1, 2014

Company:	Telephone Numbers:
Hitachi Maxell, Ltd., Energy Division	81-(0)794-63-8054
Address (Number, Street, City, State, and ZIP Code):	Fax Numbers:
5, Takumidai, Ono-shi, Hyogo 675-1322, Japan	81-(0)794-63-8445

Section 2 - Composition/Information on Ingredients

Ingredient	CAS#	Content (wt%)
Manganese Dioxide (MnO_2)	1313-13-9	15 to 40
Propylene Carbonate ($C_4H_6O_3$)	108-32-7	2 to 6
1,2-Dimethoxyethane ($C_4H_{10}O_2$)	110-71-4	1 to 5
Lithium Perchlorate ($LiClO_4$)	7791-03-9	0.1 to 1.5
Lithium or Lithium Alloy (Li)	7439-93-2	1 to 5
Graphite (C)	7782-42-5	1 to 4

Lithium content for each cell

Model	Li content (g)
CR1025	0.009
CR1216	0.008
CR1220	0.011
CR1616	0.02
CR1620	0.025
CR1632	0.04
CR2012	0.02

Model	Li content (g)
CR2016	0.03
CR2025	0.05
CR2032	0.07
CR2032H	0.07
CR2430	0.09
CR2450	0.18

Section 3 - Hazards Identification

This contains lithium, organic solvent, and other combustible materials. For this reason, improper handling of the battery could lead to distortion, leakage*, overheating, explosion, or fire and cause human injury or equipment trouble. Please strictly observe safety instructions.

(* Leakage is defined as an unintended escape of liquid from a battery.)

Section 4 - First Aid Measures

None unless internal materials exposure. If contents are leaked out, observe following instructions.

Inhalation	Fumes can cause respiratory irritation. Remove to fresh air and consult a physician.
Skin	Immediately flush skin with plenty of water. If itch or irritation by chemical burn persists, consult a physician.
Eyes	Immediately flush eye with plenty of water for at least 15 minutes. Consult a physician immediately.
Ingestion	If swallowing a battery, consult a physician immediately. If contents come into mouth, immediately rinse by plenty of water and consult a physician.

Section 5 - Fire Fighting Measures

Extinguishing Media	Extinguisher of alkaline metal fire is effective. Plenty of cold water is also effective to cool the surrounding area and control the spread fire. But hydrogen gas may be evolved by the reaction of water and lithium and it can form an explosive mixture. Therefore in the case that lots of lithium batteries are burning in a confined space, use a smothering agent.
Fire fighting procedure	Use self-contained breathing apparatus and full protective gear not to inhale harmful gas.

Section 6 - Accidental Release Measures

NA

Section 7 - Handling and Storage

1) Handling

Never swallow. Never charge. Never heat. Never expose to open flame. Never disassemble. Never reverse the positive and negative terminals when mounting. Never short-circuit the battery. Never weld the terminal or wire to the body of the battery directly. Never use different batteries together. Never touch the liquid leaked out of battery. Never bring fire close to battery liquid. Never keep in touch with battery.

2) Storage

Never let the battery contact with water. Never store the battery in hot and high humid place.

Section 8 - Exposure Controls, Personal Protection

Respiratory Protection		NA
Ventilation	Local Exhaust	NA
	Mechanical	NA
	Special	NA
	Other	NA
Eye Protection		NA
Protective Gloves		NA
Other protective clothing		NA

Section 9 - Physical/Chemical Characteristics

NA

Section 10 - Stability and Reactivity

Stability	Stable
Incompatibility	Water
Hazardous polymerization	Will not occur.
Condition to avoid	See section 7.
Hazardous Decomposition or Byproducts	Hydrogen

Section 11 - Toxicological Information

NA

Section 12 - Ecological Information

NA

Section 13 - Disposal Condition

The battery may be regulated by national or local regulation. Please follow the instructions of proper regulation. As electric capacity is left in a discarded battery and it comes into contact with other metals, it could lead to distortion, leakage, overheating, or explosion, so make sure to cover the (+) and (-) terminals with friction tape or some other insulator before disposal.

Section 14 - Transportation Information

Shipping Name (UN Number)	Lithium metal batteries (UN3090)
	Lithium metal batteries packed with equipment (UN3091)
	Lithium metal batteries contained in equipment (UN3091)
Hazard Classification	Class 9 (Miscellaneous)

Organizations governing the transport of lithium batteries

Area	Method	Organization	Special Provision
International	Air	IATA, ICAO	Packing Instruction 968-970
International	Marine	IMO	SP188
U.S.A	Air, Rail, Road, Marine	DOT	49 CFR Section 173.185

These regulations are based on the UN Recommendations. The UN recommendation (17th revised edition) requires that cells and batteries shall be manufactured under a quality management program and this requirement is adopted by IMDG code and ICAO/IATA DGR. As Maxell factories have been certified for the ISO 9001, we meet this requirement.

Each special provision provides specifications on exceptions and packaging for lithium metal cells and batteries shipping.

1) Air transportation: In IATA regulations (55th Edition), the packing requirements for the cells and batteries transport is specified in PI 968, for the cells and batteries with equipment in PI 969, and for the cells and batteries installed in the equipment in PI 970. Because the content of lithium in all our Coin Type CR cells is less than 0.3g, they can be transported according to Section II (excepted from regulation) of PI 968, 969, and 970.

2) Marine transportation: The all cells can be transported as “Non Dangerous Goods” according to SP188 of IMO-IMDG Code (2012 Edition) because the content of lithium in all our Coin Type CR cells is less than 1.0g.

Please confirm the lithium content when transport the battery.

Section 15 - Regulatory Information

Major applicable regulations for the transportation of lithium metal cells and batteries are as follows:

- UN Model Regulations: United Nations UN/ ST/SG/AC.10/1/Rev.17, Recommendations on the Transport of Dangerous Goods, 17th revised edition
- International Civil Aviation Organization (ICAO): Technical Instructions for the Safe Transport of Dangerous Goods by Air, 2013-2014 Edition
- International Air Transport Association (IATA): Dangerous Goods Regulations, 55th Edition
- International Maritime Organization (IMO): International Maritime Dangerous Goods (IMDG) Code, 2012 Edition

Section 16 - Other Information

If you want further information, please contact your local sales representative.

NA=Not Applicable