

maxell**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:
Zinc Silver Oxide Battery (SR) (Mercury Free)	All	Jan. 1, 2018
Company: Maxell, Ltd., Energy Division, Micro Battery Design Department	Telephone Numbers: 81-(0)794-63-8054	
Address (Number, Street, City, State, and ZIP Code): 5, Takumidai, Ono-shi, Hyogo 675-1322, Japan	Fax Numbers: 81-(0)794-63-8445	

Section 2 - Hazards Identification

Improper handling of the battery could lead to distortion, leakage*, overheating, or explosion and cause human injury or equipment trouble. Especially touch with liquid leaked out of battery could cause injury like a loss of eyesight. Please strictly observe safety instructions.

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

Section 3 - Composition/Information on Ingredients

Ingredient	CAS#	Content (wt %)
Silver Oxide (Ag ₂ O)	20667-12-3	5 to 45
Manganese Dioxide (MnO ₂)	1313-13-9	0 to 30
Potassium Hydroxide (KOH)	1310-58-3	0 to 5
Sodium Hydroxide (NaOH)	1310-73-2	0 to 3
Mercury (Hg)	7439-97-6	Not used
Zinc (Zn)	7440-66-6	2 to 15
Carbon (C)	7782-42-5	0.1 to 5

Section 4 - First Aid Measures

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

NA=Not Applicable



Inhalation	Explosion may make fumes of alkaline solution and the fumes could cause respiratory irritation. Rinse by plenty of water 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	Any class of extinguisher is effective.
Fire fighting procedure	The batteries could be exploded by heat of fire and alkaline solution could disperse. Use self-contained breathing apparatus and full gear not to inhale or not to come into eyes or skin with harmful alkaline mist.

Section 6 - Accidental Release Measures

When the liquid leaks out of the battery, absorb and wipe it with dry cloth. If touching the liquid, Observe Section 4 - First Aid Measures.

Section 7 - Handling and Storage

1) 1) Handling

- **Never swallow.**

If swallowed, see Section 4 - First Aid Measures.

- **Never touch the liquid leaked out of battery.**

If the liquid comes into eyes, or mouth, see Section 4 - First Aid Measures.

- **Never short-circuit the battery.**

Do not allow the positive and negative terminals to short-circuit. Never carry or keep battery with metal goods such as a necklace or a hairpin. Otherwise battery could cause distortion, leakage, overheating, or explosion of the battery.

- **Never charge.**

The battery is not designed to be charged by any other electrical source. Charging could generate gas and internal short-circuiting, leading to distortion, leakage, overheating, or explosion.



- **Never expose to open flames.**

Exposing to flames could cause explosion of the battery.

- **Never heat.**

Heating the battery more than 100 degree centigrade could increase the internal pressure leading to distortion, leakage, overheating, or explosion.

- **Never disassemble or deform.**

Disassembly or deforming of the battery could cause the leakage, overheating, or explosion due to an internal short-circuits.

2) Storage

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

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

The appearance is a coin shape and it is a primary cell with 1.55V nominal voltage.

Section 10 - Stability and Reactivity

Stability: Stable (performance deterioration depends on circumstance.)

Incompatibility: NA

Hazardous polymerization: NA

Condition to avoid: See section 7.

Hazardous Decomposition or Byproducts: NA

Section 11 - Toxicological Information

As the contents are sealed in the battery case, there is no toxicity.



Section 12 - Ecological Information

If the battery is disposed in land or water, battery case may be corroded and the liquid may leak out of the battery. Information regarding ecological concerns has not been reported.

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

I hereby certify that the above captioned goods are non-dangerous and non-hazardous materials for air transport in any nature. The consignment is fully described by Proper Shipping Name and packed (short-circuit prevented), marked and in proper condition for carriage by air. I further hereby certify that the consignment is not subject to hazardous materials and dangerous materials regulations for the transportation by U.S. Department of Transportation (US-DOT), the International Civil Organization (ICAO), the International Air Transport Association (IATA) or the International Maritime Organization (IMO) or the International Maritime Dangerous Goods (IMDG) and also is not classified as dangerous under the current edition of the IATA

DANGEROUS GOODS REGULATIONS (edition 59th), with complying with the provision A123, and all applicable carrier and governmental regulations. But The words 「Not restricted, as per Special Provision A123」 must be provided on the air waybill when an air waybill is issued.

The International Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under

Special Provision 304 which says: This entry may only be used for the transport of non-activated batteries which contain dry potassium hydroxide and which are intended to be activated prior to use by the addition of an appropriate amount of water to the individual cells. As SR battery do not contain dry potassium hydroxide and is not required any water to use, SR battery is not subject to the provision of this Code. The good is approved to ship as NON-DG.

Section 15 - Regulatory Information

Major environmental regulation is as follows:

EU Battery Directive 2006/66/EC (2013/56/EU): Maxell, Ltd. certifies that its SR batteries comply with this regulation.



Section 16 - Other Information

If you want further information, please contact Maxell sales representative.



