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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: Lithium ion cell (PSB401010H)	NO. LBF16501ST	Issue Date: June 16, 2025
Company: Maxell, Ltd., Energy Division		TEL: (+81)-(0)75-956-4161
Address: 1 Koizumi, Oyamazaki, Oyamazaki-cho, Otokuni-gun, Kyoto, 618-8525 Japan		Fax: (+81)-(0)75-956-4163

Section 2 – Hazards Identification Including Emergency Overview

This battery contains a substance such as a sulfide-based solid electrolyte that reacts with water to generate toxic gases, and if used incorrectly, it may cause deformation, leakage of toxic gasses, heat generation, or explosion of the battery. Chemicals utilized in lithium ion cells do have some toxicity and inhalation may cause irritation.

・GHS classification: Not available

Section 3 – Composition / Information on Ingredients

Components	CAS#	Content（wt.%）
Lithium Cobalt Dioxide ($LiCoO_2$)	12190-79	1～10
Lithium Titanite (LTO)	12031-95-7	1～10
Sulfide Solid Electrolyte	-	1～15
Carbon (C)	-	0.1～5
Aluminum oxide（Al_2O_3）	1344-28-1	40～60
Silicon dioxide (SiO_2)	7631-86-9	4 or less
Other oxide Calcium oxide (CaO) Magnesium oxide (MgO) Chromium oxide (Cr_2O_3)	 1305-78-8 1309-48-4 1308-38-9	1 or less
Tungsten	7440-33-7	5or less
Iron	7439-89-6	10 or less
Nickel	7440-02-0	7 or less
Cobalt	7440-48-4	3 or less

Other Metal		1 or less
Molybdenum	7439-98-7	
Manganese	7439-96-5	
Chromium	7440-47-3	
Gold	7440-57-5	
Silver	7440-22-4	
Copper	7440-50-8	

Rated Watt-Hour of each type

Model	Wh*
PSB401010H	0.02

*Nominal voltage x Nominal capacity

Section 4 - First Aid Measures

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

Inhalation	Generated gas can cause respiratory irritation. Move somewhere with 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 immediately.
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 leak into mouth, immediately rinse by plenty of water and consult a physician immediately.

Section 5 - Fire Fighting Measures

Extinguishing Media	Extinguisher of Lithium metal fire is effective. Plenty of cold water is also effective to cool the surrounding area and control the spread fire. But hydrogen sulfide may be evolved by the reaction of water and sulfide solid electrolyte. Therefore, in the case that lots of lithium ion batteries are burning in a confined space use a smothering agent (e.g. carbon dioxide or dry sand).
Firefighting procedure	Use self-contained breathing apparatus and full protective gear not to inhale harmful and a toxic gas.

Section 6 - Accidental Release Measures

Handle contents leaked from the battery with care.

■If you notice any malodor, provide adequate ventilation.

■Collect batteries and leaked contents in a sealable container.

■Use protective masks, protective gear, and eyeglasses to prevent content from being inhaled or exposed to the skin or eyes.

■Dispose of them as described in the section 13 “Disposal Consideration”

Section 7 - Handling and Storage

Handling:

■Do not dip or wet the battery in water, seawater, or other liquids
■Do not use or store in a corrosive gas environment
■Do not put the battery into a fire or heat it.
■Do not drive a nail into, hit with hammer or stamp on the battery.
■Do not apply any heavy impacts to the battery, throw or drop it.
■Do not apply excessive load or pressure to the outer case of the battery.
■Do not disassemble or alter the battery
■Do not swallow the battery. If swallowed, consult a physician immediately.
■Do not put the battery in a microwave oven, a pressure cooker, or other cookware.
■Design the device so that the battery cannot be replaced by the end user to prevent incorrect battery replacement.
■If you notice any malodor, heating, discoloration, deformation, or any other change from what you are used to while using, charging, or storing the battery, remove it from the device, equipment or charger and avoid using it. Using it in such state may result in heat generation, explosion, burns or fire.
■Do not use any charger not specified by Maxell. Be sure to follow the charger conditions specified by the manufacturer.
■Do not connect the battery's positive (+) and negative (-) terminals in reverse inside the charger or equipment/device.
■Do not allow leaked contents from batteries to get into the eyes. In the event of such contact, flush the eyes with plenty of water immediately and consult a physician.

Storage:

・Never let the battery come into contact with water. Never store the battery in hot places with high humidity.

Section 8 - Exposure Controls, Personal Protection

Respiratory Protection	NA
Ventilation	NA
Eye Protection	NA
Protective Gloves	NA
Other protective clothing	NA

Section 9 – Physical/Chemical Characteristics

Encapsulated in a ceramic package, it is a rechargeable cell with 2.3V nominal voltage.

Section 10 - Stability and Reactivity

Stability: Stable (Performance deterioration depends on circumstance.)
Incompatibility: Water
Hazardous polymerization: Will not occur.
Condition to avoid: See section 7 , Do not heat above 200℃（392°F）
Hazardous Decomposition or Byproducts: Hydrogen sulfide (by moisture)

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 of on land or in water, the battery case may corrode, and the contents may leak from the battery. Ecological information has not been reported.

Section 13 - Disposal Consideration

When disposing of battery, follow appropriate local guidelines and regulations.

Section 14 - Transportation Information

Shipping Name (UN Number)	Lithium ion batteries (UN3480)
	Lithium ion batteries packed with equipment (UN3481)
	Lithium ion batteries contained in equipment (UN3481)
Hazard Classification	Class 9 (Miscellaneous)

Organizations governing the transport of lithium batteries are as follows,

Area	Method	Organization	Packing Instruction or Special Provision
International	Air	IATA, ICAO	PI 965-967
International	Maritime	IMO	SP 188
U.S.A	Air, Rail, Road, Maritime	DOT	49 CFR Section 173.185

Their regulations are based on the UN Recommendations. The UN Recommendations (23rd revised edition) require that lithium ion cells and batteries shall be manufactured under a quality management program and this requirement is adopted by IMDG Code and ICAO TI/IATA DGR. Since Maxell factories have been certified to ISO 9001, we meet this requirement.
Each packing instruction or special provision provides specifications on exceptions and packaging for lithium ion cells and batteries.

1) Air transportation: In IATA DGR (66th edition), the packing requirements for lithium ion cells and batteries transport is specified in PI 965, for lithium ion cells and batteries packed with equipment in PI 966, and for lithium ion cells and batteries contained in equipment in PI 967. Maxell lithium ion cells which have a Watt-hour rating of but not can be transported according to Section IB (Class 9 Dangerous Goods) of PI 965.

2) Maritime transportation: Maxell lithium ion cells which have a Watt-hour rating of not more than 20Wh can be transported as “Exemption from Class 9 Dangerous Goods” according to SP 188 of IMDG Code (2024 edition).

Section 15 - Regulatory Information

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

- UN (United Nations) Recommendations on the Transport of Dangerous Goods: Model Regulations 23rd revised edition
- UN (United Nations) Recommendations on the Transport of Dangerous Goods: Manual of Test and Criteria
- The International Civil Aviation Organization (ICAO): Technical Instructions for Safety Transport of Dangerous Goods by Air, 2025-2026 edition
- The International Air Transport Association (IATA): Dangerous Goods Regulations, 66th edition

- International Maritime Organization (IMO): International Maritime Dangerous Goods (IMDG) Code, 2024 edition

Section 16 - Other Information

If you want further information, please contact Maxell sales representative