

SAFETY DATA SHEETS

The batteries are articles and are not subject to the OSHA Hazard Communication Standard Requirement as shown in paragraph (b)(6)(v) of §1910.1200. 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.

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IDENTITY (As Read on Label and Line)	Notice: Blank spaces are not permitted. If any item is not
LR41, LR43, LR44, LR1130	applicable, or no information is available, the space mus
ALKALINE BUTTON CELL	be marked to indicate that.

Section I	
Manufacturer's Name	Telephone Number
Maxell Asia,Ltd.	852-2730-9243
Address (Number, Sheet, City, State, and ZIP Code)	Fax Number
	852-2735-6250
Unit Nos 03B-06, 13/Fl., No 909 Cheung Sha Wan	Date Prepared
Road, Cheung Sha Wan, Kowloon, Hong Kong.	1-Jan-2019

Section II – Hazardous Ingredients/Identity Information					
Hazardous Components (Specific Chem	nical Identity, Common Names)	(contents, %/wt)	CAS No.		
Manganese Dioxide	(MnO ₂)	22.0~30.0 %	1313-13-9		
Zinc	(Zn)	8.0~11.06 %	7440-66-6		
Potassium Hydroxide	(KOH)	3.0~4.0 %	1310-58-3		
Graphite	(C)	2.0~3.0 %	7782-42-5		
Cadmium	(Cd)	≤0.0005 %	7440-43-9		
Mercury	(Hg)	≤ 0.0001 %	7439-97-6		
Lead	(Pb)	≤0.002%	7439-92-1		
Water	(H ₂ O)		7732-18-5		
Other			Balance		

Section III – Physical/Chemical Characteristics				
Boiling Point KOH aqua solution = 140 °C	Specific Gravity ($H_2O=1$) $MnO_2 = 4.4$, $Zn = 7.1$, $KOH = 2.0$			
Vapor Pressure (mmHg) KOH aqua solution = 3mmHg at 20 °C	Melting Point MnO ₂ decompose at 535°C Zn = 420°C, KOH aqua = -35°C			
Vapor Density (Air = 1)	Evaporation Rate (Butyl Acetate = 1)			

Solubility in Water	KOH – complete
Appearance and Color	
	MnO ₂ is a black powder, Graphite is also a black powder, Zinc is a silver metal.
	KOH aqua is a colorless liquid with stimulative order.



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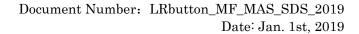
Date: Jan. 1st, 2019



	Fire and Explosi	VII 116	azaru Da	Flammable Lin	nite	LEL	UEL
Flash Point (Method Used) Incombustible			Not Available LEL UEL				
Extinguishing	Media: See Spec		re Fightin	l .	· (ot i i valiable		
	•				e water CO ₂ O	r dry chemic	cal extinguishers if cells
-	_			-		-	s. For bulk quantities of
•	ls use LITH-X (Gr				• •	r	1
						f hazardous d	lecomposition products.
Unusual Fire and	Explosion Hazards						
Section V – R	eactivity Data						
Stability	Unstable		Conditions	s to Avoid			
Stability			Condition	Do	not short circui	it, charge or d	ispose of in fire.
	Stable						
Incompatibility (Materials to Avoid)	•	Hazardo	ous polymeriza	tion will not o	ccur.	
Hazardous Decoi	mposition or Byprod	ucts	Not Ava	nilable			
Hazardous Polymerization	May Occur		Conditions	s to Avoid			
1 orymorization	Will Not Occur	V					
Section VI – I	Health Hazard I) ata					
Route(s) of Entry	7. Inhalatio	n?	Yes	Skin?	Yes	Ingestion?	Yes
Health Hazards (when a	battery cell v	y is mechar ents KOH		cally abused.	The most like	posure occurs, ly risk is acute exposure s. Contact of electrolyte
Section VII –	Ecological Info	rmati	on				
Cardnogenicity	NTP? Not Ava	ilable	IARC M	Ionographs? No	ot Available	OSHA Regul	ated? Not Available
Signs and Sympt	oms of Exposure	KO	H can cau	ise chemical bu	rn upon conta	ct with skin.	
Medical Condition Generally Aggray	ons vated by Exposure	An	acute exp	osure will not g	generally aggra	avate any me	dical help.
G 41 X/III	TO		4 4 · 1 D				
	-Emergency and				otoly with wot	or	
	skin contact with contact, flush with co						ts met
medical he		opious	amount o	i water for 10 i	innucs. If film	itation persist	is, get
	Precautions for S	Safe H	Iandling	and Use			
	Taken in Case Mater			C '11 1	out by wet du	ster.	
Section X - W	aste Disposal M	ethod	ì	1	<u> </u>		
	pandonment						

Section XI - Precautions to Be Taken in Handling and Storing

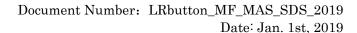
Avoid mechanical or electrical abuse.





Section XII	- Other Precautions					
Do not sh	nort circuit, charge or dispo	ose of in fire	. Battery n	nay explo	ode or leak.	
Section XIII	- Control Measures					
Respiratory Pro	otection (Specify Type)	Not Availa	ble			
Ventilation	Ventilation Local Exhaust			Special		
	Not A	Not Available		1	Not Available	
	Mechanical (General)			Other		
Not Available			Not Available			
Protective Gloves Butyl Eye		Eye Protec	ction	Safety Glasses		
Other Protective	e Clothing or Equipment					
		Not Avail	able			
Work / Hygieni	c Practices					
		Not Avail	able			







Section XIV – Transportation Information

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents. All original packaging for Maxell alkaline batteries has been designed to be compliant with these regulatory concerns.

Alkaline batteries (sometimes referred to as "Dry cell" batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Good Regulations, IATA Dangerous Goods Regulations 60th edition, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions

Regulatory Body	Special Provisions
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Provision 130
IATA	A123 (60th Edition)
ICAO	Not regulated

All Maxell alkaline batteries are packed in such a way to prevent short circuits or the generation dangerous quantities of heat and meet the special provisions listed above. In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words "not restricted" and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

(a) UN number: N/A

(b) UN proper shipping name: N/A

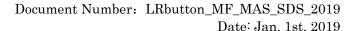
(c) Transport hazard class(es): N/A

(d) Packing group, if applicable: N/A

(e) Environmental hazards (e.g., Marine pollutant (Yes/No)) No.

(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)







The product can be treated as ordinary goods in transportation;

<u>Products in bulk shall be packed in inner packaging in such a manner that can prevent movement or short-circuit effectively.</u>

(g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Avoid high-temperature, high-humidity condition.

Section XV - Regulatory Information

Safety, health and environmental regulations specific for the product in question

The product is eco-friendly and in accordance with the safety regulations in ANSI C18.1M_Part2 Standard, and complying with the environmental requirements in EU Directives 2006/66/EC (Battery Directive) and its amendments 2013/56/EU..

Section XVI –Other Information

The date of preparation of the SDS or the last change to it

This Safety Date Sheets (SDS) is issued on 1 Jan, 2019 according to requirements of the USA's OSHA Standard 1910.1200 App D.

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

