

Material Safety Data Sheet

IDENTITY (As Read on Label and Line)	Notice: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.
LR44G ALKALINE BUTTON CELL	

Section I

Manufacturer's Name Golden Power Corporation (HK) Ltd.	Telephone Number (852) 3125 2288
Address (Number, Sheet, City, State, and ZIP Code) Flat C, 20/F., Block 1, Tai Ping Industrial Centre, 57 Ting Kok Road, Tai Po, N.T., Hong Kong	Fax Number (852) 3125 2000 / 3125 2001
	Date Prepared 10-Jan-2012
	Signature of Preparer (optional)

Section II – Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Names)	(contents, %/wt)	CAS No.
Manganese Dioxide (MnO ₂)	30.0 %	1313-13-9
Zinc (Zn)	11.0 %	7440-66-6
Potassium Hydroxide (KOH)	4.0 %	1310-58-3
Graphite (C)	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)		7439-89-6
Ferrum (Fe)		7732-18-5

Section III – Physical/Chemical Characteristics

Boiling Point KOH aqua solution = 140 °C	Specific Gravity (H ₂ O=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

MnO₂ is a black powder, Graphite is also a black powder, Zinc is a silver metal.
KOH aqua is a colorless liquid with stimulative order.

Section IV – Fire and Explosion Hazard Data

Flash Point (Method Used) Incombustible	Flammable Limits Not Available	LEL	UEL
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Extinguishing Media: See Special Fire Fighting Procedure

Special Fire Fighting Procedure: In case of fire in an adjacent area, use water, CO₂ or dry chemical extinguishers if cells are packed in their original containers since the fuel of the fire is basically paper products. For bulk quantities of unpackaged cells use LITH-X (Graphite Base). In this case, do not use water.

As with any fire, wear self-contained breathing apparatus to avoid inhalation of hazardous decomposition products.

Unusual Fire and Explosion Hazards

Section V – Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	√	Do not short circuit, charge or dispose of in fire.

Incompatibility (Materials to Avoid) Hazardous polymerization will not occur.

Hazardous Decomposition or Byproducts Not Available

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	√	

Section VI – Health Hazard Data

Route(s) of Entry.	Inhalation?	Yes	Skin?	Yes	Ingestion?	Yes
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Health Hazards (Acute and Chronic) These chemicals are contained in a sealed can. Risk of exposure occurs, only if battery is mechanically or electrically abused. The most likely risk is acute exposure when a cell vents KOH is caustic alkali and attack the skin and eyes. Contact of electrolyte with skin and eyes should be avoided.

Section VII – Ecological Information

Cardnogenicity	NTP?	Not Available	IARC Monographs?	Not Available	OSHA Regulated?	Not Available
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Signs and Symptoms of Exposure KOH can cause chemical burn upon contact with skin.

Medical Conditions
Generally Aggravated by Exposure An acute exposure will not generally aggravate any medical help.

Section VIII –Emergency and First Aid Procedures

In case of skin contact with content of battery, flush immediately with water.
For eye contact, flush with copious amount of water for 10 minutes. If imitation persists, get medical help.

Section IX - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled Wipe out by wet duster.

Section X - Waste Disposal Method

General abandonment

Section XI - Precautions to Be Taken in Handling and Storing

Avoid mechanical or electrical abuse.

Section XII - Other Precautions

Do not short circuit, charge or dispose of in fire. Battery may explode or leak.

Section XIII - Control Measures

Respiratory Protection (Specify Type)		Not Available	
Ventilation	Local Exhaust	Special	
	Not Available	Not Available	
	Mechanical (General)	Other	
	Not Available	Not Available	
Protective Gloves	Butyl	Eye Protection	Safety Glasses
Other Protective Clothing or Equipment		Not Available	
Work / Hygienic Practices		Not Available	

Section XIV – Regulatory Information

Not Available

Section XV – Other Information

Not Available

Section XVI – Transportation Information

Golden Power **LR44G** ALKALINE BUTTON CELL are considered to be “dry cell” batteries and are not listed as dangerous goods under below regulations:

1. Batteries, dry fulfills the requirement of U.S. Department of Transportation (DOT), Special Provision 130, i.e. they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals or batteries to be packed in such a way to prevent short circuits or generation of a dangerous quantity of heat.)”.
 2. International Civil Aviation Administration (ICAO) and International Air Transport Association (IATA), Special Provision A123, i.e. “An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared 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 or batteries to be packed in such a way to prevent short circuits or generation of a dangerous quantity of heat.) is forbidden from transportation.”
 3. International Maritime Dangerous Goods Regulations (IMDG), Special Provision 304, 2010 edition does not regulate these batteries, i.e. "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."
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