Alkaline

Order code	Manufacturer code	Description
18-1375	n/a	L1131 ALKALINE BUTTON CELL (RE)

Sales: 01206 751166
Sales@rapidelec.co.uk
Technical: 01206 835555
Tech@rapidelec.co.uk
Fax: 01206 751188
www.rapidonline.com

MATERIAL SAFETY DATA SHEET

1. Chemical Product and Company Identification

Product Name: Alkaline Manganese Button Cell

Manufacturer: Chung Pak Battery Works Ltd.

Address: 7/F., Chung Pak Commercial Blog., 2 Cho Yuen St., Yau Tong Bay, Kowloon, Hong Kong

Telephone: (00852)27171338

Effective Date: 2008/03/01

2. Composition/Information on Ingredients

Designation		**L1154**	**L1142**	**L1131**	**L1121**
Hazardous Components	CAS No.	wt%	wt%	wt%	wt%
Zinc (Zn)	7440-66-6	14.5	13.2	13.4	10.6
Manganese Dioxide (MnO_2)	1313-13-9	33.5	33.9	26.9	21.8
Potassium Hydroxide (KOH)	1310-58-3	6.0	5.1	5.2	4.1
Mercury (Hg)	7439-97-6	0.497	0.467	0.463	0.376
Cadmium (Cd)	7440-43-9	< 0.001	< 0.001	< 0.001	< 0.001
Lead (Pb)	7439-92-1	0.008	0.008	0.008	0.006

3. Hazards Identification

Routes of Entry: Not applicable under normal conditions

Health Hazards: In case of leakage, will be cause itchy and/or chemical burns when direct contact with electrolyte

Hazards to Environment: Not applicable

Fire and Explosion Hazards: Not applicable

4. First-aid Measures

Skin Contact: If exposed to a leaking battery, remove contaminated clothing. Wash exposed areas with plenty of water and soap. If irritation occurs, consult a physician.

Eyes Contact: If a battery is leakage and materials contact eyes, flush immediately with running water for at least 15 minutes. Consult an ophthalmologist at once.

Inhalation: If vapor from vented or leaked batteries are inhalation, move to fresh air and get medical attention.

Ingestion: Get immediately medical attention, do not induce vomiting or give a liquid to unconscious person.

5. Fire Fighting Measures

Hazard Characteristic: Not available

Hazards Expose to Combustion Products: In case of fire, carbon dioxide, carbon monoxide and other toxic organic substances will be generated. Do not inhale fumes and smoke.

Extinguishing Media: Dry Chemical, Foam, Water, Carbon Dioxide

Special Fire Fighting Procedures: Fire fighters should wear self-contained breathing apparatus.

6. Accidental Release Measures

Precautions: Avoid direct contact with the leaking or ruptured batteries. Avoid short circuit.

Methods for clean up: Care for well-ventilated conditions. Recycle or dispose of the materials in an appropriate way.

7. Handling and Storage

Precaution: Handing and transfer the products carefully, make sure the packing always in good condition. Damaged packing may cause batteries contact together, in this case batteries may short circuit or improperly connected, it cause batteries venting, leaking or exploding.

Storage: Store in a dry, cool and well-ventilated area.

8. Exposure Control/Personal Protection

Exposition/Technical Measures: Atmospheric vapor concentrations must be minimized by adequate ventilation.

Protection of Hands, Eyes, and Skin: None required under normal use conditions. When handling leaking batteries, use gloves and wear safety glasses to protect hands, eyes and skin.

General Safety and Hygiene Measures: Use only as directed.

9. Physical and Chemical Properties

Physical State and Appearance: Solid, Button

Odor: Odorless	pH: N/A
Melting Point (℃): N/A	Specific Gravity (H_2O=1): N/A
Boiling Point (℃): N/A	Vapor Density (Air=1): N/A
Vapor Pressure (kPa): N/A	Heat of Combustion (kJ/mol): N/A
Critical Temperature (℃): N/A	Critical Pressure (MPa): N/A
Partition Coefficient: N/A	Flash Point (℃): N/A
Ignition Temperature (℃): N/A	Explosion Limit % (V/V): N/A
Solubility in Water: N/A	Solubility in Other Solvents: N/A

10. Stability and Reactivity

Stability: Stable

Incompatibility: Reactive with strong oxidizing agents

Condition to Avoid: Avoid shorting, mechanical & thermal abuse

Hazardous Polymerization: Will not occur

Hazardous Decomposition: None

11. Toxicological Information

Note: Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.

Toxicity to Animals: Not applicable

Chronic Effects on Human: Not applicable

12. Ecological Information

This product has not been tested for environmental effects.

13. Disposal Consideration

Dispose in accordance with Federal, States and local regulations

14. Transport Information

Alkaline Zinc Manganese Dioxide Dry Battery is unregulated for purpose of transportation by U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAA), International Air Transport Association (IATA) and the International Maritime Dangerous Goods regulations (IMDG). The only DOT requirement for shipping these batteries is Special Provision 130 which states: "Batteries, dry, are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals)." The only requirements for shipping these batteries by ICAO and IATA is Special Provision A123 which states: "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) is forbidden from transportation. "The International Maritime Dangerous Goods Code (IMDG) regulate them for ocean transportation under Special Provision 304 which says: "Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to the provisions of this Code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are : alkaline-manganese, zinc-carbon, nickel metal hydride and nickel-cadmium batteries"

The requirements for shipping these batteries, in all modes of transportation, are that they be separated from each other to prevent short-circuits and to prevent movement that could lead to short-circuits. Products must also be packed in strong packaging that can withstand the rigors normal to transportation.

15. Regulatory Information

Main Chemical Limitation of EEC, RoHS, TCLP & US Public Law

Chemical	EEC (2006_66_EC) wt%	RoHS** (2002_95_EC) mg/kg	TCLP (Toxic Characteriestics Leaching Procedure) mg/kg	US Public Law*** mg/cell
Mercury (Hg)	<0.0005%*	1000mg/kg	0.2	25
Cadium (Cd)	<0.002%	100mg/kg	1	-
Lead (Pb)	<0.4%	1000mg/kg	5	-

Notes:

* Button cells with a mercury content of no more than 2% by wegiht is exempted (Article 4, 2006/66/ec)

** Quoted limit is referred to RoHS Directive 2002/95EC and 2005/618/EC.According to the

document of Frequently Asked Questions on RoHS and WEEE published from European Commission in May 2005, the battery does not apply to RoHS Directive.

*** According to the US Mercury-Containing Battery Management Act. Public Law No.104-142 (1996) SEC 204 Zinc-Carbon battery should not contains mercury that was intentionally introduced.

16. Other information

Do not heat or dispose of in fire. Do not recharge or disassemble the battery.

Notice to reader:

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