

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.
G6F22 LONG LIFE BATTERY	

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 02-Jan-2013
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)	28.88%	1313-13-9
Acetylene Black (C ₂ H ₂)	5.25 %	74-86-2
Zinc (Zn)	8.75 %	7440-66-6
Zinc Chloride (ZnCl ₂)	4.16 %	7646-85-7
Ammonium Chloride (NH ₄ Cl)	8.70 %	12125-02-9
Mercury (Hg)	<0.0001 %	7439-97-6
Lead (Pb)	0.025 %	7439-92-1
Cadmium (Cd)	<0.0005%	7440-43-9

Section III – Physical/Chemical Characteristics

Boiling Point ZnCl ₂ & NH ₄ Cl aqua solution = 104 °C	Specific Gravity (H ₂ O=1) Zn = 7.1, ZnCl ₂ = 2.91, NH ₄ Cl = 2.0
Vapor Pressure (mmHg) ZnCl ₂ aqua solution = 3mmHg at 20 °C NH ₄ Cl aqua solution = 2mmHg at 20 °C	Melting Point MnO ₂ decompose at 535°C, Zn = 420 °C ZnCl ₂ & NH ₄ Cl aqua = -2 °C
Vapor Density (Air = 1)	Evaporation Rate (Butyl Acetate = 1)

Solubility in Water ZnCl₂ & NH₄Cl – complete

Appearance and Color

MnO₂ is a black powder, Acetylene Black is also a black powder, and Zinc is a silver metal.
ZnCl₂ & NH₄Cl 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 Do not short circuit, charge or dispose of in fire.
	Stable	√	
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
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 Zn - NH ₄ Cl is acidic 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
Signs and Symptoms of Exposure		ZnCl ₂ & NH ₄ Cl 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 irritation 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

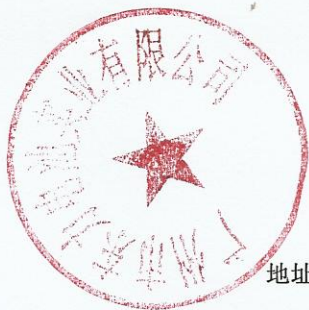
Section XV – Other Information

Not Available

Section XVI – Transportation Information

Golden Power **G6F22** LONG LIFE BATTERY 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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广州市东力电池实业有限公司

GUANGZHOU EASTPOWER BATTERY IND. CO., LTD.

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星都大酒店 8012~8014 室 ROAD (MIDDLE), GUANGZHOU, CHINA

电话: (020)84256478 传真: (020)84470824 TEL: (020)84256478 FAX: (020)84470824

Material Safety Data Sheet

1. Chemical Product and Company Identification

Product name: Zinc Carbon Battery
Manufacturer/Supplier: Guangzhou Eastpower Battery Ind.Co., Ltd.
Xinzao Town, Panyu District, Guangzhou

File Number: 130101-6F22

Contact Person: Ms Situ

Contact No: 86-20- 84256478

Date: 2013.01.01

Address: Xinzao Town, Panyu District , Guangzhou

2. Composition/Information on Ingredients

No.	Name	Spec.	Unit: %
			6F22
1	Iron Label (Tinplate)		15.9
2	Cell Snap (Metallic Copper、 P.P)		4.8
3	Negative Bottom (P.P)		1.2
4	Positive Materials (MnO ₂ , ZnCl ₂ , C)		56.4
5	Positive, Negative Stereotype Plate (Tinplate)		3.2
6	Electrode Slice (Positive: Metal Zinc、 Conductive Coating)		13.5
7	Sealant (White Wax)		2.1
8	PVC		2.9

The components in this section may only represent a hazard, if the batteries are damaged.

3. Hazards identification

Warning: When recharge batteries or discard in fire or use used battery with new one or connected improperly may cause battery vent leak or explode.

Damaged batteries may cause skin and eye burn, may cause respiratory tract irritation.

4. First-aid Measure

General speaking it is not expected to result in situation that requires first-aid measure, except the damaged batteries (due to improper handling) may cause batteries release the contents.

Inhalation: If vapour or fumes from vented or leaked batteries are irritating, move to fresh air and get medical attention.

Eyes: Check for and remove any contact lens, flush eyes with plenty of water, holding eyelids open, for at least 20 minutes, get medical help.

Skin: Immediately move the metal fragments and chemical components flush skin with plenty of water at least 15 minutes, get medical help, if necessary.

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

5. Fire Fighting Measure

Extinguishing Media: Use appropriate agent for adjacent fire.

Flash Point: Not available

Auto-ignition Temperature: Not available

Flammable Limits: Not available

Combustion Products: Oxide of Zinc, Oxide of Manganese

6. Accidental Release Measure

Not Applicable

7. Handling And Storage

Precaution: Handling and transfer the products with care 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 Controls/Personal Protection

Exposure control: if necessary, set local exhaust ventilation.



Personal protection: gloves, safety glasses, dust respirator.

9. Physical And Chemical Properties

Physical state and appearance: Solid

Melting point: Not available

Vapour pressure: Not available

Vapour density: Not available

pH(1% soln/water): Not available

Solubility: Insoluble

Volatility: Not available

Specific Gravity: (water=1) 1.54

Odour: Odourless

Taste: Not available

10. Stability And Reactivity

Stability: The product is stable

Instability Temperature: Not available

Incompatibility: Reactive with acids and alkalis

Corrosivity: None

Hazardous Polymerization: Will not occur

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 available

Chronic effects on human: Not available

12. Ecological Information

This product has not been tested for environmental effects.

13. Disposal Consideration

Waste disposal: Consult your local or regional authorities.

Disposal may be subject national, state, or local laws.

14. Transportation Information IATA EDITION 54TH, 2013

Eastpower batteries are considered to be "Dry cell" batteries and are unregulated for purpose of transportation by the U.S. Department of Transportation (DOT), International

Civil Aviation Administration (ICAO), International Air Transport Association (IATA) and 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 terminal).The only requirement for shipping these batteries by ICAO and IATA DGR 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-circuit. Products must also be packed in strong packaging that can withstand the rigor normal to transportation.

15. Regulatory Information

Special requirement be according to the local regulations.

16. Other Information

The data in this Material Safety Date Sheet relates only to the specific material designated herein.

MATERIAL SAFETY DATA SHEET**1. Chemical Product and Company Identification**

Product Name: Carbon Zinc Battery 6F22

Manufacturer: DONGGUAN TIANQIU ENTERPRISE CO., LTD.

Address: TianQiu Industrial Park, Xinji Industrial Zone, Machong Town, Dongguan, Guangdong, P.R.China

Telephone: 0769-81210202

**2. Composition/Information on Ingredients**

Hazardous Components	Approx wt%	CAS #	EC #
Zinc (Zn)	2.825	7440-66-6	231-175-3
Manganese Dioxide (MnO ₂)	47.231	1313-13-9	215-202-6
Graphite (C)	0.963	7782-42-5	231-955-3
Carbon Black	0.83	1333-86-4	215-609-9
Ammonium Chloride (NH ₄ CL)	7.97	12125-02-9	235-186-4
Iron(Fe)	27.25	7439-89-6	231-096-4
Water(H ₂ O)	9.57	7732-18-5	231-791-2
Avena Sativa Starch	0.124	9005-25-8	232-679-6
Asphalt	2.07	8052-42-4	232-490-9
Paper	1.167	RR-01108-5	----
Mercury (Hg)	<0.0001	7439-97-6	231-106-7
Cadmium (Cd)	< 0.001	7440-43-9	231-152-8
Lead (Pb)	0.0282	7439-92-1	231-100-4

**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 Exposed 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: In case of fire, you can use any class of fire extinguisher.

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: Handling 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: No 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: Cuboidal

Odor: Odorless

pH: N/A

Melting Point (°C): N/A

Specific Gravity (H₂O=1): N/A

Boiling Point (°C): N/A

Vapor Density (Air=1): N/A

Vapor Pressure (kPa): N/A

Heat of Combustion (kJ/mol): N/A

Critical Temperature (°C): N/A

Critical Pressure (MPa): N/A

Partition Coefficient: N/A

Flash Point (°C): N/A

Ignition Temperature (°C): 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: None

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

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 TIANQIU Carbon Zinc batteries has been designed to be compliant with these regulatory concerns.

Carbon Zinc batteries (sometimes referred to as "Dry cell" batteries) are not listed as dangerous goods under the IATA Dangerous Goods Regulation Edition 58th, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations. All TIANQIU Carbon Zinc 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.



Regulatory Body	Is regulate?
ADR	Not regulate
IMDG	Not regulate
UN	Not regulate
US DOT	Not regulate
IATA	Not regulate
ICAO	Not regulate

15. Regulatory Information

Special requirement be according to the local regulators.

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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