

Material Safety Data Sheet

S09285

9364.

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.
G4R25 HEAVY DUTY BATTERY	

Section I

Manufacturer's Name	Telephone Number
Address (Number, Street, City, State, and ZIP Code)	Fax Number
	Date Prepared Mar 03, 2008
	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)	32.96 %	1313-13-9
Acetylene Black (C ₂ H ₂)	4.48 %	74-86-2
Graphite (C)	5.85 %	7782-42-5
Zinc (Zn)	16.26 %	7440-66-6
Zinc Chloride (ZnCl ₂)	3.13 %	7646-85-7
Ammonium Chloride (NH ₄ Cl)	11.57 %	12125-02-9
Cadmium (Cd)	≤ 0.002%	7440-43-9
Mercury (Hg)	≤ 0.0005 %	7439-97-6
Lead (Pb)	≤ 0.4 %	7439-92-1

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 ZnCl ₂ & NH ₄ Cl - complete	
Appearance and Color MnO ₂ is a black powder, Acetylene Black is also a black powder, and Zinc is a silver metal. ZnCl ₂ & NH ₄ Cl aqua is a colorless liquid with stimulative odor.	

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

Cardiogenicity	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
	Mechanical (General)	Other	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 batteries are considered to be "dry cell" batteries and are not regulated for purposes of transportation with reference to requirements of

1. U.S. Department of Transportation (DOT), Special Provision 130, i.e. "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)".
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) is forbidden from transportation."
3. International Maritime Dangerous Goods Regulations (IMDG), Special Provision 304, i.e. "Batteries, dry, containing corrosive electrolyte which will not flow out of 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 include alkali-manganese, silver oxide, zinc carbon, nickel metal hydride and nickel-cadmium batteries.
