

Material Safety Data Sheet U.S. Department of

Labor

May be used to comply with
Administration

OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

Occupational Safety and Health

(Non-Mandatory Form)

Form Approved

OMB No. 1218-0072

IDENTITY *(As Used on Label and List)*

"Novacell" Brand Alkaline Manganese
Button cell Battery- NV-AG13

Note: Blank spaces are not permitted. If any
item is not applicable, or no information is
available, the space must be marked to
indicate that.

Section I

Manufacturer's Name: Gloso HK Industries Ltd.	Emergency Telephone Number 852-26900808
Address <i>(Number, Street, City, State, and ZIP Code)</i> Flat D, 3/F., Block 4, Kwun Tong Industrial Centre	Telephone Number for Information 852-26900808
436-446 Kwun Tong Rd., Kwun Tong,	Date Prepared April 27, 2005
Kowloon, HKSAR	Signature of Preparer <i>(optional)</i>

Section II - Hazard Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Manganese Dioxide				25.7%+/-0.5%
Graphite				3.4%+/-0.1
Zinc				10.7%+/-0.5%
Mercury				0.3902%
Cadmium				<0.002%
Lead				<0.01%
Potassium Hydroxide				3.7%+/-0.5%

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 (mm Hg.) KOH aqua solution	3mmHg at 20°C	Melting Point – MnO ₂ – Decompose at 535°C	
Vapor Density (AIR = 1)	N.A.	Evaporation Rate (Butyl Acetate = 1)	N.A.
Solubility in Water – KOH - Complete			
Appearance and Odor – MnO ₂ is a black powder, Graphite is also a black powder, Zinc is a silver metal. KOH aqua is a colorless Liquid with stimulated odor.			

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) Incombustible	Flammable Limits N.A.	LEL N.A.	UEL N.A.
Extinguishing Media Carbon Dioxide, Dry chemical or Foam extinguishers			
Special Fire Fighting Procedures N.A.			
Unusual Fire and Explosion Hazards: Do not dispose of battery in fire – may explode. Do not short-circuit battery – may cause burns.			

Section V - Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	
Incompatibility (<i>Materials to Avoid</i>)			
Hazardous Decomposition or Byproducts When heated, battery may emit hazardous vapour of KOH/NaOH and Hg			
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation? N.A.	Skin N.A.	Ingestion? N.A.
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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 when a cell vents KOH is caustic alkali and attack the skin and eyes. Contact of electrolysis with skin and eyes should be avoided.

Carcinogenicity:

NTP?

IARC Monographs?

OSHA Regulated?

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.

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 ten minutes. If irritation persists, get medical help.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled
Wipe out by wet duster.
Waste Disposal Method
General abandonment precautions to be taken in handling and storing
Precautions to Be taken in Handling and Storing
Avoid mechanical or electrical abuse.
Other Precautions
Do not short circuit, charge or dispose of in fire. Battery may explode or leak.

Section VIII - Control Measures

Respiratory Protection (<i>Specify Type</i>)		N.A.	
Ventilation	Local Exhaust N.A.	Special	N.A.
	Mechanical (<i>General</i>) N.A.	Other	N.A.
Protective Gloves Butyl		Eye Protection Safety Glasses	
Other Protective Clothing or Equipment		N.A.	
Work/Hygienic Practices		N.A.	