

## (Material) Safety Data Sheet(M)SDS

|                                      |                                                                                                                                                   |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. |
| <b>CR2032</b> LITHIUM BUTTON CELL    |                                                                                                                                                   |

## Section I

|                                                                                                                                                   |                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Manufacturer's Name<br>Guangzhou Nanhua Golden Power Electronic Co.,Ltd..                                                                         | Telephone Number<br>(8620) 8326 6440 |
| Address (Number, Sheet, City, State, and ZIP Code)<br>Rm.706, 7/F,R & F New World Center, No.307<br>Guangzhou Middle Avenue,Guang Zhou, P.R.China | Fax Number<br>(8620) 8326 6554       |
|                                                                                                                                                   | Date Prepared<br>04-Jan-2021         |
|                                                                                                                                                   | Signature of Preparer (optional)     |

## Section II – Hazardous Ingredients/Identity Information

| Hazardous Components (Specific Chemical Identity, Common Names)      | (contents, %/wt) | CAS No.   |
|----------------------------------------------------------------------|------------------|-----------|
| Manganese Dioxide (MnO <sub>2</sub> )                                | 15%-40%          | 1313-13-9 |
| Propylene Carbonate (C <sub>4</sub> H <sub>6</sub> O <sub>3</sub> )  | 2%-6%            | 108-32-7  |
| 1,2-Dimethoxyethane (C <sub>4</sub> H <sub>10</sub> O <sub>2</sub> ) | 1%-5%            | 110-71-4  |
| Lithium Perchlorate (LiClO <sub>4</sub> )                            | 0%-1.5%          | 7791-03-9 |
| Lithium (Li)                                                         | 1%-5%            | 7439-93-2 |
| Graphite (C)                                                         | 1%-4%            | 7782-42-5 |
| Mercury (Hg)                                                         | < 0.0001%        | 7439-97-6 |
| Lead (Pb)                                                            | < 0.001 %        | 7439-92-1 |
| Cadmium (Cd)                                                         | < 0.0005%        | 7440-43-9 |

## Section III – Physical/Chemical Characteristics

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| Boiling Point           | Specific Gravity (H <sub>2</sub> O=1)<br>MnO <sub>2</sub> = 4.4, Zn = 7.1 |
| Vapor Pressure (mmHg)   | Melting Point<br>MnO <sub>2</sub> decompose at 535°C<br>Zn = 420 °C       |
| Vapor Density (Air = 1) | Evaporation Rate<br>(Butyl Acetate = 1)                                   |

Solubility in Water

Appearance and Color

MnO<sub>2</sub> is a black powder, Graphite is also a black powder, Zinc is a silver metal.

## Section IV – Fire and Explosion Hazard Data

|                                            |                                   |     |     |
|--------------------------------------------|-----------------------------------|-----|-----|
| Flash Point (Method Used)<br>Incombustible | Flammable Limits<br>Not Available | LEL | UEL |
|--------------------------------------------|-----------------------------------|-----|-----|

Extinguishing Media: See Special Fire Fighting Procedure

Special Fire Fighting Procedure: In case of fire in an adjacent area, use water, CO<sub>2</sub> 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

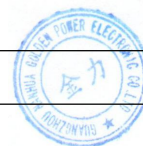
## Section V – Reactivity Data

|           |          |   |                                                     |
|-----------|----------|---|-----------------------------------------------------|
| 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 |
|--------------------|-------------|-----|-------|-----|------------|-----|

|                                    |                                                                                                                                 |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 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. |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|

## Section VII – Ecological Information

|                |      |               |                  |               |                 |               |
|----------------|------|---------------|------------------|---------------|-----------------|---------------|
| Cardnogenicity | NTP? | Not Available | IARC Monographs? | Not Available | OSHA Regulated? | Not Available |
|----------------|------|---------------|------------------|---------------|-----------------|---------------|

|                                |                                                 |
|--------------------------------|-------------------------------------------------|
| Signs and Symptoms of Exposure | can cause chemical burn upon contact with skin. |
|--------------------------------|-------------------------------------------------|

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

## 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        | Not Available | Special | Not Available |
|             | Mechanical (General) | Not Available | 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

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-- Average Weight : 3.2g

-- Metallic Lithium: ~0.08g

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## Section XVI – Transportation Information

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Guangzhou Nanhua Golden Power Electronic Co.,Ltd. hereby certify that Lithium Coin Cell **CR2032** meets the requirement of each applicable test in the UN Manual of Tests and Criteria, Part III sub-section 38.3. and all the requirements Section II of PI968~PI970.

GOLITE declares that the lithium coin cells concerned do not contain more than

1.0g ELC (Equivalent Lithium Contents)

These batteries, are considered as “Lithium Batteries – Not Restricted” when they can meet the current 62<sup>TH</sup> edition of the requirements of IATA Dangerous Goods Regulations 2021 and IMDG of IMO Dangerous Goods Regulations, and they can meet the requirements of Special provision listed in IMDG book, could be shipped as normal cargo"

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)".

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