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**MATERIAL SAFETY DATA SHEET**

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IDENTITY                    Product Category                    :    Rechargeable Lithium-ion Battery  
                                  Model Name                            :    S1  
                                  Brand                                    :    ring  
                                  Nominal Capacity                    :    5200 mAh  
                                  Nominal Voltage                     :    3.8V  
                                  Watt-hour                             :    19.76 W/hr  
                                  Chemical System                     :    Lithium Cobaltate / Carbon  
                                  Desigened for Recharge             :     Yes  No

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**SECTION 1 MANUFACTURER'S INFORMATION**

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Manufacturer's Name        :    Welltech Energy Inc.  
Supplier's Name            :    Welltech Energy Inc.  
Supplier's Address         :    2F, No.181, An Mei St., Nei Hu District, Taipei City 11484, Taiwan  
Information Telephone     :    886-2-2790-7958  
Emergency Telephone      :    886-2-2790-7959  
Date Prepared             :    2019/11/21

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**SECTION 2 HAZARDS IDENTIFICATION**

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**PRIMARY ROUTES OF ENTRY**

Skin contact, Skin absorption, Eye contact, Inhalation, and Ingestion : NO

**SYMPTOMS OF EXPOSURE**

Skin contact: No effect under routine handling and use.

Skin absorption: No effect under routine handling and use.

Eye contact: No effect under routine handling and use.

Inhalation: No effect under routine handling and use.

REPORTED AS CARCINOGEN : Not applicable

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**SECTION 3 MATERIAL AND INGREDIENTS INFORMATION**

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## Battery Cell :

Chemical Composition	CAS NO.	Weight (%)
The electrolyte	21324-40-3 872-36-6 616-38-6 (LiPF <sub>6</sub> +EC+DMC)	13~23%
Polyethylene	9002-88-4	5-8%
Cu-foil	7440-50-8	2~5%
AL-foil	7429-90-5	2~5%
The plastic film	9003-07-0 7429-90-5 32131-17-2 (PP+Al+ Nylon)	3~5%
Cathode materials	12190-79-3	40~45%
Anode materials	7782-42-5	20~24%

## Circuit Module :

HAZARDOUS INGREDIENTS	%	CAS number
Lead	<0.1	7439-92-1
Mercury	0	7439-97-6
Chromium	0	7440-47-3
Cadmium	0	7440-43-9

## Plastic Parts :

HAZARDOUS INGREDIENTS	%	CAS number
Lead	<0.1	7439-92-1
Nickel	<0.01	7440-02-0
CFCs	0	75-69-4
Polychlorinated Biphenyls	0	1336-36-3

## SECTION 4 FIRST-AID MEASURES

## Internal cell materials of an opened battery cell



• Inhalation :

Make the victim blow his/her nose, gargle. Seek medical attention if necessary.

• Skin contact :

Remove contaminated clothes and shoes immediately. Wash the adhere or contact region with soap and plenty of water immediately.

• Eye contact :

Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

**A battery cell and internal cell materials of an opened battery cell**

• Ingestion :

Induce vomiting. When it is impossible or the feeling is not well after vomiting, seek medical attention.

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SECTION 5 FIRE-FIGHTING MEASURE

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GENERAL HAZARD

Cell is not flammable but internal organic material will burn if the cell is incinerated. Combustion products include, but are not limited to hydrogen fluoride, carbon monoxide and carbon dioxide.

EXTINGUISHING MEDIA

Use extinguishing media suitable for the materials that are burning.

SPECIAL FIREFIGHTING INSTRUCTIONS

If possible, remove cell(s) from fire fighting area. If heated above 125°C, cell(s) can explode/vent.

FIREFIGHTING EQUIPMENT

Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

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SECTION 6 ACCIDENTAL RELEASE MEASURES

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ON LAND

Place material into suitable containers and call local fire/police department.

IN WATER

If possible, remove from water and call local fire/police department.

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SECTION 7 HANDLING AND STORAGE

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Storage : Store in a cool, well-ventilated area. Do not expose to high temperature ( 45 °C ) .  
Since short circuit can cause burn hazard or safety vent to open, do not store

	with metal jewelry, metal covered tables, or metal belt.
Handling	: Do not disassemble, crush or solder. Do not short + and – terminals with a metal. Do not open the battery.
Charging	: Charge within the limits of 0°C to 60°C temperature. Charge with specified charger designed for this battery.
Discharging	: Discharge within the limits of -20°C to 60°C temperature.
Battery Energy Rate	: The cell capacity at shipment is 30% of the full capacity.
Disposal	: Dispose in accordance with applicable federal, state and local regulations.
Warning	: Fire or explosion if incorrectly installed, shorted, disassembled, heated or disposed of in fire.

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## SECTION 8 Exposure controls/personal protection

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### Engineering controls

Keep away from heat and open flame. Store in a cool, dry place.

### Personal Protection

#### Respirator

Not required during normal operations. SCBA required in the event of a fire.

#### Eye/face protection

Not required beyond safety practices of employer.

#### Gloves

Not required for handling of cells.

#### Foot protection

Steel toed shoes recommended for large container handling.

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## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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Physical State	Form: Prismatic
	Color: Silvery
	Odour: Monotony

Change in condition:	
pH, with indication of the concentration	Not applicable
Melting point/freezing point	Not available.
Boiling Point, initial boiling point and Boiling range:	Not available.
Flash Point	Not available.

Upper/lower flammability or explosive limits	Not available.
Vapor Pressure:	Not available.
Vapor Density: (air=1)	Not available.
Density/relative density	Not available.
Solubility in Water:	Insoluble
n-octanol/water partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Odour threshold	Not available.
Evaporation rate	Not available.
Flammability (soil, gas)	Not available.
Viscosity	Not available.

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### SECTION 10 STABILITY AND REACTIVITY

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**REACTIVITY**

None

**INCOMPATIBILITIES**

None during normal operation. Avoid exposure to heat, open flame, and corrosives.

**HAZARDOUS DECOMPOSITION PRODUCTS**

None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.

**CONDITIONS TO AVOID**

Avoid exposure to heat and open flame. Do not puncture, crush or incinerate

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### SECTION 11 TOXICOLOGICAL INFORMATION

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This product does not elicit toxicological properties during routine handling and use.

Sensitization	Teratogenicity	Reproductive toxicity	Acute toxicity
NO	NO	NO	NO

If the batteries are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

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### SECTION 12 ECOLOGICAL INFORMATION

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Some materials within the cell are bioaccumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.



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### SECTION 13 DISPOSAL CONSIDERATIONS

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#### CALIFORNIA REGULATED DEBRIS

RCRA Waste Code: Non-regulated

Dispose of according to all federal, state, and local regulations.

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### SECTION 14 Transport information

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The Lithium Ion batteries are considered to be "Rechargeable batteries" and meet the requirements of transportation by the U.S. Department of Transportation(DOT), International Civil Aviation Administration(ICA0), International Air Transport Association(IATA) Dangerous Goods Regulations (61th Edition,2020. Special Provision A88, A99, A154 , A164, A181, A182 and Section II or IB of package instruction,966 or 967 for lithium ion batteries for UN 3481, 965 for lithium ion batteries for UN 3480) and belong to non-dangerous goods and meets all requirements under UN Manual of Tests and Criteria Part III, subsection 38.3.

The International Maritime Dangerous Goods (IMDG) Code · 2018 Edition ( Incorporating Amendment 39-18 ) with special provision 188 & 230.

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### SECTION 15 REGULATORY INFORMATION

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Regulations specifically applicable to the product :

- The transport of the lithium batteries is regulated by the United Nations, "Model Regulations on Transport of Dangerous Goods Special Provisions A188".
  - Lithium batteries are subject to shipping requirements exceptions under 49 CFR 173.185(paragraph c).
  - Shipping of Lithium batteries in aircrafts are regulated by the International Civil Aviation Organization (ICA0) and the International Air Transport Association (IATA) requirements in Special Provision "A48".
  - Shipping of lithium batteries on sea are regulated the International Maritime Dangerous Goods (IMDG) requirements.
  - The internal component (thionyl chloride) is non-hazardous and under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 190.1200.
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### SECTION 16 SPECIAL PROTECTION INFORMATION

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Respiratory Protection : Not necessary under normal use.  
Ventilation : Not necessary under normal use.  
Eye Protection : Not necessary under normal use.  
Protective Gloves : Not necessary under normal use.

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