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Report No.: CTC20201286S02

Material Safety Data Sheet

Product Name.....:	Lithium Battery
Trademark.....:	--
Main Model.....:	CR2025
Applicant.....:	Dongguan King Power Digital Technology Co.,Ltd
Address of Applicant.....:	No.7,Buliding D, Longjiang 2nd Road, Qingxi Town, Dongguan City, Guangdong Province, P.R.China
Manufacturer.....:	Heyuan dongrun new energy technology co. LTD.
Address of Manufacturer.....:	The second floor, north of longling road, longling industrial park, longling industrial park, yuancheng district, heyuan city.
Nominal Voltage.....:	3.0V
Typical Capacity.....:	150mAh ,0.450Wh
Weight.....:	2.4g Max
Shape and Physical Dimension(mm).....:	Button, H : 2.5mm Φ: 20mm
Report Reference No......:	CTC20201286S02
Date of Issue.....:	Sep.01, 2020
Testing Laboratory.....:	CTC Laboratories,Inc.
Address.....:	1F, Block 2 & 2F，Block 1, Jiaquan Building, Guanlan High-tech Park, LongHua District, Shenzhen, GuangDong, PRC
Tested by (name + signature).....:	Paul Chen
Compiled by (name + signature).....:	Max Chen
Approved by (name + signature).....:	Totti Zhao

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Section 1. Chemical Product and Company Identification	
Products Name	Lithium Battery
Model	CR2025
Manufacture Name	Dongguan King Power Digital Technology Co.,Ltd
Address	No.7,Buliding D, Longjiang 2nd Road, Qingxi Town, Dongguan City, Guangdong Province, P.R.China
Emergency Telephone No.	18576741421
Fax	--
E-mail address	renqiqi@bldpower.cn
Item Number	CTC20201286S02
Date Prepared	Sep.01, 2020
Referenced documents	ISO 11014:2009 Safety data sheet for chemical products

Section 2. Hazards Identification	
Preparation Hazards and Classification	When the battery is In extreme pressure deformation, high-temperature environment, overload, short-circuit condition, or disassemble the battery, an explosion of fire and chemical burn hazards may occur.
Apperance, Color and Odor	Solid object with no odor,silver.
Primary Route(s) of Exposure	These chemicals are contained in a sealed aluminium enclosure. Risk of exposure occurs only if the cell is mechanically, thermally or electrically abused to the point of compromising the enclosure. If this occurs, exposure to the electrolyte solution contained within can occur by inhalation, ingestion, eye contact and skin contact.
Potential Health Effects	ACUTE (short term): See section 8 for exposure controls In the event that this battery has been ruptured, the electrolyte solution contained within the battery would be corrosive and can cause burns. Inhalation: A battery volatilizes no gas unless it was damaged. Damaged battery will volatilize little gas that may stimulate the respiratory tract or cause an anaphylaxis in serious condition. Ingestion: Swallowing battery will be damaged to the respiratory tract and cause chemical burns to the stomach; in serious conditions it will cause permanent damage. Skin: In normal condition, contact between the battery and skin will not cause any harms. Contact with a damaged battery may cause skin allergies or chemical burns. Eye: In normal condition, contact between the battery and eyes will not cause any

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	harms. However, the gas volatilize from a damaged battery may be harmful to eyes.
Medical Conditions Aggravated by Exposure	Not applicable.
Reported as Carcinogen	Not applicable.

Section 3. Composition/Information on Ingredients		
Chemical Name	Percent of Content	CAS No.
Manganese Dioxide	30%	1313-13-9
Propylene Carbonate	6%	108-32-7
Lithium Perchlorate	1.5%	7791-03-9
Lithium or Lithium Alloy	5%	7439-93-2
Graphite	4%	7782-42-5
Stainless steel	53.5%	12597-68-1
Note: CAS No. = Chemical Abstract Service Registry Number.		

Section 4. First Aid Measures	
Skin Contact	Not anticipated. If the battery is leaking and the contained material contacts the skin, flush with copious amounts of clear water for at least 15 minutes.
Eye Contact	Not anticipated. If the battery is leaking and the contained material contacts eyes, flush with copious amounts of clear water for at least 15 minutes. Get medical attention at once.
Inhalation	Not anticipated. If the battery is leaking, remove to fresh air. If irritation persists, consult a physician.
Ingestion	Not anticipated. If the battery is leaking and the contained material is ingested, rinse mouth and surrounding area with clear water at once. Consult a physician immediately for treatment.

Section 5. Fire Fighting Measures	
Unusual Fire and	Battery may explode or leak potentially hazardous vapors subject to: exposed to

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Explosion Hazards	excessive heat (above the maximum rated temperature as specified by the manufacturer) or fire, over-charged, short circuit, punctured and crushed.
Hazardous Combustion Products	Fire, excessive heat, or over voltage conditions may produce hazardous decomposition products. Damaged batteries can result in rapid heating and the release of flammable vapors.
Extinguishing Media	Dry chemical type extinguishers are the most effective means to extinguish a battery fire. ACO_2 extinguisher will also work effectively.
Fire Fighting Procedures	Use a positive pressure self-contained breathing apparatus if batteries are involved in a fire. Full protective clothing is necessary. During water application, caution is advised as burning pieces of flammable particles may be ejected from the fire.

Section 6. Accidental Release Measures
The material contained within the battery would only be released under abusive conditions. In the event of battery rupture and leakage, collect all the released materials that are not hot or burning in an appropriate waste disposal container while wearing proper protective clothing and ventilate the area. Placed in approved container and disposed according to the local regulations.

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Section 7. Handling and Storage	
Handling	1. Batteries are designed to be recharged. However, improperly charging a battery may cause the battery to flame. When charging the battery, use dedicated chargers and follow the specified conditions. 2. Never disassemble or modify a battery. 3. Do not immerse, throw, and wet a battery in water. 4. Should a battery unintentionally be crushed, thus releasing its contents, rubber gloves must be used to handle all battery components. Avoid the inhalation of any vapors that may be emitted. 5. Short circuit causes heating. In addition, short circuit reduces the life of the battery and can lead to ignition of surrounding materials. Physical contact with to short-circuited battery can cause skin burn. 6. Avoid reversing the battery polarity, which can cause the battery to be damaged or flame. 7. In the event of skin or eye exposure to the electrolyte, refer to Section 4, First Aid Measures.
Storage	1. Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks. Do not place batteries near heating equipment, nor expose to direct sunlight for long periods. 2. Do not store batteries above 30℃ or below –5℃. Store batteries in a cool (about 20±5℃) in a long time, dry and ventilated area that is subject to little temperature change. Elevated temperatures can result in reduced battery cycle life. Battery exposure to temperatures in excess of 60℃ will result in the battery venting flammable liquid and gases. 3. Keep batteries in original package until use and do not jumble them.

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Section 8. Exposure Controls/Personal Protection	
Engineering Controls	Keep away from heat and open flame.
Ventilation	Not necessary under conditions of normal use. In case of abuse, use adequate mechanical ventilation (local exhaust) for the battery that vent gas or fumes.
Respiratory Protection	Not necessary under conditions of normal use. If battery is burning, leave the area immediately. During fire fighting, fireman should use self-contained breathing, full-face respiratory equipment. Fires may be fought but only from safe fire fighting distance, evacuate all persons from the area of fire immediately.
Eye Protection	Not necessary under conditions of normal use. Use safety glasses with side shields if handling a leaking or ruptured battery.
Body Protection	Not necessary under conditions of normal use. Use rubber apron and protective working in case of handling a leaking of ruptured battery.
Protective Gloves	Not necessary under conditions of normal use. Use chemical resistant rubber gloves if handling a leaking or ruptured battery.
Others	Use good chemical hygiene practice. Wash hands thoroughly after cleaning-up a battery spill caused by leaking battery. No eating, drinking, or smoking in battery storage area.

Section 9. Physical and Chemical Properties	
State	Form: Solid, Colour: Black, Odour: Monotony
pH	N/A
Melting point/freezing point	N/A
Boiling Point, initial boiling point and Boiling range	N/A
Flash Point	N/A
Upper/lower flammability or explosive limits	N/A
Vapor Pressure	N/A
Vapor Density: (Air = 1)	N/A
Density/relative density	N/A
Solubility in Water	insoluble
n-octanol/water partition coefficient	N/A
Auto-ignition temperature	130 degree
Decomposition temperature	N/A
Evaporation rate	N/A
Flammability (soil, gas)	N/A
Viscosity	N/A

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Section 10. Stability and Reactivity	
Stability	Stable
Conditions to Avoid	Do not heat, throw into fire, disassemble, short circuit, immerse in water or overcharge, etc.
Incompatibility	None during normal operation. Avoid exposure heat, open flame and corrosives.
Hazardous Polymerization	Will not occur
Hazardous Decomposition Products	The battery may release irritative gas once the electrolyte leakage.

Section 11. Toxicological Information	
The battery does not elicit toxicological properties during routine handling and use. If the battery is opened through misuse or damage, discard immediately. Internal components of cell are irritant and sensitization.	
Irritancy	The electrolytes contained in this battery can irritate eyes with any contact. Prolonged contact with the skin or mucous membranes may cause irritation.
Sensitization	No information is available.
Teratogenicity	No information is available.
Carcinogenicity	No information is available.
Mutagenicity	No information is available.
Reproductive toxicity	No information is available.
Acute Toxicity:	
7440-50-8	Oral (rat) LD50:5800 mg/kg.
Others	No information is available.

Section 12. Ecological Information
1. When properly used and disposed, the battery does not present environmental hazard. 2. The battery does not contain mercury, cadmium, or lead. 3. Do not let internal components enter marine environment. Avoid releasing to waterways, wastewater or ground water.

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Section 13. Disposal Considerations

1. Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in Federal, State or Local requirements of hazardous waste treatment and hazardous waste transportation.
2. The battery should be completely discharged prior to disposal and/or the terminals taped or capped to prevent short circuit. When completely discharged it is not considered hazardous.
3. The battery contains recyclable materials. Recycling options available in your local area should be considered when disposing of this product, through licensed waste carrier.

Section 14. Transport Information

This report applies to by sea, by air and by land; The lithium ion or lithium polymer cells or batteries must be of a design type proved to meet the testing requirements of the Manual of test and criteria, Part III, subsection 38.3;

The lithium ion or lithium polymer cells and batteries according to PACKING INSTRUCTION Section II of PI 965-967 of the IATA Dangerous Goods regulations 61st Edition may be transported.

Li-Polymer Battery was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;

Cell and battery offered for transport must be packed in inner packaging that completely encloses the cell or battery; to provide protection from damage or compression to the batteries, the inner packaging's must be placed in a strong rigid outer packaging;

The packaging shall be adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design shall be chosen so as to prevent the development of unintentional electrical conduction, corrosion of the terminals and ingress of moisture. The package must be handled with care and that a flammability hazard exists if the package is damaged;

Each package must be labeled with a Lithium Battery handling label or in addition to the Class 9 hazard label. With regard to transport, the following regulations are cited and considered:

- The International Civil Aviation Organization (ICAO) Technical Instructions.
- The International Air transport Association (IATA) Dangerous Goods Regulations.

UN number of lithium battery: UN3480 or UN3481;

UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries contained in equipment or Lithium ion batteries packed with equipment;

UN Classification (Transport hazard class): Non dangerous;

Marine pollutant(Y/N): N;

- The International Maritime Dangerous Goods (IMDG) Code.

For lithium-ion batteries by sea, provided that packaging is strong and prevent the products from short-circuit.

UN number of lithium battery: UN3480 or UN3481;

UN Proper shipping name/Description (technical name): Lithium ion batteries or Lithium ion batteries

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contained in equipment or Lithium ion batteries packed with equipment;

UN Classification (Transport hazard class): Non dangerous;

Marine pollutant(Y/N): Y;

Special Provision: International maritime dangerous goods code (IMDG) 188, 230, 310, 348, 957;

- The US Hazardous Materials Regulation (HMR) pursuant to a final rule issued by RSPA.
- The Office of Hazardous Materials Safety within the US Department of Transportations' (DOT) Research and Special Programs Administration (RSPA).

Section 15. Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200): Non-hazardous.

China: This MSDS in accordance with GB/T18287-2013 General specification of lithium-ion cells and batteries for mobile phone.

USA: This MSDS meets/exceeds OSHA requirements.

International: This MSDS conforms to European Union (EU), the International Standards Organization (ISO) and the International Labour Organization (ILO).

UL certification: The Future Power batteries are registered by Underwriters Laboratories, Northbrook.

PS.1. When large amount of batteries are transported by ship, vehicle and railroad, avoid high temperature and dew condensation.

PS.2. Avoid transportation which may cause damage of package.

Section 16. Other Information

The information above is believed to be accurate and represents the best information currently available to us. however, CTC makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. users should make their own investigations to determine the suitability of the information for their particular purposes. although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. this material safety data sheet provides guidelines for the safe handling and use of this product; it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export controlled information.

===== End of report =====

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