MATERIAL SAFETY DATA SHEET

Model: All polymer lithium ion batteries

Approved By	Checkup
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CTE ENERGY CO.Ltd

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1. PRODUCT & COMPANY INDENTIFICATION

PRODUCT NAME
Polymer Lithium Ion rechargeable batteries
MODEL/SIZE
SR903852 3.7V2000mAH lithium polymer battery with PCM
EQUIVALENT LITHIUM CONTENT: ≤20Wh
MANUFACTURER
Name: CTE Energy Co., Ltd（东莞市西特新能源科技有限公司）
Address: Building 1,Yilida industrial Zone,Meilin,,Dalingshan,Dongguan（东莞市大岭山镇梅林村亿利达工业园创华大楼第一栋）
）
Telephone: 86-769-88968611

2. COMPOSITION/INFORMATION ON INGREDIENTS

	CAS RN	Approximate of total weight (%)
Lithium Cobalt Oxide (LiCoO2)	12190-79-3	38.1%
Carbon (Graphite):	7440-11-0	21.4%
Electrolyte (**LiPF6/EC/DMC/EMC**)	21324-40-3 /96-49-1 /616-38-6 / 623-53-0	14.1%
Aluminum	7429-90-5	3.8%
Copper	7440-50-8	7.7%
Hexafluoropropylene-Vinylidine-Fluoride Copolymer	9011-17-0	3.2%
PP/PE/PET		1.9%

3. HAZARDS/HEALTH IDENTIFICATION

Emergency Overview (including **Signs** and **Symptoms, Route(s) of Entry,** etc.)
Intact batteries present no specific hazards.
Acute Health Hazards (e.g., Inhalation, Eye Contact, Skin Contact, Ingestion, etc.)**:**
Burning batteries: AVOID inhalation of toxic fumes. Burning batteries emit toxic fumes, which are irritating to the lungs.
Leaking batteries: AVOID exposure to leaking electrolyte, it can cause severe irritation and/or damage to the skin, mucous membrane or eyes.
Chronic Health Effects (e.g., Carcinogenicity, Teratology, Reproduction, Mutagenicity, etc.)**:**
Cobalt: Suspected human carcinogenic agent.
Medical Conditions Generally Aggravated by Exposure: None.

4. FIRST-AID MEASURES

Inhalation: If battery is burning, leave the area immediately. If exposed to fumes, seek medical attention promptly.
Skin Contact: If battery electrolyte leaks on to the skin flush the affected area for at least 15 minutes with clean water. DO NOT attempt to neutralize. Seek medical attention promptly.

5. FIRE-FIGHTING AND EXPLOSION HAZARD DATA

Flammable Properties: N/A
Flashpoint: Method:
Autoignition Temperature:

Flammable Limits: N/A
Lower flammable limit: Upper flammable limit:
Hazardous Combustion Products: Burning batteries may emit acrid smoke irritating fumes, and toxic fumes of fluoride.
Extinguishing Media: Carbon dioxide (CO_2) or dry chemical fire extinguisher, 10-B: C.
Fire Fighting Instructions:
Personnel: Fight the fire in a defensive mode, while exiting the area. When using a CO_2 fire extinguisher, DO NOT re-enter the area until it has been thoroughly ventilated (i.e., purged) of the CO_2 extinguishing agent.
Firefighters: Use a self-contained breathing apparatus (SCBA).

6. ACCIDENTAL RELEASE MEASURES

Small Spill: If batteries show signs of leaking, AVOID skin or eye contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean-up. Coordinate disposition with the Installation Environmental Office.
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7. HANDLING&STORAGE

Handling: Recharge batteries IAW methods specified in applicable technical manuals.
DO NOT:

- Overcharge this battery.
- Abuse, mutilate or short circuit the battery.

Storage: Gain approval for storage areas from the Installation Fire Department. Store batteries in a cool
(i.e., <130°F), dry and well ventilated area.
DO NOT:

- Store batteries in direct sunlight or under hot conditions.
- Smoke and keep batteries away from open flame or heat.
- Store batteries in the same stacks with hazardous materials.
- Store batteries in office areas, or other areas where personnel congregate.

Work/Hygienic Practices: Thoroughly wash hands after cleaning-up a battery spill (i.e., leaking or venting batteries). NO eating, drinking or smoking in battery storage areas.

8. PERSONAL PROTECTION

Personal protective equipment:
Respiration protection: Self-contained breathing apparatus;
Eye protection: Safety glasses
Skin protection: Rubber gloves;

9. PHYSICAL & CHEMICAL PROPERTIES

Boiling Point @ 760 mm Hg (℃): NA
Vapor Pressure (mm Hg @ 25℃): NA
Vapor Density (Air = 1): NA
Density (grams/cc): NA
Percent Volatile by Volume (%): NA
Evaporation Rate (Butyl Acetate = 1): NA
Physical State: NA
Solubility in Water (% by Weight): NA
pH: NA
Appearance and Odor: geometric solid object

10. STABILITY &REACTIVITY

Stable or unstable: Stable

Incompatibility (Materials to avoid) : NA
Hazardous decomposition products: NA
Decomposition temperature (0 ℉): NA
Hazardous polymerization: Will Not Occur
Condition to Avoid: Avoid electrical shorting
.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: None

12. ECOLOGICAL INFORMATION

NA

13. DISPOSAL CONSIDERATION

CTE Polymer Lithium Ion rechargeable cells and batteries contain no toxic metals, only naturally occurring trace elements. Lithium Cells and batteries are exempted from hazardous waste standards under the Universal Waste Regulations, therefore, it is advisable to consult with local state or federal authorities as disposal regulations may vary dependent on location.
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14. TRANSPORT INFORMATION

For the international transport of lithium batteries, they must comply with these regulations: the International Maritime Dangerous Goods (IMDG) Code by International Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by International Civil Aviation Organization (ICAO). These regulations are based on the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria. Lithium batteries which meet the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group II hazardous goods. As the published of the UN Recommendations on the Transport of Dangerous Goods, all these regulations have added some new contents to regulate the transport of lithium ion batteries. And they should be complied since 1 January 2009.

1. For lithium ion batteries, UN ID number is 3480. For lithium ion batteries contained in equipment or lithium ion Batteries packed with equipment, UN ID number is 3481.
2. The consignment should be fully described by proper shipping name and packed, marked and in proper condition for carriage by air. The consignment is not classified as dangerous under the current edition of the IATA 61th.
Effective, Dangerous goods regulation and all applicable carrier and government regulations.
3. For transported by air, Lithium-ion Cells/Batteries shipped as “Not Restricted” Cargo: Must comply with section II of P1965-P1967 accordingly; For cells, the Watt-hour rating should not be more than 20Wh; For batteries, the Watt-hour rating should not be more than 100Wh. Watt- hour rating must be marked on the outside of the battery case (marked by manufacturer). (Except those manufactured before 1 January 2010, which may be transported without this marking until 31 December 2013).
4. Each consignment must be accompanied with a document such as an air waybill with an indication. For those Lithium ion cells/ batteries contained in equipment, the equipment must be equipped

with an effective means of preventing accidental activation. The telephone number for additional information for CTE cells is +86-769-88968611.
5. Quantity per package shall not exceed 10kg.
6. Each package must be capable of withstanding a 1.2m drop test in any orientation without damage of cells or batteries contained therein.
7. Lithium batteries which meet the requirements of A154 could be transported by air, and the batteries manufactured by CTE meet these requirements.(A154 Lithium batteries identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport.)
8. Cells and batteries must be 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.
9. Comply with SP188 of IMDG

15. REGULATORY INFORMATION
None

16. OTHER INFORMATION
The information contained herein is furnished without warranty of any kind. Users should consider this data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.