Material Safety Data Sheet

Name of Products: LITHIUM BATTERY

Applicant: Ultramax Batteries Limited

Factory： Ultramax Batteries Limited

Tester 刘秀丽	**Reviewer** 文翁纯	**Approver** 吴娟
Project Engineer	**Senior Engineer**	**Chief Engineer**

GUANGDONG UTL CO., LTD.

TEST REPORT

1. Identification of the product and supplier	
Name of goods	LITHIUM BATTERY
Type/Model	12V 36Ah
Rating	12.8V, 36Ah, 460.8Wh
Commissioned by	Ultramax Batteries Limited
Commissioner address	Watkins House,Pegamoid Rd.,London N18 2NG
Manufacturer's name	Ultramax Batteries Limited
Manufacturer address	Watkins House,Pegamoid Rd.,London N18 2NG
Inspection according to	UN "Recommendations on the TRANSPORT OF DANGEROUS GOODS"
Emergency telephone call	+44-02088038899
Receiving date: 2022-02-15	Date of issue: 2022-03-07

2. Composition Information

Chemical Composition	Chemical Formula	Weight(%)	CAS Number
Ethylene Carbonate	$C_3H_4O_3$	5	96-49-1
Dimethyl Carbonate	$C_3H_6O_3$	5	616-38-6
Lithium Hexafluorophosphate	$LiPF_6$	15	21324-40-3
Lithium Metal	Li	3	7439-93-2
Lithium Iron Phosphate	$LiFePO_4$	40	15365-14-7
Copper	Cu	10	7440-50-8
Graphite	$C_{24}X_{12}$	8	7782-42-5
Polyvinylidene Fluoride (PVDF)	$(CH_2\text{-}CF_2)n$	6	24937-79-9
Aluminium	Al	5	7429-90-5
Nickel	Ni	3	7440-02-0

3. Hazards Identification

Explosive risk	This article does not belong to the explosion dangerous goods
Flammable risk	This article does not belong to the flammable material
Oxidation risk	This article does not belong to the oxidation of dangerous goods
Toxic risk	This article does not belong to the toxic dangerous goods
Radioactive risk	This article does not belong to the radiation of dangerous goods
Mordant risk	This article does not belong to the corrosion of dangerous goods
other risk	Watt hour rate460.8Wh, which belong to the Class 9 of dangerous goods.

4. First aid measures

Eye
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin
Remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Get medical aid.

Inhalation
Remove from exposure and move to fresh air immediately. Use oxygen if available.

Ingestion
Give at least 2 glasses of milk or water. Induce vomiting unless patient is unconscious. Call a physician.

5. Fire-fighting measures

Flash Point: N/A**.**

Auto-Ignition Temperature: N/A**.**

Extinguishing Media: Water, CO2**.**

Special Fire-Fighting Procedures: Self-contained breathing apparatus.

Unusual Fire and Explosion Hazards:
Cell may vent when subjected to excessive heat-exposing battery contents.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

6. Accidental release measures

Steps to be Taken in case Material is Released or Spilled

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. Wipe it up with a cloth, and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.

Waste Disposal Method

It is recommended to discharge the battery to the end, to use up the metal lithium inside the battery, and to bury the discharged battery in soil.

7. Handling and storage

The battery should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

Do not short circuit terminals, or over charge the battery, forced over-discharge, throw to fire.

Do not crush or puncture the battery, or immerse in liquids.

Precautions to be taken in handling and storing

Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Storage at high temperatures should be avoided. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.

Other Precautions

The battery may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures.

Do not short or install with incorrect polarity.

8. Exposure controls/personal protection

Respiratory Protection
In case of battery venting, provide as much ventilation as possible. Avoid confined areas with venting cell cores. Respiratory Protection is not necessary under conditions of normal use.

Ventilation
Not necessary under conditions of normal use.

Protective Gloves
Not necessary under conditions of normal use.

Other Protective Clothing or Equipment
Not necessary under conditions of normal use.

Personal Protection is recommended for venting battery
Respiratory Protection, Protective Gloves, Protective Clothing and safety glass with side shields.

9. Physical and chemical properties

Appearance: Approximate Cuboid

Ref. No.: PNS220228201 06001

Odour: If leaking, smells of medical ether.

Odor Threshold: Not applicable.

pH: Not applicable.

Melting Point/freezing point：Not applicable.

Initial boiling point and Boiling range: Not applicable.

Flash Point: Not applicable.

Evaporation rate: Not applicable.

Flammability (solid, gas): Not applicable.

Upper/lower flammability or explosive limits: Not applicable.

Vapor Pressure: Not applicable.

Vapor Density: Not applicable.

Relative density: Not applicable.

Solubility (water): Not applicable.

Solubility (other): Not applicable.

n-octanol/water partition coefficient：Not applicable.

Auto-ignition temperature: Not applicable.

Decomposition temperature: Not applicable.

10. Stability and reactivity

Stability: Product is stable under conditions described in Section 7.

Conditions to avoid: Heat above 70°C or incinerate. Deform. Mutilate. Crush. Disassemble. Overcharge. Short circuit. Expose over a long period to humid conditions.

Materials to avoid: Oxidising agents, alkalis, water.

Hazardous Decomposition Products: Toxic Fumes, and may form peroxides.

Hazardous Polymerization: N/A.

If leaked, forbidden to contact with strong oxidizers, mineral acids, strong alkalies, halogenated hydrocarbons.

11. Toxicological information

Signs & symptoms: None, unless battery ruptures.

In the event of exposure to internal contents, vapour fumes may be very irritating to the eyes and skin.

Inhalation: Lung irritant.

Skin contact: Skin irritant

Eye contact: Eye irritant

Ingestion: Poisoning if swallowed

Medical conditions generally aggravated by exposure: In the event of exposure to internal contents, moderate to server irritation, burning and dryness of the skin may occur, Target organs nerves, liver and kidneys.

12. Ecological information

Mammalian effects: None known at present.

Eco-toxicity: None known at present.

Bioaccumulation potential: Slowly Bio-degradable.

Environmental fate: None known environmental hazards at present.

13. Disposal consideration

Do not incinerate, or subject cells to temperature in excess of 70°C, Such abuse can result in loss of seal leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

14. Transport information

Label for conveyance: the Class 9—Lithium Battery hazard label, the Cargo aircraft Only Label

UN Number: UN3480 or UN3481

Packing Group: Group II

EmS No: F-A, S-I

Marine pollutant: No

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises： No further information

Proper Shipping name:. 1) Lithium ion batteries; 2) Lithium ion batteries packed with equipment; 3) Lithium ion batteries contained in equipment.

Hazard Classification: The goods shall be complied with the requirements of Section IA of Packing Instructions 965 of 63rd DGR Manual of IATA (2022 Edition) and IMDG CODE (Amdt. 40-20) 2020 Edition, including the passing of the UN38.3 test.

Label for conveyance: the Class 9—Miscellaneous Dangerous Goods

UN Number: UN3171

Packing Group: N/A.

EmS No: F-A, S-I

Marine pollutant: No

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises： No further information

Proper Shipping name: Battery-powered vehicle

Hazard Classification: The goods shall be complied with the requirements of Packing Instructions 952 of 63rd DGR Manual of IATA (2022 Edition) and IMDG CODE (Amdt. 40-20) 2020 Edition, including the passing of the UN38.3 test.

15. Regulation information

Law information

《Dangerous Goods Regulations》

《Recommendations on the Transport of Dangerous Goods Model Regulations》

《International Maritime Dangerous Goods》

《Technical Instructions for the Safe Transport of Dangerous Goods》

《Classification and code of dangerous goods》

《Occupational Safety and Health Act》(OSHA)

《Toxic Substance Control Act》(TSCA)

《Consumer Product Safety Act》(CPSA)

《Federal Environmental Pollution Control Act》(FEPCA)

《The Oil Pollution Act》(OPA)

《Superfund Amendments and Reauthorization Act TitleIII (302/311/312/313)》(SARA)

《Resource Conservation and Recovery Act》(RCRA)

《Safety Drinking Water Act》(CWA)

《California Proposition 65》

《Code of Federal Regulations》(CFR)

In accordance with all Federal, State and local laws.

16. Other information

This file is only effective to the batteries (12V 36Ah) provided by Ultramax Batteries Limited which manufactured by UltraMax Batteries Ltd. The commissioner provides the composition information of batteries, and promises its integrity and accuracy. Users should read this file carefully, and use the batteries in correct method. GUANGDONG UTL CO., LTD. (UTL) doesn't assume responsibility for any damage or loss because of misuse of batteries.

Figure 1 Overall view I of battery

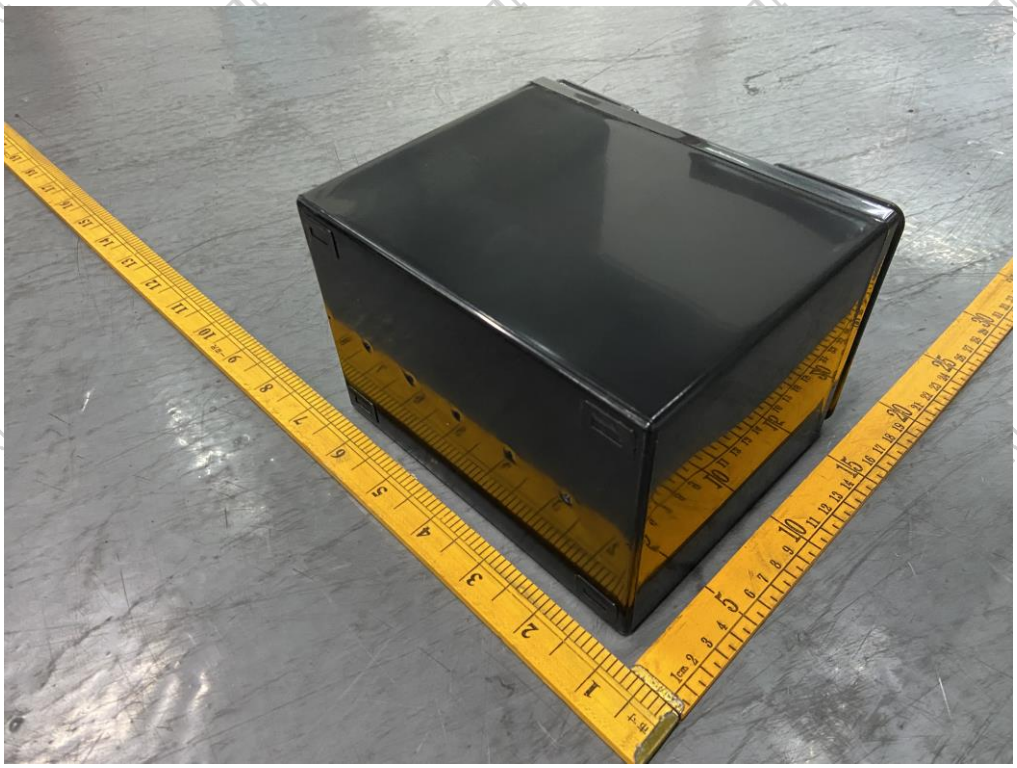

Figure 2 Overall view II of battery

Photos

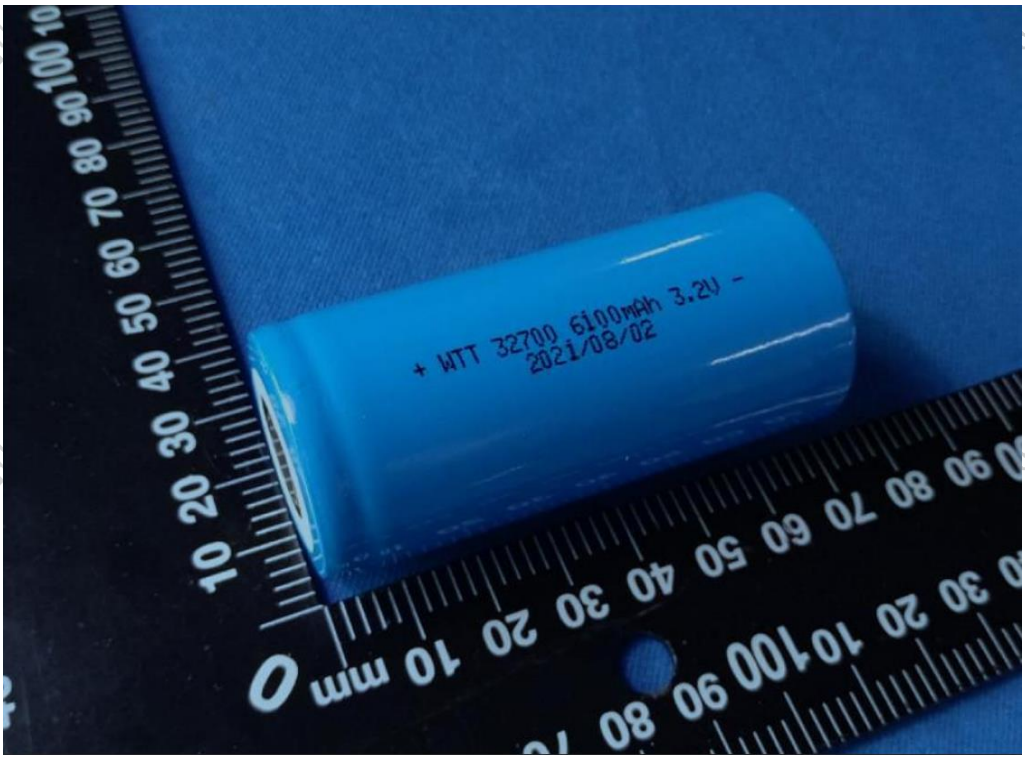

Figure 3 Overall view of cell

Figure 4 Battery Label

Important

1. Nobody is allowed to photocopy or partly photocopy this test report without written permission of UTL.
2. The test report is invalid without the signatures of Approver, Reviewer and Tester.
3. The test report is invalid if altered.
4. Objections to the test report must be submitted to UTL within 15 days.
5. Throughout this report a point is used as the decimal separator.
6. The test report is valid for the tested samples only.
7. The test report does not grant applicant the use of UTL name, trademark or label.
8. UTL's liability under no circumstance will exceed the testing fee received from applicant for test conducted hereof this testing report.
9. The test data and results do not have social proof function.

****** **End of Test Report** ******