Shenzhen Utility Power Source Co.,Ltd.

Material Safety Data Sheet

1. PRODUCT & COMPANY INDENTIFICATION

Product Name	Li-ion rechargeable battery(ies)	Model	sc225
Manufacturer	**Shenzhen Utility Power Source Co., Ltd**		
Address	Hi-tech Park, GuanGuang Road, GuangmingTown, BaoanDistrict, Shenzhen, China		
Telephone	+86-755-29891895/29891962		
Issued by	**Shenzhen Utility Power Source Co., Ltd CHENYU**		
Specification	3.7V/500mAh/1.85Wh		

2. COMPOSITION/INFORMATION ON INGREDIENTS

Composition	Molecular formula	CAS No.	Weight（%）
Lithium Cobalt Oxide	LiCoO2	12190-79-3	30-35%
Carbon	C	1333-86-4	20-25%
Electrolyte	$LiPF_6$	21324-40-3	1-2%
PVDF	$(CH_2\text{-}CF_2)n$	24937-79-9	1-2%
Acetylene Black	C	1333-86-4	0.5-1%
SBR	$(C_8H_8.C_4H_6)x$	9003-55-8	0.2-0.8%
EC	$C_3H_3O_4$	96-49-1	5-10%
DMC	$C_3H_6O_3$	616-38-6	5-10%
Aluminum	Al	7429-90-5	10-15%
Copper	Cu	7440-50-8	2-5%
Dissepiment	/	/	2-5%
Others	/	/	2-5%

3. HAZARDS/HEALTH IDENTIFICATION

Health Hazards(Acute and Chronic):
These chemicals are contained in a sealed can. Risk of exposure occurs only if the battery is mechanically or electrolyte and extruded lithium with skin and eyes should be avoided.
Sign/Symptoms of Exposure:
A shorted lithium battery can cause thermal and chemical burns upon contact with the skin.
May be a reproductive hazard.

4. FIR ST-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 (CO2) 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 CO2 fire extinguisher, DO NOT re-enter the area until it has been thoroughly ventilated (i.e., purged) of the CO2 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.

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 (°C): NA

Vapor Pressure (mm Hg @ 25°C): 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°F): NA
Hazardous polymerization: Will Not Occur
Condition to Avoid: Avoid electrical shorting.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: None
Irritation : Irritating to eyes and skin.
Mutagenicity : Not specified.
Chronic toxicity: Not specified.

12. ECOLOGICAL INFORMATION

In case of the worn-out battery was disposed in land, the battery case may be corroded, and leak electrolyte.
But, we have no ecological information.
Heavy metal in battery: Mercury(Hg) and Cadmium(Cd) are neither contained nor used in battery.

13. DISPOSAL CONSIDERATION

UTL 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.

14. TRANSPORT INFORMATION

Even classified as lithium ion batteries UN3480 or UN3481(Contained in Equipment or Packed with Equipment), the product is handled as Non-Dangerous Goods by meeting the UN Recommendations on the Transportation of Dangerous Goods Model Regulations Special Provision SP188. (1)
(a) For a lithium-ion cell, the Watt-hour rating is not more than 20 Wh;

(b) For a lithium-ion battery, the Watt-hour rating is not more than100 Wh.
Lithium ion batteries subject to this provision shall be marked with the Watt-hour rating on the outside case, except those manufactured before 1 January 2009 ;

(c) Each cell or battery is of the type proved to meet the requirements of each test in the UN Manual of Tests and Criteria, PartV, sub-section 38.3 ;
(d) Cells and batteries, except when installed in equipment, shall be packed in inner packagings that completely enclose the cell or battery. Cells and batteries shall be protected so as to prevent short circuits.
This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit. The inner packagings shall be packed in strong outer packagings ;
(e) Cells and batteries when installed in equipment shall be protected from damage and short circuit, and the equipment shall be equipped with an effective means of preventing accidental activation. When batteries are installed in equipment, the equipment shall be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained;
(f) Except for packages containing button cell batteries installed in equipment (including circuit boards), or no more than four cells installed in equipment or no more than two batteries installed in equipment, each package shall be marked with the following:
(i) an indication that the package contain “lithium ion" cells or batteries, as appropriate;
(ii) an indication that the package shall be handled with care and that a flammability hazard exists if the package is damaged;
(iii) an indication that special procedures shall be followed in the event the package is damaged, to include inspection and repacking if necessary; and
(iv) a telephone number for additional information;
(g) Each consignment of one or more packages marked in accordance with paragraph (f) shall be accompanied with a document including the following:
(i) an indication that the package contains “lithium ion" cells or batteries, as appropriate;
(ii) an indication that the package shall be handled with care and that a flammability hazard exists if the package is damaged;
(iii) an indication that special procedures shall be followed in the event the package is damaged, to include inspection and repacking if necessary; and
(iv) a telephone number for additional information;
(h) Except when batteries are installed in equipment, each package shall be capable of withstanding a 1.2 m drop test in any orientation without damage to cells or batteries contained therein, without shifting of the contents so as to allow battery to battery (or cell to cell) contact and without release of contents: and
(i) Except when batteries are contained in or packed with equipment, packages shall not exceed 30 kg gross mass for marine transportation. (not exceed10kg for air transportation)

For marine transportation the product is handled as Non-Dangerous Goods by meeting the IMO International Maritime Dangerous Goods (IMDG Code) 2016 Edition (Amendment 36-12) SP188 (Same as UN Special Provision SP188 above).
(3)For air transportation the product is handled as Non-Dangerous Goods by meeting the IATA Dangerous Goods Regulations 57 Edition Effective 1 January 2016 Packing Instruction 965-967 General Requirement and Section Ⅱ (Excepted) and UN Special Provision SP188 above.(2)
(j) Lithium ion batteries identified by 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 (e.g. those being returned to the manufacturer for safety reasons).
(k) Each package contains more than four cells or more than two batteries must be labeled with a lithium battery

handling label.
* The width 120mm X length 110mm sized lithium battery handling label must be labeled onto the side of a package without bending it.

* The width 74mm X length 105mm sized lithium battery handling label may use for smaller packages.
(l) The words “Lithium ion batteries”, “not restricted” and “PI number” must be included in the Additional Handling Information on the air waybill, when an air waybill is used.
(PI number Cell and Battery : PI965, Packed with Equipment : PI966, Contained in Equipment : PI967)
(m) Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.
(n) Except when batteries are installed in or packed with equipment, packages shall not exceed10kg gross mass.
The Lithium-Ion cells or batteries as stated in Appendix are made in compliance to the requirements stated in the latest edition of the IATA Dangerous Goods Regulations Packing Instruction 965 General requirements and Section Ⅱ, such that they can be transported as a NOT RESTRICTED (non-hazardous/non-dangerous) goods.
However, if those lithium-ion cells or batteries are pack with or contained in an equipment, then it is the responsibility of the shipper to ensure that the consignment are packed in compliance to the latest edition of the IATA Dangerous Goods Regulations General requirements and Section Ⅱ Packing Instruction 966 or 967 in order for that consignment to be declared as NOT RESTRICTED (non-hazardous/non-Dangerous).
During the transportation of a large amount of batteries by ship, trailer or railway, do not leave them in the places of high temperatures and do not allow them to be exposed to condensation.
During the transportation do not allow packages to be fallen down or damaged.

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.
Nature and Quantity of Goods” box of MAWB to show: “Lithium Battery, Not Restricted as per Special Provision A45”.
Declaration remark in the “Handling information” box of MAWB to show:
- Shipment contains no item listed under IATA DGR Special Provision A155 and it meets all the requirements of SP A45 including the passing of the UN 38.3 tests”.

End.