



Material Safety Data Sheet

Report No. : G18-B816-1

Sample Name: Cylinder Lithium Ion Battery

Model/Type : SF18650NR-22

Client: Xi'an SAFTY Energy Technology Co. Ltd.

CESI (Guangzhou) Standards & Testing Institute Co., Ltd.



1.Chemical Product & Company Information

Product Name	Cylinder Lithium Ion Battery	
Model/Type	SF18650NR-22, 3.7V, 2200mAh, 8.14Wh	
Client	Xi' an SAFTY Energy Technology Co. Ltd.	
Client Address	NO.11, Jingqin Road East, Jing-Wei New City, Xi' an Economic & Technological Development Zone Xi' an, China.	
Manufacturer	Xi' an SAFTY Energy Technology Co. Ltd.	
Manufacturer Address	NO.11, Jingqin Road East, Jing-Wei New City, Xi' an Economic & Technological Development Zone Xi' an, China.	
Emergency Telephone	029-86962203	
Tested by	<i>Liaoxia Lei</i>	Date: <i>2019.04.23</i>
Checked by	<i>Xiong Xu</i>	Date: <i>2019.4.23</i>
Approved by	<i>Juan Ying Huang</i>	Date: <i>2019.4.23</i>

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2. Composition/Information on Ingredients		
Chemical Formula	CAS No.	in % by weight
Cobalt lithium manganese nickel oxide	182442-95-1	36.8%
Graphite	7782-42-5	18.3%
Steel shell(AL_2O_3)	1344-28-1	17.1%
Electrolyte(proprietary)	21324-403/96-4	12.0%
Copper	7440-50-8	7.1%
Aluminium	7429-90-5	4.9%

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
Mordant risk	This article does not belong to the corrosion 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: Cylinder

Odour: If leaking, smells of medical ether.

pH: Not applicable as supplied.

Flash Point: Not applicable unless individual components exposed.

Flammability: Not applicable unless individual components exposed.

Relative density: Not applicable unless individual components exposed.

Solubility (water): Not applicable unless individual components exposed.

Solubility (other): Not applicable unless individual components exposed.

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 Considerations

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: Polymer Li-Ion Battery.

Certification for Safe Transport of Chemical Goods: /

Packaging Group: II

Marine pollutant: No

Hazard Classification: The goods shall be complied with the requirements of Packing Instructions 965/966/967 of 60th DGR Manual of IATA (2019 Edition) or special provision 188 of IMDG CODE (Amdt. 38-16) Edition, including the passing of the UN38.3 test.

15. Regulatory 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 Title III (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 provided by Xi ' an SAFTY Energy Technology Co. 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. CESI (Guangzhou) Standards & Testing Institute Co., Ltd doesn ' t assume responsibility for any damage or loss because of misuse of batteries.

NOTES

1. The test report shall not be reproduced except in full without the written approval of the Laboratory.
2. The results presented in this report is only valid to the samples.

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