SDS

SAFETY DATA SHEET

Prepared For	:	**Shenzhen Fenergy Technology Co., Ltd.** **8/F, King Dragon Temple Industrial Building A9, Fuyong Town, Bao'an District, Shenzhen, China**
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Safety Data Sheet

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Section 1-Chemical Product and Company Identification

Product Name： Li-Polymer Rechargeable Battery

Other means of identification

Synonyms： None

Model: 8575108PL

Rating of Battery: 3.7V 10000mAh 37Wh **Weight:** 162g

Manufacture: Shenzhen Fenergy Technology Co., Ltd.

Address: 8/F, King Dragon Temple Industrial Building A9, Fuyong Town, Bao'an District, Shenzhen, China

Post Code: 518103 **Fax No:** 0755-33936291 **Emergency Telephone:** 0755-33936290

Section 2- Hazards Identification

（a） Classification

This chemical is considered hazardous by the **2012 OSHA** Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an SDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

(b) GHS Label elements, including precautionary statements

Emergency Overview

Signal word **Danger**

Hazard Statements

Causes skin irritation
Causes serious eye damage
Suspected of causing cancer
Causes damage to organs through prolonged or repeated exposure

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This product is an article which contains a chemical substance. Safety information is given for exposure to the article as sold. Intended use of the product should not result in exposure to the chemical substance. This is a battery. In case of rupture: the above hazards exist.

Appearance No information available Physical State Solid Odor No information available

Precautionary Statements – Prevention

Wash face, hands and any exposed skin thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection

Do not breathe dust/fume/gas/mist/vapors/spray

Do not eat, drink or smoke when using this product

Precautionary Statements – Response

Specific treatment (see supplemental first aid instructions on this label)

Get medical advice/attention if you feel unwell

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician

Skin

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

Precautionary Statements – Storage

Store locked up

Precautionary Statements – Disposal

Dispose of contents/container to an approved waste disposal plant

© Hazards not otherwise classified (HNOC)

No information available.

(d) Unknown Toxicity

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15% of the mixture consists of ingredient(s) of unknown toxicity.

(e) Other information

No information available.

(f) Interactions with Other Chemicals

No information available.

Section 3- Composition/Information on Ingredient

*The exact percentage (concentration) of composition has been withheld as a trade secret.

Chemical Name	Molecular formula	CAS No.	Weight (%)
Lithium cobalt oxide	$LiCoO_2$	12190-79-3	37.82
PVDF	$C_2H_2F_2$	24937-79-9	1.46
Aluminum	Al	7429-90-5	9.03
Graphite	C	7782-42-5	16.48
Styrene-butadiene rubber	$C_{12}H_{14}$	9003-55-8	0.39
carboxymethyl cellulose	$C_8H_{16}O_8$	9000-11-7	0.31
Copper	Cu	7440-50-8	9.74
Nickel	Ni	7440-02-0	1.08
lithium hexafluorophosphate	F_6LiP	21324-40-3	18.56
Poly(ethylene)	$(C_2H_4)n$	9002-88-4	3.03
nylon 12	$(C_{12}H_{23}NO)mult$	24937-16-4	0.8
Polypropylene	$(C_3H_6)n$	9003-07-0	1.3

Section 4- First Aid Measures

The battery is not hazard with eye and skin contact under normal circumstance. In case of the enclosure is damaged, the battery can not be used and touched. It is safety except that the battery is damaged by fire or rupture. The leakage of internal hazardous substance and formation of hazardous substance would occur, take the following measures if contact with the battery.

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Skin touch: Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Eyes touch: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Seek immediate medical attention/advice**.**

Inhalation: Remove to fresh air. Get medical attention immediately if symptoms occur.

Ingestion: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person.DoNOT induce vomiting. Call a physician.

Self-protection of the first aider: Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Information for doctor

Most important symptoms and effects, both acute and delayed: no further relevant information available.

Indication of any immediate medical attention and special treatment needed: No further relevant information available

Section 5- Fire Fighting Measures

(a) Extinguishing media

Suitable extinguishing media: Use foam, dry powder or dry sand, CO_2 as appropriate.

Unsuitable extinguishing media: No information available.

(b) Special hazards arising from the chemical

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO_2, Metal oxides, Irritating fumes.

(c) Special protective equipment and precautions for fire-fighters

Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filter mask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish

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extinguishment.

Section 6- Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

If the battery is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area and allow the vapors to dissipate. Avoid skin and eyes contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerated. If leakage of the battery happens, liquid could be absorbed wit sand, earth or other inert substance and contaminated area should be ventilated meantime.

Environment precautions:

Do not allow product to reach sewage system or any water source.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up:

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

Section 7- Handling and Storage

Precautions for safe handling

Handling In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up.Keep out of the reach of children.

Incompatible Products Strong acids. Strong oxidizing agents. Strong bases.

Section 8- Exposure Controls, Personal Protection

(a)Control parameters

Exposure Guidelines

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Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lithium Cobalt Oxide ($CoLiO_2$)	TWA: 0.02 mg/m³	-	
Graphite 7782-42-5	TWA: 2 mg/m³ respirable fraction all forms except graphite fibers	TWA: 15 mg/m³ total dust synthetic TWA: 5 mg/m³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m³ respirable dust natural (vacated) TWA: 10 mg/m³ total dust synthetic (vacated) TWA: 5 mg/m³ respirable fraction synthetic TWA: 15 mppcf	IDLH: 1250 mg/m³ TWA: 2.5 mg/m³ respirable dust
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m³ F	TWA: 2.5 mg/m³ F TWA: 2.5 mg/m³ dust (vacated) TWA: 2.5 mg/m³	

ACGIH TLV: American Conference of Governmental Industrial Hygienists -Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits Immediately Dangerous to Life or Health

Other Exposure Guidelines: Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962(11th Cir., 1992) See section 15 for national exposure control parameters

(b) Appropriate engineering controls

Engineering Measures: 1.Showers 2.Eyewash stations 3.Ventilation systems

(c) Individual protection measures, such as personal protective equipment

Respiratory protection: No necessary under normal use. In case electrolyte leakage from the battery, protect hand with chemical resistant rubber gloves. If battery is burning, leave the area immediately. In abuse, use NIOSH approved acid gas filter mask or self-contained breathing apparatus.

Hand protection: None under normal use. In case of spilling, use PVC, neoprene or nitrile gloves of 15miles (0.015 inch) or thicker.

Eye/Face protection: None required under normal conditions. Use approved chemical work safety goggles or face shield, if handling a leaking or rupture battery.

Skin and boby protection: No necessary under normal use. Use rubber apron and protective working in case of handling of a rupture battery.

Other protective equipment: Chemical resistance clothing is recommended along with eye wash station and safety shower should be available. Work hygienic practices: Use good chemical hygiene practice. Wash hands after use and before drinking, eating or smoking. Wash hands thoroughly after cleaning-up component spill caused by leaking

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battery. No eating, drinking, or smoking in battery storage area. Launder contaminated cloth before reuse.

Section 9- Physical and Chemical Properties

Physical and Chemical Properties			
Physical state	Solid		
Appearance	No information available	**Odor**	No information available
Color	Silver	**Odor Threshold**	No information available
Property	**Values**	**Remarks Method**	
PH	None known	None known	
Melting / freezing point	None known	None known	
Boiling point / boiling range	None known	None known	
Flash Point	None known	None known	
Evaporation Rate	None known	None known	
Flammability (solid, gas)	None known	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	No data available	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/water	No data available	None known	
Autoignition temperatur	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available	None known	
Oxidizing properties	No data available	None known	
Other Information			
Softening Point	No data available		
VOC Content (%)	No data available		
Particle Size	No data available		

Section 10- Stability and reactivity

Reactivity: No data available.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous rections : None under normal processing.

Conditions to avoid: None known based on information supplied.

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Incompatible materials:Strong acids. Strong oxidizing agents. Strong bases.

Hazardous Decomposition Products: None known based on information supplied.

Section 11- Toxicological information

Information on likely routes of exposure

Product Information: Product does not present an acute toxicity hazard based on known or supplied information.
In case of rupture:

Inhalation: Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact: Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Severely irritating to eyes. May cause irreversible damage to eyes.

Skin contact: Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Prolonged contact may cause redness and irritation.

Ingestion: Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical name	Oral	Dermal LD50	Inhalation LC50
Lithium Cobalt Oxide ($CoLiO_2$)	= 29000 mg/kg (Rat)	> 20 mL/kg (Rabbit)	-

Information on toxicological effects

Symptoms: Erythema (skin redness). May cause redness and tearing of the eyes. May cause blindness. Burning.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization: No information available.

Mutagenic Effects: No information available.

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGI	IAR	NT	OSH
Lithium Cobalt Oxide ($CoLiO_2$) 12190-79-3	A3	Group 2B		X

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X – Present

Reproductive toxicity: No information available.

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STOT- single exposure: No information available.

STOT-repeated exposure: Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).

Chronic Toxicity: Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. Carbon black has been classified by the International Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B) by inhalation.

Target Organ Effects: Respiratory system. Eyes. Skin. Gastrointestinal tract (GI).

Aspiration Hazard: No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)
7,819.00 mg/kg
ATEmix (dermal)
6,300.00 mg/kg (ATE)

Section 12- Ecological Information

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
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Persistence and Degradability
No information available.

BioaccumLCSation

Chemical	Log
Propylene carbonate 108-32-7	0.48

Other adverse effects
No information available.

Section 13- Disposal Considerations

Waste treatment methods

Disposal methods: This material, as supplied, is not a hazardous waste according to Federal regulations (40CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. ConsLult the appropriate state, regional, or local regulations for additional requirements.

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Contaminated Packaging: Dispose of contents/containers in accordance with local regulations.

California Hazardous Waste Codes: 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	Toxic

Section 14 – Transport Information

Note:

The transportation of Li-Polymer Rechargeable Battery and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation
listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision188 of IMO-IMDG Code"

DOT: NOT REGLCSATED

Proper Shipping Name NON-REGLCSATED

Hazard Class N/A

Emergency Response Guide Number 147

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated
Proper Shipping Name: NONREGULATED
Hazard Class N/A

IMDG/IMO Not regulated
Hazard Class N/A
EmS-No. F-A, S-I

RID Not regulated

ADR Not regulated

ADN Not regulated

Section 15- Regulatory information

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

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DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No	Weight-%	SARA 313 - Threshold
Lithium Cobalt Oxide (CoLiO2) - 12190-79-3	12190-79-3	37.82	0.

SARA 311/312 Hazard Categories

Acute Health Hazard	**NO**
Chronic Health Hazard	**NO**
Fire Hazard	**NO**
Sudden release of pressure hazard	**NO**
Reactive Hazard	**NO**

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
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U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide ($CoLiO_2$)	X		X	X	X
Graphite 7782-42-5	X	X	X		

International RegLCSations

Mexico

National occupational exposure limits

Component	Carcinogen Status	Exposure Limits
Graphite 7782-42-5 (10 - 30)		Mexico: TWA= 2 mg/m³

Mexico - Occupational Exposure Limits - Carcinogens

Canada

WHMIS Hazard Class

Non-controlled

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Section 16- Other Information

NFPA

Health Hazards 1 **Flammability** 0 **Instability** 0 **Physical and Chemical Hazards** -

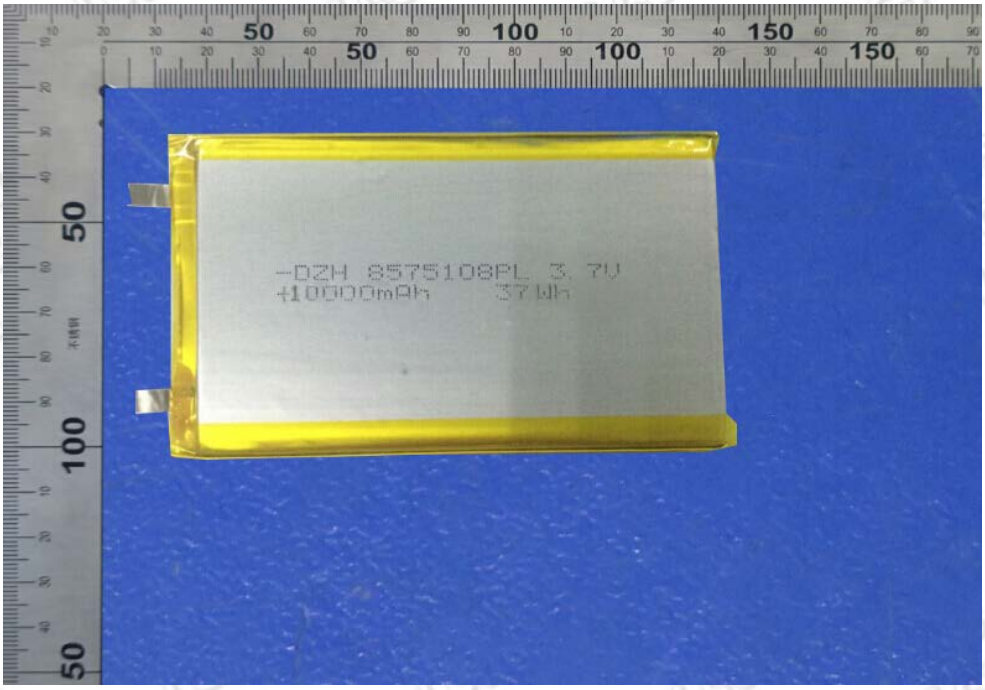
HMIS

Health Hazards 0 **Flammability** 0 **Instability** 0 **Physical Hazard** 0 **Personal Protection** X

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Photos Document



Picture 1