

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

**Product Name** Polymer Lithium Ion Battery

**Other means of identification**

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended Use** Lithium Ion Battery

**Uses advised against** No information available

### Details of the supplier of the safety data sheet

**Supplier Name** Shenzhen Trendwoo Tech. Co., Ltd.

**Supplier Address** Unit G, 12th Floor, Block B, Building 6, Baoneng Tech Park, 1 Qingxiang Road, Longhua Street, Longhua District, Shenzhen, Guangdong, China 518109

**Supplier Phone Number** Phone: +860755-2738 5252  
Contact Phone : +860755-2738 5252

**Supplier Email** [info@trendwoo.com](mailto:info@trendwoo.com)

**Emergency telephone number**

## 2. HAZARDS IDENTIFICATION

### Classification

This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

Carcinogenicity	Category 1A
Serious eye damage/eye irritation	Category 2
Skin corrosion/irritation	Category 1 Sub-category B
Skin sensitization	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

**GHS Label elements, including precautionary statements**

**Emergency Overview**  
**Danger****Signal word****Hazard Statements**

Suspected of causing cancer  
Harmful in contact with skin  
Cause severe skin burns and eye damage  
Cause damage to organs through prolonged or repeated exposure

**Appearance** Blue**Physical State** Solid**Odor** Odorless**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
Specific treatment (see supplemental first aid instructions on this label)

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
Take off contaminated clothing and wash before reuse  
If skin irritation or rash occurs: Get medical advice/attention

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Unknown Toxicity****Other information**

Very toxic to aquatic life with long lasting effects  
Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

**Interactions with Other Chemicals**

No information available

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No.	weight %
Lithium Cobalt Oxide	12190-79-3	30~37
Graphite	7782-42-5	15~20
Carbon black	1333-86-4	0~1
1,1-Difluoroethylene polymer	24937-79-9	0~1
Phosphate(1-), hexafluoro-, lithium	21324-40-3	12~16
Polypropylene	9003-07-0	6~10
Aluminium	7429-90-5	2~5
Copper	7440-50-8	5~10
Iron	7439-89-6	10~15

#### 4. FIRST AID MEASURES

##### First aid measures

##### General Advice

First aid is upon rupture of sealed battery.

##### Eye Contact

If symptoms persist, call a physician. 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

##### Skin Contact

Wash off immediately with soap and plenty of water for at least 15 minutes. In the case of skin irritation or allergic reactions see a physician. May cause an allergic skin reaction.

##### Inhalation

Remove to fresh air. If symptoms persist, call a physician. Get medical attention immediately if symptoms occur.

##### Ingestion

Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

##### Self-protection of the first aider

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

##### Most important symptoms and effects, both acute and delayed

**Most Important Symptoms and Effects** Itching. Coughing and/ or wheezing.

##### Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically. May cause sensitization of susceptible persons.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### **Unsuitable Extinguishing Media**

CAUTION: Use of water spray when fighting fire may be inefficient

#### **Specific Hazards Arising from the Chemical**

Product is or contains a sensitizer. May cause sensitization by skin contact.

<b>Uniform Fire Code</b>	Sensitizer: Solid
	Highly Toxic: Solid

#### **Hazardous Combustion Products**

#### **Explosion Data**

**Sensitivity to Mechanical Impact**      **No.**

**Sensitivity to Static Discharge**      **No.**

#### **Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand,MSHA/NIOSH (approved or equivalent) and full protective gear.

## **6. ACCIDENTAL RELEASE MEASURES**

#### **Personal precautions, protective equipment and emergency procedures**

**Personal Precautions**      Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal. protective equipment as required. Evacuate personnel to safe areas.

**Other Information**      Refer to protective measures listed in Sections 7 and 8.

#### **Environmental Precautions**

**Environmental Precautions**      Refer to protective measures listed in Sections 7 and 8.

#### **Methods and material for containment and cleaning up**

**Methods for Containment**      Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**      In case of rupture: Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

## **7. HANDLING AND STORAGE**

#### **Precautions for safe handling**

**Handling**      In case of rupture. Use personal protection equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray

#### **Conditions for safe storage, including any incompatibilities**

**Storage**      Keep containers tightly closed in a dry, cool and well-ventilated place.

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lithium Cobalt Oxide (CoLiO <sub>2</sub> ) 12190-79-3	TWA: 0.02 mg/m <sup>3</sup>	-	-
Copper 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> fume TWA: 1 mg/m <sup>3</sup> Cu dust and mist	TWA: 0.1 mg/m <sup>3</sup> fume TWA: 1 mg/m <sup>3</sup> dust and mist(vacated) TWA: 0.1 mg/m <sup>3</sup> Cu dust, fume, mist	IDLH: 100 mg/m <sup>3</sup> dust, fume and mist TWA: 1 mg/m <sup>3</sup> dust and mist TWA: 0.1 mg/m <sup>3</sup> fume
Aluminum 7429-90-5	TWA: 1 mg/m <sup>3</sup> respirable fraction	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 5 mg/m <sup>3</sup> Al Aluminum	TWA: 10 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable dust
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m <sup>3</sup> F	TWA: 2.5 mg/m <sup>3</sup> F TWA: 2.5 mg/m <sup>3</sup> dust (vacated) TWA: 2.5 mg/m <sup>3</sup>	
Carbon black 1333-86-4	TWA: 3 mg/m <sup>3</sup> inhalable fraction	TWA: 3.5 mg/m <sup>3</sup> (vacated) TWA: 3.5 mg/m <sup>3</sup>	IDLH: 1750 mg/m <sup>3</sup> TWA: 3.5 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> Carbon black in presence of Polycyclic aromatic hydrocarbons PAH

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH 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

### Appropriate engineering controls **Engineering Measures**

Showers  
Eyewash stations  
Ventilation systems

### Individual protection measures, such as personal protective equipment

#### Eye/Face Protection

If splashes are likely to occur: Wear safety glasses with side shields (or goggles). None required for consumer use.

#### Skin and Body Protection

Wear protective gloves and protective clothing. Long sleeved clothing. Impervious gloves

#### Respiratory Protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical and Chemical Properties

Physical State Solid

Appearance                      Blue                      Odor                      Odorless  
 Color                              No information available      Odor Threshold                      No information available

<u>Property</u>	<u>Values</u>	<u>Remarks/</u>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	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	0.0001	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	0.0001	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  
 Particle Size Distribution

**10. STABILITY AND REACTIVITY****Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Hazardous Polymerization**

Hazardous polymerization does not occur.

**Conditions to avoid**

None known based on information supplied.

**Incompatible materials**

Strong acids. Strong oxidizing agents. Strong bases.

**Hazardous Decomposition Products**

Carbon oxides.

**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.

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. Corrosive by inhalation.(based on components). Inhalation of corrosive fumes/gases may cause coughing, choking,headache, dizziness, and weakness for several hours. Pulmonary edema may occur withtightness in the chest, shortness of breath, bluish skin, decreased blood pressure, andincreased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs.Pulmonary edema can be fatal. May cause irritation of respiratory tract.
<b>Eye Contact</b>	Specific test data for the substance or mixture is not available. Expected to be and irritant based on components. Irritating to eyes. May cause redness, itching, and pain. May cause temporary eye irritation.
<b>Skin Contact</b>	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May be absorbed through the skin in harmful amounts.Harmful in contact with skin.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. Maycause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea,vomiting and diarrhea.

#### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon black 1333-86-4	> 15400 mg/kg ( Rat )	> 3 g/kg ( Rabbit )	-

#### Information on toxicological effects

<b>Symptoms</b>	Erythema (skin redness). May cause redness and tearing of the eyes. Itching. Rashes Hives.
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#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Sensitization</b>	May cause sensitization of susceptible persons. May cause sensitization by skin contact
<b>Mutagenic Effects</b>	No information available
<b>Carcinogenicity</b>	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Lithium Cobalt Oxide (CoLiO2) 12190-79-3	A3	Group 2B		X
Carbon black 1333-86-4	A3	Group 2B		X

#### ACGIH (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

A3 - Animal Carcinogen

#### IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

#### NTP (National Toxicology Program)

Known - Known Carcinogen

#### OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X- Present

<b>Reproductive Toxicity</b>	Contains a known or suspected reproductive toxin
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	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).
<b>Chronic Toxicity</b>	No known effect based on information supplied. Chronic exposure to corrosive fumes/gases may cause erosion of the teeth

followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse liver 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). Central Vascular System (CVS). Kidney. Liver. Lymphatic System. Lungs. No information available.

**Aspiration Hazard**

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Copper 7440-50-8	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas)		48h EC50: = 0.03 mg/L
Carbon black 1333-86-4				24h EC50: > 5600 mg/L

**Persistence and Degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available.

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods****Disposal methods**

Should not be released into the environment.

**Contaminated Packaging**

Dispose of in accordance with federal, state and local regulations.

**US EPA Waste Number**

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 Name	California Hazardous Waste
Lithium Cobalt Oxide (CoLiO <sub>2</sub> ) 12190-79-3	Toxic
Copper 7440-50-8	Toxic
Aluminum 7429-90-5	Ignitable powder



## 14. TRANSPORT INFORMATION

**Note:** The transportation of primary lithium cells 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 provision 188 of IMO-IMDG Code"

**DOT** NOT REGULATED

**Proper Shipping Name** NON REGULATED  
**Hazard Class** N/A  
**TDG** Not regulated  
**MEX** Not regulated  
**CAO** Not regulated  
**IATA** Not regulated  
**Proper Shipping Name** Not regulated  
**Hazard Class** N/A

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

**RID** Not regulated  
**ADR** Not regulated  
**AND** Not regulated

## 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  
**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 Values %
Lithium Cobalt Oxide (CoLiO <sub>2</sub> )	12190-79-3	30-37	0.1
Copper	7440-50-8	5-10	1.0
Aluminum	7429-90-5	2-5	1.0

#### SARA 311/312 Hazard Categories

<b>Acute Health Hazard</b>	<b>No</b>
<b>Chronic Health Hazard</b>	<b>No</b>
<b>Fire Hazard</b>	<b>No</b>
<b>Sudden release of pressure hazard</b>	<b>No</b>
<b>Reactive Hazard</b>	<b>No</b>



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

End of Safety Data Sheet