

Safety Data Sheet**1. IDENTIFICATION****Product Identifier****Name of Product:** Polymer Lithium-ion Battery**Other means of identification****Product Models:****Recommended use of the chemical and restriction on use****Recommended Use:****Restriction On Use:****Information Of Supplier:****Company Name:** Guangzhou Great Power Energy & Technology Co., Ltd**Address:** No.912 West Village Segment, Shi Liang Road, Shawan Town, Panyu Guangdong Province,
P.R.China**Zip code:** 511483**Contact person:****Tel:** 020-39196828**E-mail:** lcn@greatpower.net**Emergency Telephone****020-39196828****2. Hazard(s) Identification****Classification:**

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

Skin corrosion/irritation	Category 1A
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity(repeated exposure)	Category 1
Acute toxicity(oral)	Category 3

Signal Word:**Danger****Hazard Statements**

Causes skin irritation/corrosion

Causes serious eye irritation/damage

Causes skin sensitization

May cause cancer

Symbol

Safety Data Sheet

Date of Issue: 29-Dec-2014

File No.: SD-SDS-2015-05A

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.

In case of inadequate ventilation wear respiratory protection.

Contaminated work clothing should not be allowed out of the workplace.

Keep away from flames and hot surface –no smoking.

Do not breath dust/fume/gas/mist/vapors/spray.

Do not eat, drink or smoke when using this product.

Precautionary Statements – Response

If exposed or connected: Get medical advice/attention. Specific treatment(see supplemental first aid/instruction on this label).

Skin

If on skin: Wash with plenty of soap and water. Take off contaminated clothing and water before reuse, if skin irritation or rash occurs: get medical advice/attention.

Inhalation

If inhalation: if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or doctor/physician.

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

Not applicable

3. Composition/ Information on Ingredients

Chemical Name	Molecular formula	CAS No.	Concentration
Lithium Cobalt Oxide	CoLiO ₂	12190-79-3	30–50
Aluminum	Al	7429-90-5	<8
Aluminum foil	Al	7429-90-5	3–10
Lithium hexafluorophosphate	LiP6	21324-40-3	10–20
Copper	Cu	7440-50-8	7–14
Graphite	C	7782-42-5	15–25
PVDF	(C ₂ H ₂ F ₂) _n	24937-79-9	3–8

4. First Aid Measures

General Advice

First aid is Applicable only in the case of cell rupture.

Safety Data Sheet

Date of Issue: 29-Dec-2014

File No.: SD-SDS-2015-05A

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:

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

Inhalation of Vented Gas:

Remove to fresh air. If symptoms persist, call a physician. Get medical attention immediately if symptoms occur. May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. If not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion:

Do not induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. May produce an allergic reaction. If an allergic reaction occurs, stop use and seek medical help right away. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

Itching. Coughing and/or wheezing.

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

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Product is or contains a sensitizer.

Hazardous Combustion product:

Carbon oxides

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/IOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures**Personal precautions, protective equipment and emergency procedures**

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Methods for containment

Safety Data Sheet

Date of Issue: 29-Dec-2014

File No.: SD-SDS-2015-05A

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. Handling and Storage**Precaution for safe 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. Store locked up. Keep out of the reach of children.

Incompatible products: Strong acids. Strong oxidizing agent. Strong bases.

8. Exposure Controls/Personal Protection**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lithium Cobalt oxide 12190-79-3	TWA:0.02mg/m ³		
Graphite 7782-42-5	TWA: 2mg/ms respirable fraction all foms except graphite fiber	TWA: 15mg/m ³ total dust synthetic TWA: 5mg/m ³ respirable fraction Synthetic (vacated) TWA:5mg/m ³ Respirable dust natural (vacated)TWA:10mg/m ³ total Dust synthetic (vacated) TWA:5mg/m ³ respirable fraction Synthetic TWA:15mppcf natural	
Copper 7440-50-8	TWA:0.2mg/m ³ fume TWA: 1mg/m ³ Cu dust and mist	TWA:0.1mg/m ³ fume TWA:1mg/m ³ dust and mist	

Safety Data Sheet

Date of Issue: 29-Dec-2014

File No.: SD-SDS-2015-05A

		(vacated)TWA:0.1mg/m ³ Cu Dust, fume, mist	
Lithium hexafluorophosphate 21324-40-3	TWA:2.5mg/m ³ F	TWA: 2.5mg/m ³ F TWA:2.5mg/m ³ dust (vacated)TWA: 2.5mg/m ³	
Aluminum 7429-90-5	TWA:1mg/m ³	TWA: 15mg/m ³ total dust TWA: 5mg/m ³ respirable fraction (vacated) TWA:15mg/m ³ total dust (vacated)TWA:5mg/m ³ respirable fraction (vacated)TWA:5mg/m ³ Al Aluminum	

ACGIH: 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-CLO v. OSHA, 965F, 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

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.

Eye /face protection : if splashes are likely to occur: Wear safety glasses with side shields(or goggles). None required for consumer use.

Skin protection : Wear protective gloves and protective clothing. Long sleeved clothing. Imperious gloves.

Hygiene Measure: 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 State: Solid

Color: Black

Safety Data Sheet

Date of Issue: 29-Dec-2014

File No.: SD-SDS-2015-05A

Odor: Odorless**Odor Threshold:** No information available**PH:** No data available**Melting/freezing point:** No data available**Boiling point/boiling range:** No data available**Flash Point:** No data available**Evaporation Rate:** No data available**Flammability (Solid, gas):** No data available**Flammability Limit in Air:****Upper flammability limit:** No data available**Lower flammability limit:** No data available**Vapor pressure:** No data available**Vapor density:** No data available**Specific Gravity:** No data available**Solubility:** Insoluble in water**Partition coefficient:n-octanol/water:** No data available**Autoignition temperature:** No data available**Decomposition temperature:** No data available**Kinematic viscosity:** No data available**Dynamic viscosity:** No data available**10. Stability and Reactivity****Reactivity:** No data available**Chemical stability:** Stable under recommended storage conditions.**Possibility of Hazardous Reactions:** None under normal processing.**Conditions to avoid :** Heat above 70°C or incinerate. Deform, mutilate, crush, pierce, disassemble. Short circuit. Prolonged exposure to humid conditions.**Incompatible materials:** strong acids, Strong oxidizing agents. Strong bases.**Hazardous decomposition products :** Corrosive/Irritant Hydrogen fluoride (HF) is produced in case of reaction of *lithium hexafluorophosphate(LiPF₆)* with water. Combustible vapors and formation of Hydrogen fluoride (HF) and phosphorous oxides during fire.**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.**Inhalation:** Specific test data for the substance or mixture is not available. May cause irritation of respiratory

Safety Data Sheet

tract. May cause sensitization of susceptible persons.(based on components).

Eye Contact: Irritating to eyes. Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. May cause redness, itching and pain. May cause temporary eye irritation.

Skin Contact: Specific test data for the substance or mixture is not available. Expected to be an irritant based on components. Irritating to skin. Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible person. (based on components).

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. May cause additional affects as listed under “Inhalation” .

Information on toxicological effects

Symptoms: Erythema (skin redness). May cause redness and tearing of eyes. Itching. Rashes. Hives.

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/or wheezing.

Sensitization: May cause sensitization of susceptible person, May cause sensitization by skin contact. May cause sensitization by inhalation.

Mutagenic Effects: No information available.

12. Ecological Information

Ecotoxicity: Very toxic to aquatic life long lasting effects.

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.

14. Transportation 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 requirement for the US Department of Transportation listed in 49CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal register December 15, 20104(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

Safety Data Sheet

Date of Issue: 29-Dec-2014

File No.: SD-SDS-2015-05A

batteries contained in equipment” may not be classified as “No Dangerous Goods” when shipped in accordance with special provision A45 of IATA-DGR” or “Special provision 188of IMO-IMDG Code”.

DOT: NOT REGULATED

Proper Shipping Name: NON REGULATED

Hazard Class: N/A

TDG: Not regulated

MEX: Not regulated

ICAO: Not regulated

IATA: Not regulated

Proper Shipping Name: NON REGULATED

Hazard Class: N/A

IMDG/IMO: Not regulated

Hazard Class: N/A

Ems No.: F-A,S-1

RID: Not regulated

ADR: Not regulated

AND: Not regulated

15. Regulatory information**Safety, health and environmental regulations specific in question**

CAS No.	USA TSCA	EU EINECS	China IECSC	Canada DSL
12190-79-3	Listed	Listed	Listed	Listed
7429-90-5	Listed	Listed	Listed	Listed
7782-42-5	Listed	Listed	Listed	Listed
21324-40-3	No Listed	Listed	Listed	No Listed
24937-79-9	Listed	No Listed	Listed	Listed
7440-50-8	No Listed	Listed	Listed	No Listed

16. Other Information**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 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 material used in combination with any other materials or in any process, unless specified in the test

Prepared By: Guangzhou Great Power Energy & Technology Co., Ltd**Revision Date:** December 29, 2015

Safety Data Sheet

Date of Issue: 29-Dec-2014

File No.: SD-SDS-2015-05A

--- End of SDS ---