

1. IDENTIFICATION

Product Identifier

Name of Product: Lithium Ion Cylinder Battery

Other means of identification

Product Models: multi models

Recommended use of the chemical and restriction on use

Recommended Use: Rechargeable Lithium Battery

Restriction On Use: No information available

Information Of Supplier:

Company Name: Hong Kong Highpower Technology Co.,Ltd

Address: Room 2003, 20/F, Prosperity Place, No.6 Shing Yip Street

Zip code: 518110

Contact person: Xie jinyong

Tel: +86-752-5807901-8919

E-mail: qtzhong@highpowertech.com

Emergency Telephone

+86-752-5807901-8919

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 sealed Polymer lithium-ion Battery is not hazardous in normal use.

Signal Word: No signal word

Hazard Statements and Symbol

Hazard statement:	No hazard statement
Pictogram(s):	No pictogram
Precautionary Statements:	No Precautionary Statements

Description of any hazards not otherwise classified

In case of mistreatment (abusive over charge, reverse charge, external short circuit...) and in case of fault some electrolyte can leak from the cell through the safety device. In these case refer to the risk of the electrolyte.

Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system and skin. The electrode materials are only hazardous, If the material are released by mechanical damaging of the cell or if exposed to fire.

Skin touch

Contact with battery electrolyte may cause burns and skin irritation.

Eye touch

Contact with battery electrolyte may cause burns. Eye damage is possible.

Inhalation

Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.

Ingestion

Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

Unknown Toxicity

No information available.

3. Composition/ Information on Ingredients

Chemical Name	Molecular formula	CAS No.	Concentration
Lithium nickel oxide	LiNiO ₂	12031-65-1	≤10%
Lithium Cobalt oxide	CoLiO ₂	12190-79-3	≤10%
Lithium Manganese oxide	LiMn ₂ O ₄	12057-17-9	≤20%
Polyvinylidene fluoride	(CH ₂ CF ₂) _n	24937-79-9	≤2%
Graphite powder	C	7782-42-5	≤30%
Lithium Hexafluorophosphate	LiPF ₆	21324-40-3	≤20%
Polyethylene	(C ₂ H ₄) _n	9002-88-4	0.5-5%
Copper foil	Cu	7440-50-8	≤10%
Nickel	Nickel	7440-02-0	0.5-5%
Aluminum foil	Al	7429-90-5	0.5-5%
PVC	(C ₂ H ₃ Cl) _x	9002-86-2	0.5-5%

4. First Aid Measures

General Advice

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

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.

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.

Inhalation of Vented Gas:

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. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

Contact with internal components may cause allergic skin sensitizations (rash) and irritate eyes, nose, throat, respiratory system. Cobalt and cobalt compounds are considered to be possible human carcinogen(s).

Indication of any immediate medical attention and special treatment needed

No information available

5. Fire –Fighting Measures

Suitable Extinguishing Media

Use foam , dry powder or dry sand, CO₂ as appropriate.

Unsuitable Extinguishing Media:

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

Specific Hazards Arising from the chemical

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to fire situation. This could result in the release of flammable or corrosion materials.

Hazardous Combustion product:

CO, CO₂, Metals oxides, Irritating fumes.

Protective equipment and precautions for firefighters

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

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

If the battery material 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, dispose the case after the batteries cool and vapors dissipate. Provide maximum ventilation. Avoid contact with skin, eyes or inhalation of vapors.

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

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.

7. Handling and Storage

Precaution for safe handling

Always follow the warning information on the batteries and in the manuals of devices. Only use the recommended battery types. Keep batteries away from children. For devices to be used by children, the battery

casing should be protected against unauthorized access. Unpacked batteries shall not lie about in bulk. In case of battery change always replace all batteries by new ones of identical type and brand. Do not swallow batteries. Do not throw batteries into water. Do not throw batteries into fire. Avoid deep discharge. Do not short-circuit batteries use recommended charging time and current.

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. If battery is subject to storage for such a long term as more than 3months, it is recommended to recharge the battery periodically.

Incompatible products: Strong acids. Strong oxidizing agent.

8. Exposure Controls/Personal Protection

Control parameters

Not established

Appropriate engineering controls

Under normal conditions(during charge and discharge) release of ingredients does not occur.

Individual protection measures

Respiratory protection:

No personal respiratory protective equipment normally required. In case of inadequate ventilation wear respiratory protection

Eye /face protection:

No personal protective equipment normally required.

Skin protection:

Wear protective clothing to prevent contact

Hand protection:

Wear protective gloves

9. Physical and Chemical Properties

Physical State: Solid

Color: Green

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:

When heated above 150°C the risk of rupture occurs. Due to special safety construction, rupture implies controlled release of pressure without ignition

Conditions to avoid:

Do not subject battery to mechanical shock. Keep away from open flames, high temperature.

Incompatible materials:

Strong acids, strong oxidizing agents.

Hazardous decomposition products:

Under fire conditions, the electrode materials can form carcinogenic cobalt oxides

11. Toxicological Information

Information on likely routes of exposure

Inhalation:

Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.

Eye Contact:

Contact with battery electrolyte may cause burns. Eye damage is possible.

Skin Contact:

Contact with battery electrolyte may cause burns and skin irritation.

Ingestion:

Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

Under normal conditions (during charge and discharge) release of ingredients does not occur. If accident release occurs see information in section 2,3, and 4. Swallowing of battery can be harmful. Call the local

Poison Control Centre for advice and follow-up.

Information on toxicological characteristics

Acute toxicity:

No data available.

Skin corrosion/irritation:

The liquid in the battery irritates.

Serious eye damage/ irritation:

The liquid in the battery irritates.

Respiratory sensitization:

The liquid in the battery may cause sensitization to some person.

Skin sensitization:

The liquid in the battery may cause sensitization to some person.

Carcinogenicity:

Cobalt and Cobalt compounds are considered to be possible human carcinogen(s)

Germ Cell Mutagenicity:

No data available.

Reproductive Toxicity:

No data available.

STOT-single Exposure:

No data available.

STOT-repeated Exposure:

No data available.

Aspiration Hazard:

No data available.

12. Ecological Information

Ecotoxicity:

Water hazard class I (Self-assessment): slightly hazardous for water

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

According to Packing Instruction 965-970 of IATA DGR 56rd Edition for transportation, the special provision 188 of IMDG(inc Amdt36-12). The batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers are integrate and tighten closed before transport. Take in cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don't put the goods together with oxidizer and chief food chemicals. The transport vehicle should prevent exposure, rain and high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, Power and fire sources. Under the condition of road transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area. Forbid to use wooden, cement for bulk transport:

Lithium batteries shipped as "Lithium batteries", Lithium batteries packed with equipment", or "lithium batteries contained in equipment" may not be classified as "No Dangerous Goods" when shipped in accordance with Packing Instruction 965-970 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
12031-65-1	No Listed	No Listed	No Listed	No Listed
12190-79-3	Listed	Listed	Listed	Listed
12057-17-9	No Listed	No Listed	No Listed	No Listed
24937-79-9	Listed	No Listed	Listed	Listed
7782-42-5	Listed	Listed	Listed	Listed
21324-40-3	No Listed	Listed	Listed	No Listed
9002-88-4	Listed	Listed	Listed	Listed
7440-50-8	No Listed	Listed	Listed	No Listed

Safety Data Sheet

Date of Issue: 18-Jan-2015

File No.: HP-SDS-2015-A02

7440-02-0	No Listed	Listed	Listed	No Listed
7429-90-5	Listed	Listed	Listed	Listed
9002-86-2	Listed	Listed	Listed	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 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: January 18, 2015

--- End of SDS ---