



珠海光宇电池有限公司

ZHU HAI COSLIGHT BATTERY Co.,Ltd

No.209,Zhufeng Way,Xinqing Science & Technology Park,Doumen District,Zhuhai519180, P.R.China

珠海市斗门区新青科技工业园珠峰大道209号

Tel:86-756- 6199908 Fax:86-756-6119910 http://www.coslight.com.cn

COSLIGHT LITHIUM ION POLYMER BATTERY SAFETY DATA SHEET

Ref No:ARC 080515

PRODUCT NAME: Recharge Polymer Lithium Battery Volts: 3.7V

TRADE NAME: Cylindrical Lithium-ion Rechargeable Battery

CHEMICAL SYSTEM: Lithium Ion Designed for Recharge: yes

SECTION 1- MANUFACTURE INFORMATION

Manufactured By: Telephone Number for Information

ZHU HAI COSLIGHT BATTERY Co.,Ltd

No.209,Zhufeng Way,Xinqing Science & Technology Park,Doumen District,Zhuhai519180, P.R.China

Tel:86-756-6199908 Fax:86-756-6119910

Zip Code:519180

Date Prepared:2009/05/13

SECTION 2- MANUFACTURE INFORMATION

IMPORTANT NOTE: The battery should not be opened or burned.Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL(OSHA)	TLV(ACGIH)	wt%
Graphite (CAS# 7782-42-5)	5mg/m3 TWA(respirable fraction) 15mg/m3 TWA(tatal dust)	2mg/m3 TWA(respirable fraction)	7~25
Lithium Cobalt Oxide (CAS# 12190-79-3)	0.1mg/m3 TWA(as Co)	0.02mg/m3 TWA (as Co)	15~40
Hexafluoropropylene-vinylidene fluoride Copolymer (CAS#9011-17-0)	None established	None established	3~15
Lithium Hexafluorophosphate (CAS#21324-40-3)	None established	None established	0~5
Acetylene Black (CAS#1333-86-4)	3.5mg/m3 TWA (as carbonate black)	3.5mg/m3 TWA (as carbonate black)	0-2
Diethyl Carbonate (CAS#105-58-8)	None established	None established	0-15



珠海光宇电池有限公司

ZHU HAI COSLIGHT BATTERY Co.,Ltd

No.209,Zhufeng Way,Xinqing Science & Technology Park,Doumen District,Zhuhai519180, P.R.China

珠海市斗门区新青科技工业园珠峰大道209号

Tel:86-756- 6199908 Fax:86-756-6119910 <http://www.coslight.com.cn>

Dimethyl Carbonate (CAS#616-38-6)	None established	None established	0-15
Ethyl Methyl Carbonate (CAS#623-53-0)	None established	None established	0-15
Propylene Carbonate (CAS#108-32-7)	None established	None established	0-15
Ethylene Carbonate (CAS#96-49-1)	None established	None established	0-15

SECTION 3-Independent Certification of Lithium-Ion cell Transportation Model Regulation

No	Test Item	Criteria	Result	Remark
T1	Altitude Simulation	No mass loss, leakage, venting, disassembly, rupture, and fire, OCV should not be less than 90% before testing	Passed	
T2	Thermal Test	No mass loss, leakage, venting, disassembly, rupture, and fire, OCV should not be less than 90% before testing	Passed	
T3	Vibration	No mass loss, leakage, venting, disassembly, rupture, and fire, OCV should not be less than 90% before testing	Passed	
T4	Shock	No mass loss, leakage, venting, disassembly, rupture, and fire, OCV should not be less than 90% before testing	Passed	
T5	External Short circuit	External temperature should not exceed 170 degree, No disassembly, rupture, and fire within six hours of this test	Passed	
T6	Impact	External temperature should not exceed 170 degree, No disassembly and fire within six hours of this test	Passed	
T7	Overcharge	No disassembly and fire within seven days of this test	Passed	Battery only
T8	Forced Discharge	No disassembly and fire within seven days of this test	Passed	Battery only

SECTION 4-HAZARDS IDENTIFICATION

All chemical materials of lithium cell are stored in a hermetically sealed metal case, designed to withstand and pressures encountered during normal use. There is no physical danger of ignition or explosion and chemical danger of hazardous material's leakage during normal use. However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by miss-use, the gas release vent will be operated and hazardous materials may be released.

Potential Health Effects:

Cobalt and Cobalt compounds are considered to be possible human carcinogen(s). These chemicals may cause allergic skin sensitization(rash) and irritate eyes, skin, nose, throat, respiratory system.



珠海光宇电池有限公司

ZHU HAI COSLIGHT BATTERY Co.,Ltd

No.209,Zhufeng Way,Xinqing Science & Technology Park,Doumen District,Zhuhai519180, P.R.China

珠海市斗门区新青科技工业园珠峰大道209号

Tel:86-756- 6199908 Fax:86-756-6119910 <http://www.coslight.com.cn>

Since electrolyte is flammable liquid, it does not bring close to fire. It may cause moderate to severe eye irritation, dryness of the skin. Breathing of its mist, vapor or fume may irritate nose, throat and lungs. Exposure of electrolyte material in the area which contains water may generate hydrofluoric acid, which can cause immediate burns on skin, severe eye burn. The ingestion of electrolyte can cause serious chemical burns of mouth, esophagus and gastrointestinal tract.

SECTION 5-FIRST-AID MEASURES

- ▶Eyes:Flush with water for at least 15 minutes.If irritation occurs and persists,contact a medical doctor.
- ▶Skin:Remove contaminated clothing and thoroughly wash with soap and plenty of water.If irritation persists,contact a medical doctor.
- ▶Inhalation:Remove to fresh air.If breathing difficulty or discomfort occurs and persists,see a medical doctor. If breathing has stopped,give artificial respiration and see a medical doctor IMMEDIATELY.

SECTION 6-FIRE-FIGHTING MEASURE

- ▶Hazardous Combustion Products: When burned,hazardous products of combustion including fumes of carbon monoxide, carbon dioxide,and fluorine can occur.
- ▶Extinguishing Media: Water,carbon dioxide,dry chemical,or foam.
- ▶Basic Fire Fighting Procedures: Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- ▶Unusual Fire & Explosion Hazards: This material does not represent an unusual fire or explosion hazard.
Flash Point :38°C(CC)(100F) .
Autolgnition Temperature:No Data.
Flammability Limits in Air,Lower,% by Volume:1.4.
Flammability Limits in air,Upper,% by Volume:11.

SECTION 7- ACCIDENTAL RELEASE MEASURES

- ▶Procedure for Release and Spill:Sweep up and place in a suitable container, dispose or waste according to all local,state and Federal Laws and Regulations.
- ▶Before cleanup measures begin,review the entire MSDS with particular attention potential Health Effects;and on Recommended Personal Protective Equipment.

SECTION 8-HANDLING AND STORAGE

▶Handling

Specific safe handling advice: Never throw out cells in a fire or expose to high temperatures. Do not soak cells in water and seawater.Do not expose to strong oxidizers.

Do not give a strong mechanical shock or throw down. Never disassemble,modify or deform.

Do not connect the positive terminal to the negative terminal with electrically conductive material.

- ▶Storage conditions(suitable,to be avoided):Do not place the battery cell near heating equipment, nor expose to direct sunlight for long periods. Elevated temperatures can result in shortened battery cell life and degrade performance. Store in cool place(temperature:-20-45°C, humidity:45-75%).

Incompatible products:conductive materials,water,seawater,strong oxidizers and strong acids.

Packing material (recommended,not suitable): Insulative and tearproof materials are recommended.

SECTION 9-EXPOSURE CONTROLS/PERSONAL PROTECTION

- ▶Engineering controls: Investigate engineering techniques to reduce exposures use with adequate ventilation and recommended personal protective equipment.
- ▶Eye/Face protection:Use good industrial practice to avoid eye contact.Processing of this product releases vapors or fumes which may cause eye irritation.Where eye contact may be likely wear chemical goggles and have eye flushing equipment available.
- ▶Skin protection:Minimize skin contamination by following good industrial hygiene practices.Wearing protective gloves is recommended.Wash hands and contaminated skin thoroughly after handling.
- ▶Respiratory protection: Avoid breathing dust and processing vapors.When adequate ventilation is not available,wear a NIOSH/MSHA respirator approved for protection against inorganic dusts.
- ▶Special clothing: Robber gloves.



珠海光宇电池有限公司

ZHU HAI COSLIGHT BATTERY Co.,Ltd

No.209,Zhufeng Way,Xingfeng Science & Technology Park,Doumen District,Zhuhai519180, P.R.China

珠海市斗门区新青科技工业园珠峰大道209号

Tel:86-756- 6199908 Fax:86-756-6119910 <http://www.coslight.com.cn>

SECTION 10-HYSICA DATE

Physical state: Solid
Form:Geometric color (without outer PVC COVER)
Odor : No odor
pH:Not Applicable
Flash point: Not Applicable
Density: Not Applicable
Solubility: Not Soluble.

SECTION 11-STABILITY AND REACTIVITY

Hazardous reactions may occur under some specific conditions.

- ▶ Conditions to avoid: When a battery cell is exposed to an external short-circuit,crushes,modification,high temperature above 100 degree C, it will be the cause of heat generation and ignition.Avoid to be exposed to direct sunlight and high humidity.
- ▶ Materials to avoid: Conductive materials,water,seawater,strong oxidizers and strong acids.
- ▶ Hazardous decomposition products: Acrid or harmful gas is emitted during fire.

SECTION 12-TOXICOLOGICAL INFORMATION

Eco toxicological Information:No information available.
Local Environmental Effects: Unknown.
Since some internal materials remain in the environment,do not bury or throw out into the environment.

SECTION 13-DISPOSAL INFORMATION

Waste disposal must be in accordance with the applicable regulations.Disposal of the lithium ion battery cells should be performed by permitted, professional disposal Page:
firms knowledgeable in State or Local requirements of hazardous waste treatment and hazardous waste transportation.Incineration should never be performed by battery but users,eventually by trained professional in authorized facility wity proper gas and fume treatment.

SECTOPM 14-TRANSPORTATION/SHIPPING INPORMATION

- ▶ US DOT,ALL Coslight batteries are not subject to the requirements of the Department of Transportation (DOT) subchapter C,Hazardous Material Regulations since each Coslight battery meets the exceptions under 173.185(b). The Coslight batteries are exempted from the US DOT regjlations as long as they are separated to prevent short circuits and packed in strong packing for conditions normally encountered in transportation.
- ▶ ICAO and IATA,all Coslight batteries are regulated as Hazardous Material by the International Civil Aviation Organization (ICAO) an the International Air Transport Association (IATA) when transporting more than 24 batteries or 12 batteries in a single package.They must be transported according to the requirement in Special Provision "PI965 966 967".
- ▶ IMO,all Coslight batteries are regulated as Hazardous Material by the International Maritime Oraganization (IMO) when transporting more than 24 batteries or 12 batteries in a single package.These must be transported according to the requirement in Special Provisions"188"and"230"
- ▶ ADR,RID,all Coslight batteries are regulated as Hazardous Material by the ADR (road) and RID (rail) when transporting more than 24 batteries or 12 batteries in a single package .These must be transported according to the requiremint in Special Provisions "188"and"230".
- ▶ BUILDING OF NEW BATTERY PACK-if you build any of Coslight lithium batteries into battery pack, you must assure that ther are being tested in accordance with the UN Model Regulation,Manual of Test and Criteria,Part III,subsection 38.3.

SECTOPM 15-Regulatory Information

- 1.The transportation of the lithium batteries is regulated by nations "Model Regulations on Transport of Dangerous Goods".
- 2.Lithium batteries and cells are subjected to shipping requirements exceptions under 49 CFR 173.185.
- 3.Shipping of lithium batteries in aircrafts are regulated by the international civil aviation organization (ICAO) and the international air transport association (IATA) requirements in special provision PI965 966 967
4. Shipping of lithium batteries on sea are regulated the international maritime dangerous goods (IMDG) requirements of UN3090.
- 5.Cobalt compounds supposed hazardous and e subjected to reporting requirements of section 313 of title 1:1 of the suspended are amendments and reauthorization act of 1986 (SARA) and 40 CFR part 372.



珠海光宇电池有限公司

ZHU HAI COSLIGHT BATTERY Co.,Ltd

No.209,Zhufeng Way,Xinqing Science & Technology Park,Doumen District,Zhuhai519180, P.R.China

珠海市斗门区新青科技工业园珠峰大道209号

Tel:86-756- 6199908 Fax:86-756-6119910 <http://www.coslight.com.cn>

SECTION 16-Other Information

The information and recommendations set forth are made in good faith and are believed to be accurate at the date of preparation. DBK makes no warranty expressed or implied with respect to lithium content content information is available from DBK on request.

Remark:The batteries are safe for transportation,and it is advised to use dry power powder fire extinguisher in case of explosion or inflammation