三帕认证

Material Safety Data Sheet

Product Name: Rechargeable Li-ion Battery

Model: ICR18650 2P

Revision Date: Jan. 25, 2019

Report No.: NBLC20190102MSDS01

Compiler: Max Feng

Reviewer: Tracy Chen

Approver:

Guangzhou CP-UP Certification Technology Service Co., Ltd.

Material Safety Data Sheet

SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION	
Name of Sample: Rechargeable Li-ion Battery	**Model and Ratings:** ICR18650 2P 3.7V 3600mAh 13.32Wh
Company: ZHUHAI GREAT POWER ENERGY CO., LTD.	**Address:** XINQING TECHNOLOGY PARK, ZHUFENG AUENUE, JING AN TOWN, DOUMEN DISTRICT, ZHUHAI CITY, GUANGDONG PROVINCE
Zip code: 519110	**Fax:** /
E-mail: renzheng@greatpower.net	**Emergency Telephone:** 0756-6333555

SECTION2 – HAZARDS IDENTIFICATION
Hazards Identification： The battery has passed the test items of UN Model Regulations, Manual of Test and Criteria Section UN38.3
Emergency Overview: Caution: Avoid contact and inhalation the electrolyte contained inside the battery.

SECTION3 – COMPOSITION/INFORMATION ON INGREDIENT		
Ingredient	**CAS No.**	**Concentration (%)**
Lithium Cobalt Oxide	12190-79-3	44.8
Graphite	7782-42-5	20.7
EC	96-49-1	5.4
EMC	623-53-0	0.9
DEC	105-58-8	7.2
PC	108-32-7	2.3
LiPF6	21324-40-3	1.8
Polypropylene	9003-07-0	1.3
Copper	7440-50-8	5.3
Aluminum	7429-90-5	10.3

SECTION 4 – FIRST AID MEASURES

Eye Exposure:

In case of contact with eyes, flush with copious of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Skin Exposure:

If the internal battery materials of an opened battery cell some into contact with skin, immediately flush with plenty of water.

Inhalation Exposure:

If inhaled the internals of battery vomiting. Seeking Immediate medical attention.

Ingestion Exposure:

If swallowed, do not induce vomiting. Seek immediate medical attention.

SECTION 5 – FIRE FIGHTING MEASURES

Danger characteristic:

Exposure to excessive heat can cause venting of the liquid electrolyte. Battery may burst and release hazardous decomposition products when exposed to a fire situation.

Hazardous combustion products:

Corrosive gas may be emitted during fire.

Fire-Fighting method& media

The stuff must equip with filtermask (full mask) or isolated breathing apparatus. The stuff must wear the clothes which can defense 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 extinguishment Media: plenty of water, dry chemical powder or carbon dioxide.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Emergency treatment:

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 and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate waste.

SECTION 7 – HANDLING AND STORAGE

Handling:

1. Do not allow battery terminates to contact each other, or contact with other metals.
2. Do not put the cell or battery into a fire or heat it. Do not solder the cell directly. Do not use or leave the cell or battery in a place near fire or heaters.
3. Do not expose the battery to excessive physical shock or vibration.
4 Do not immerse, throw, and wet a battery in water.
5 Short-circuiting should be avoided. Short circuit will reduce the life of the battery and can lead to ignition of surrounding materials. Physical contact with to short- circuited battery can cause skin burn.
6. The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.
7. Place the cell beyond the child packing and container.
8. Do not connect the battery directly to an electric outlet or cigarette socket in a car.
9. Be sure to use the specified charger for battery, and follow the charging instructions correctly.
10. Do not mix old and new batteries together, neither with Ni-Cd, dry batteries or another manufacturer

batteries or product.

Storage:

1. Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks.
2. Keep the sample in the cool, dry and well-ventilated place (temperature: -20~30degree C humidity:45~85%). Do not exposure to direct sunlight for long periods. Keep away from fire and heating sources. Don't keep the samples with oxidizer and acid.
3. charge the battery every 6 months to the amount specified by the manufacture, even if the battery is not used.
4. Equip with relevant types and quantities of the extinguishment instruments. The storage place should be equipped with suitable shelter materials for divulgence handling.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Control:

Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place.

Respiratory Protection:

Not necessary under conditions of normal use. Wear self-contained breathing filtermask if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.

Eyes Protection:

Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery.

Skin and Body Protection:

Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.

Hands Protection:

Not necessary under conditions of normal use. Wear chemical resistant rubber.

Other Protections:

No smoking, dining and drinking water in the workplace. Keep good habit of hygiene.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Blue

Physical state:

Solid

Form:

Prismatic

Odor:

Odorless

Solubility:

Insoluble in water.

SECTION 10 – STABILITY AND REACTIVITY

Stability:
Stable under normal temperature and pressure.

Distribution of Ban:
Strong oxidizer, strong acid and corrosives

Conditions to Avoid:
Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature above 100℃, direct sunlight and high humidity, immerse in water or overcharge.

Hazardous Polymerization:
Will not occur.

Hazardous Decomposition Products:
Metal oxides, CO, CO_2

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity:
N/A

Sub-acute and Chronic Toxicity:
N/A

Irritation Data:
The internal battery materials may cause irritation to eyes and skin.

Sensitization:
Lithium transition metal oxidate-Li(M)m(O)n: the nervous system of respiratory organs may be stimulated sensitively
Copper: Sensitization of the skin may be caused by the long-term or repetitive contact.

Mutagenicity:
No information is available.

Carcinogenicity:
No information is available.

Others:
Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.

SECTION 12 – ECOLOGICAL INFORMATION

Eco-toxicity:
No data available.

Biodegradable:
No data available.

Mobility in soil:
No data available.

Bioconcentration or biological accumulation:
No data available.

Other harmful effects:
Don't abandon the battery into environment, may cause water or soil pollution.

SECTION 13 - DISPOSAL CONSIDERATIONS

Appropriate Method of Substance:

The battery should be completely discharged prior to disposal in order to prevent short circuit. The battery contains recyclable materials. It is suggested recycle. Refer to National or Local regulations before handling. Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in National or Local regulations of hazardous waste treatment and hazardous waste transportation.

SECTION 14 – TRANSPORT INFORMATION

IATA:	**Proper Shipping Name:** Lithium ion batteries/packed with equipment/contained in equipment
	UN Number：UN3480/UN3481
	The battery has passed the test items of UN Model Regulations, Manual of Tests and Criteria, Part III, sub-section 38.3. According to IATA DGR 60th Edition, PACKING INSTRUCTION 965 ~ 967 of section II or IB for transportation.
IMO:	**Proper Shipping Name:** Lithium ion batteries/packed with equipment/contained in equipment
	UN Number：UN3480/UN3481
	The battery has passed the test items of UN Model Regulations, Manual of Tests and Criteria, Part III, sub-section 38.3. The goods is not restricted to IMO IMDG Code (Amend 39-18) according to special provision188.

SECTION 15 – REGULATORY INFORMATION

US DOT:

Effective December 29,2004, the DOT requires that the outside of each package the contains primary lithium batteries, regardless of size of number of batteries, batteries, be labeled with the following statement:" PRIMARY LITHIUM BATTERIES-FOBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT", The labeling requirement covers shipments via highway, rail vessel or cargo-only aircraft and covers all shipment inside, into or out of the US. The label must be in contrasting color and the letters must be 12mm (0.5 in) in height for packages weighing more than 30Kg and 6mm (0.25 in) in height for packages weighting less than 30Kg.

SECTION 16 – ADDITIONAL INFORMATION

Date：

2019-01-25

Department：

Guangzhou CP-UP Certification Technology Service Co., Ltd.
No.1, Aigang 7th Lane, Yunxing Zhukeng Village, Shiqiao Street, Panyu District, Guangzhou City,China
Tel.: 0086-20-31127037
WEB: www.cp-up.com
Email: info@cp-up.com

Other Information：

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damage of any third party or for last profits or any special, indirect, consequential or exemplary damages arising from using the above information.

中国认可
国际互认
检验
INSPECTION
CNAS IB0551

MATERIAL SAFETY DATA SHEET

Report No.:	KSXNY20191216MSDS04
Product Name:	Rechargeable Li-ion Battery
Type/Model:	18650 3.7V 2000mAh 7.4Wh
Revision Date:	January 2, 2020
Compiler:	Shynah Gao
Reviewer:	Jason Huang
Approver:	Hongbin Xu

广州邦禾检测技术有限公司
检验专用章

广州邦禾检测技术有限公司

Guangzhou MCM Certification & Testing Co., Ltd.

Material Safety Data Sheet

SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION	
Product Name:	Rechargeable Li-ion Battery
Type/Model:	18650 3.7V 2000mAh 7.4Wh
Company:	Shenzhen Kamcy New Energy Products Co., Ltd
Address:	2nd floor, Building 4, Chuangfu Industrial Zone, Shuiku Road, Tiegang, Xixiang Town, Bao'an District, Shenzhen, China
Fax:	0755-27675160
Zip code:	518102
E-mail:	kamcy@126.com
Emergency Telephone: 13823569060	

SECTION 2 - HAZARDS IDENTIFICATION

Hazards Identification:

Lithium batteries itself are classified to Class 9 Dangerous Goods, Miscellaneous dangerous substances and articles.

The battery has passed the test items of UN Model Regulations, Manual of Test and Criteria Section 38.3, and Report No.: KSXNY20181226U01.

The sealed intact battery is not hazardous in normal use.

Emergency Overview:

Caution: Avoid contact and inhalation the electrolyte contained inside the battery.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENT

Ingredient	Molecular formula	CAS No.	Weigh
Lithium Cobalt Dioxide	$LiCoO_2$	12190-79-3	25-35%
Graphite	C	7782-42-5	15-20%
Polyvinylidene Fluoride	$(C_2H_2F_2)_n$	24937-79-9	1-5%
Acetylene Black	C	1333-86-4	0.5-3%
Aluminium	Al	7429-90-5	21-23%
Copper	Cu	7440-50-8	10-11%
Ethyl Methyl Carbonate	$C_4H_8O_3$	623-53-0	10-15%
Lithium Hexafluorophosphate	$LiPF_6$	21324-40-3	

SECTION 4 - FIRST AID MEASURES

Eye Exposure:

In case of contact with eyes, flush with copious of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Skin Exposure:

If the internal battery materials of an opened battery cell come into contact with skin, immediately flush with plenty of water or soap.

Inhalation Exposure:

If inhaled the internals of battery vomiting. Seeking Immediate medical attention.

Ingestion Exposure:

If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

SECTION 5 - FIRE FIGHTING MEASURES

Danger characteristic:

Exposure to excessive heat can cause venting of the liquid electrolyte.

Battery may burst and release hazardous decomposition products when exposed to a fire situation.

Hazardous combustion products:

Corrosive and toxic gas may be emitted during fire.

Fire-Fighting method:

The staff must equip with filtermask (full mask) or isolated breathing apparatus.

The staff must wear the clothes which can defense 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 extinguishment.

Fire-Fighting media:

Plenty of water, dry chemical powder or carbon dioxide.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Emergency treatment:

If the battery material is released, remove personnel from area until the batteries cool down and fumes dissipate. Provide maximum ventilation to clear out hazardous gases and avoid skin and eye contact or inhalation of vapors

Remove spilled liquid with absorbent and incinerate waste.

SECTION 7 - HANDLING AND STORAGE

Handling:

1. Do not allow battery terminates to contact each other, or contact with other metals.
2. Do not put the cell or battery into a fire or heat it. Do not solder the cell directly. Do not use or leave the cell or battery in a place near fire or heaters.
3. Do not expose the battery to excessive physical shock or vibration.
4. Do not immerse, throw, and wet a battery in water.
5. Short-circuiting should be avoided. Short circuit will reduces the life of the battery and can lead to ignition of surrounding materials. Physical contact with to short- circuited battery can cause skin burn.
6. The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.
7. Place the cell beyond the child packing and container.
8. Do not connect the battery directly to an electric outlet or cigarette socket in a car.
9. Be sure to use the specified charger for battery, and follow the charging instructions correctly.
10. Do not mix old and new batteries together, neither with Ni-Cd, dry batteries or another manufacturer batteries or product.

Storage:

1. Batteries should be separated from other materials and stored in a noncombustible, well ventilated, sprinkler-protected structure with sufficient clearance between walls and battery stacks.
2. Keep the sample in the cool, dry and well-ventilated place (temperature: -20~30 °C, humidity: 45~85%). Do not exposure to direct sunlight for long periods. Keep away from fire and heating sources. Don't keep the samples with oxidizer and acid.
3. Equip with relevant types and quantities of the extinguishment instruments. The storage place should be equipped with suitable shelter materials for divulgence handling.
4. For rechargeable battery, charge the battery every 6 months to the amount specified by the manufacture, even if the battery is not used.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Control:
Keep away from heat and open flame. Supply with sufficient partial air exhaust. Store in a cool, dry place.

Respiratory Protection:
Not necessary under conditions of normal use. Wear self-contained breathing filtermask if the density exceed in the air. Wear breathing apparatus under the condition of emergency rescue or evacuation.

Eyes Protection:
Not necessary under conditions of normal use. Wear protective glasses if handling a leaking or ruptured battery.

Skin and Body Protection:
Not necessary under conditions of normal use. Wear fireproofing, gas defense clothes in case of handling a leaking or ruptured battery.

Hands Protection:
Not necessary under conditions of normal use. Wear chemical resistant rubber glove.

Other Protections:
No smoking, dining and drinking water in the workplace. Keep good habit of hygiene.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue
Physical state:	Solid
Form:	Cylindrical
Odor:	Odorless
Solubility:	Insoluble in water.

SECTION 10 - STABILITY AND REACTIVITY

Stability:
Stable under normal temperature and pressure.

Distribution of Ban:
Explosives, inflammables, strong oxidants and corrosives

Conditions to Avoid:
Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature above 100℃, direct sunlight and high humidity, immerse in water or overcharge.

Hazardous Polymerization:
Will not occur.

Hazardous Decomposition Products:
Metal oxides, carboxyl compound such as CO, CO_2, etc.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity:
No information is available.

Sub-acute and Chronic Toxicity:
No information is available.

Irritation Data:
The internal battery materials may cause irritation to eyes and skin.

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

Mutagenicity:
No information is available.

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

Others:
Since the materials in this battery are sealed in the can, the potential for exposure to the components of the battery is negligible, when the battery is used as directed. However technical or electrical abuse of the battery may result in the release of battery contents.

SECTION 12 - ECOLOGICAL INFORMATION

Eco-toxicity:
No information is available.

Biodegradable:
No information is available.

Mobility in soil:
No information is available.

Bioconcentration or biological accumulation:
No information is available.

Other harmful effects:
Don't abandon the battery into environment, may cause water or soil pollution.

SECTION 13 - DISPOSAL CONSIDERATIONS

Appropriate Method of Substance:
The battery should be completely discharged prior to disposal in order to prevent short circuit.
The battery contains recyclable materials, and it is suggested recycle.
Refer to National or Local regulations before handling.
Disposal of the battery should be performed by permitted, professional disposal firms knowledgeable in National or Local regulations of hazardous waste treatment and hazardous waste transportation.

SECTION 14 - TRANSPORT INFORMATION

Lithium batteries are classified to Lithium ion batteries (including lithium ion polymer batteries) and Lithium metal batteries (including lithium alloy batteries).
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 "PI965-970 section II of IATA-DGR" or "special provision 188 of IMO-IMDG Code".

Air transportation, according to IATA DGR 61st Edition (Effective 1 January-31December 2020)	
UN Number	UN 3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	Class 9
Packaging requirement	PACKING INSTRUCTION 965 of section IB
UN Number	UN 3481
Proper Shipping Name	LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Hazard Class	Not restricted
Packaging requirement	PACKING INSTRUCTION 966-967 of section II

Sea transportation, according to IMO IMDG Code (Amend 39-2018)	
UN Number	UN 3480
Proper Shipping Name	LITHIUM ION BATTERIES
Hazard Class	Not restricted
Special provision	sp188
Package instruction	Not-restricted goods
EmS No.	F-A, S-I
UN Number	UN 3481
Proper Shipping Name	LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, or LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Hazard Class	Not restricted
Special provision	sp188
Package instruction	Not-restricted goods
EmS No.	F-A, S-I

SECTION 15 - REGULATORY INFORMATION

Dangerous Goods Regulation (DGR)
Recommendations on the Transport of Dangerous Goods Model Regulations
International Maritime Dangerous Goods (IMDG)
Occupational Safety and Health Act (OSHA)
Toxic Substances Control Act (TSCA)
Code of Federal Regulations (CFR)
Technical Instructions for the Safe Transport of Dangerous Goods
California Proposition 65
Superfund Amendments and Reauthorization Act Title III (302/311/312/313) (SARA)
In accordance with all Federal, State and local laws.

SECTION 16 - ADDITIONAL INFORMATION

According standard:

GB/T 16483-2008 Safety data sheet for chemical products Content and order of sections
ISO 11014:2009(E) Safety data sheet for chemical products – Content and order of sections

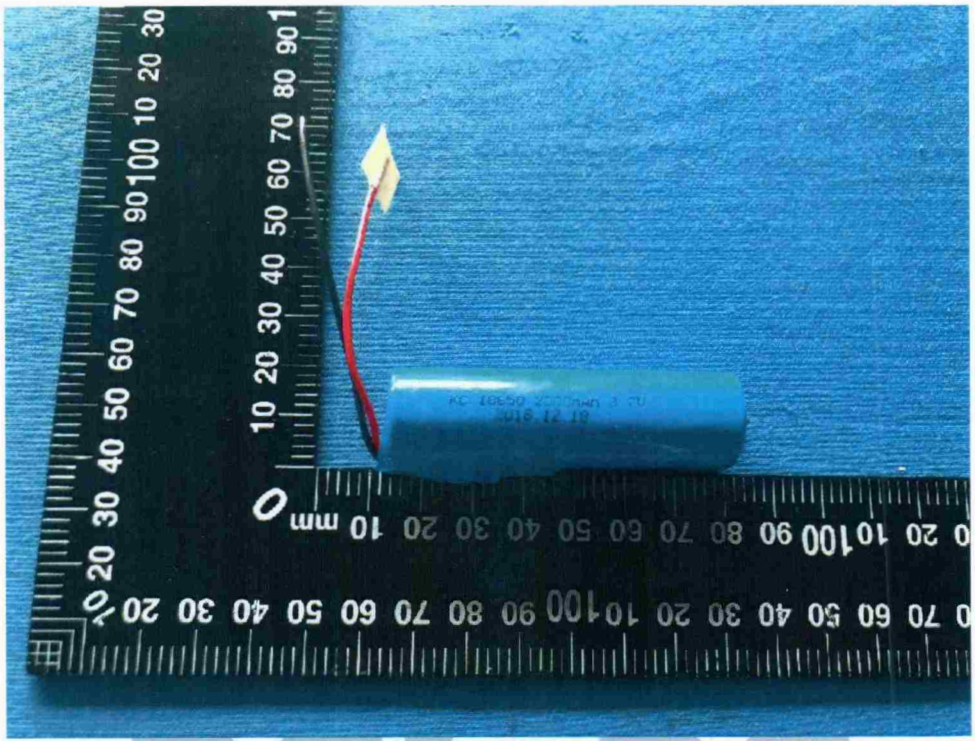
Editing date:
December 20, 2019

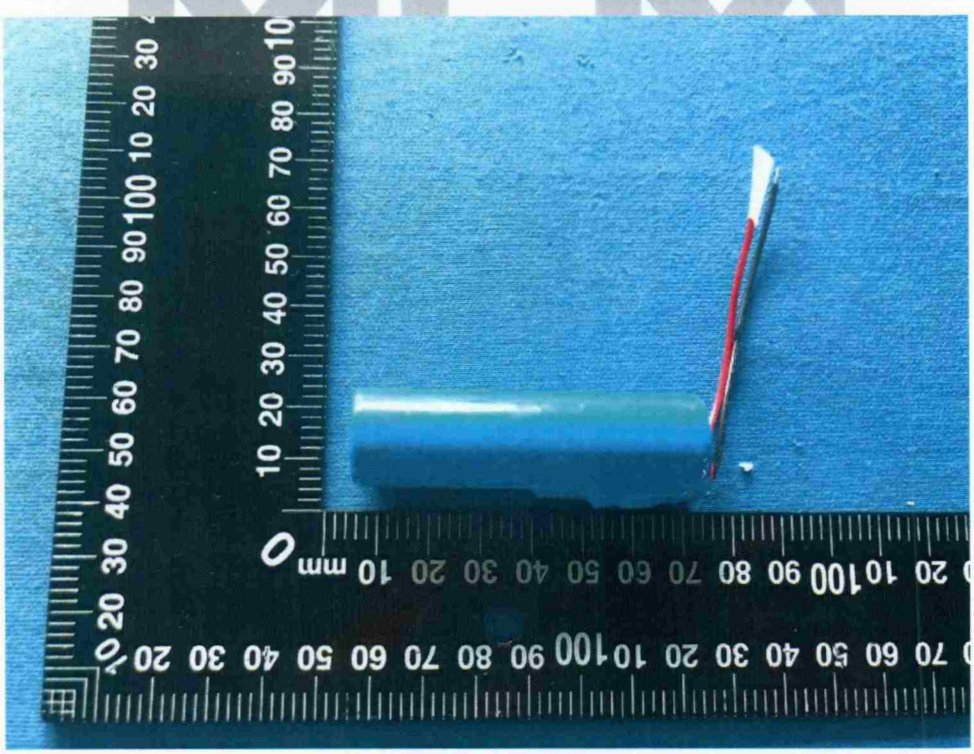
Department:
Guangzhou MCM Certification and Testing Co., Ltd.
1 F No.13, Zhong San Section, ShiGuang Road, Panyu District, Guangzhou City, Guangdong Province, China.
Tel.:0086-20-34777662, 0086-20-34777663
WEB: Http://www.mcmtek.com
Email: mark.miao@mcmtek.com

Other Information:
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damage of any third party or for last profits or any special, indirect, consequential or exemplary damages arising from using the above information.

Sample Reference Photo

Model: 18650 3.7V 2000mAh 7.4Wh





ZM

扫微信二维码
关注谱尼测试

Report No.: MOIALR0T15264716

MSDS Report

Sample Description & Model	Li-ion Battery 18650
Applicant	SHENZHEN BOFUNENG BATTERY CO., LTD
Address	A Building Chunyang Industrial park, Zhugushi Road Wulian community Long Cheng Street,Longgang district, Shenzhen China

No.: MOIALR0T15264716
Code: m34gahycxp

声　明
Statement

1. 本证明/报告的结论仅对委托方所送样品负责。
The conclusion of the certificate/report is responsible for the provided sample only.

2. 委托方必须如实提供样品、申报和声明资料，并保证与实际相符，否则由委托方承担由此导致的全部后果和责任。
The applicant shall provide accurately and truly the description and statement of the sample, shall guarantee to match the sample and real situation which they provided and declared. Otherwise the application shall bear any relevant consequences and responsibility.

3. 如委托方提供的样品及相关资料存在虚假、伪造等情形，所造成的全部后果和责任由委托方承担。
In case the sample and documents provided involved in the situation of fake and forgery, any consequences and responsibility caused by this shall be undertaken by applicant.

4. 本证明/报告全部或部分复制、私自转让、盗用、冒用、涂改或以其它任何形式篡改的均属无效，本单位将对上述行为严究其相应的法律责任。
The certificate/report can not be copied in whole or part, the copied version is invalid. The certificate is invalid in case of illegal transfer, reproduction, embezzlement, imposture, modification or any altering. PONY shall investigate the applicant's legal liability accordingly.

5. 本证明/报告不考虑国家及经营人差异。
The certificate/report takes no account of the differences of countries and applicants.

6. 本单位有权在完成证明/报告后处理委托方所送样品。
PONY has the right to dispose the provided sample after approval of the certificate/report.

▲防伪说明：

(1)报告编号是唯一的；

(2)报告采用特制防伪纸张印制，纸张表面带有“PONY”防伪纹路，该防伪纹路不支持复印，即复制件不会带有“PONY”防伪纹路；

(3)报告采用的防伪纸张内部亦加带有高科技“PONY”防伪水印，只有在验钞机等紫外线照射下方可显出无色荧光防伪字样。

扫微信二维码
关注谱尼测试

www.ponytest.com　Hotline 400-819-5688

北京实验室：(010)83055000
上海实验室：(021)64851999
青岛实验室：(0532)88706866
深圳实验室：(0755)26050909
天津实验室：(022)23607888
苏州实验室：(0512)62997900
长春实验室：(0431)85150908
大连实验室：(0411)87336618
哈尔滨实验室：(0451)58627755
郑州实验室：(0371)69350670
新疆实验室：(0991)6684186
石家庄实验室：(0311)85376660
西安实验室：(029)89608785
呼和浩特实验室：(0471)3450025
杭州实验室：(0571)85806807
宁波实验室：(0574)87977185
武汉实验室：(027)83997127
合肥实验室：(0551)63843474
广州实验室：(020)89224310
厦门实验室：(0592)5568048
成都实验室：(028)8770270

Material Safety Data Sheet

Reference to ST/SG/AC.10/30/Rev.8 (GHS)

Section 1 - Chemical Product and Company Identification

Chemical Product Identification

Sample Description: Li-ion Battery

Sample Model: 18650

Recommended Uses: N/A

Restrictions on Use: N/A

Supplier Name: SHENZHEN BOFUNENG BATTERY CO., LTD

Address: A Building Chunyang Industrial park, Zhugushi Road Wulian community Long Cheng Street,Longgang district, Shenzhen China

Phone Number: 0755-84642975

FAX: 0755-84642732

E-mail: aijuan_1425@126.com

Emergency Phone Number: 0755-84642975

Section 2 - Hazards Identification

Emergency overview: This product is a battery. Intended use of the product should not result in exposure to the chemical substance. In case of rupture the below hazards exist.

Classification according to GHS

Acute toxicity, oral (4)

Skin corrosion/irritation (2)

Serious eye damage/eye irritation (2A)

Specific target organ toxicity, single exposure; Respiratory tract irritation (3)

Label elements

Hazard pictogram(s):

Signal word: Warning

Hazard statement(s):

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation
H335 May cause respiratory irritation

Precautionary statement(s):

Prevention:

P264 Wash skin and clothing thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves, protective clothing, eye protection, face protection.
P261 Avoid breathing dust, fume, gas, mist, vapours, spray.
P271 Use only outdoors or in a well-ventilated area.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER if you feel unwell.
P330 Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty water.
P321 Specific treatment (See additional emergency instructions).
P333 + P313 If skin irritation or rash occurs: Get medical advice.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER, if you feel unwell.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Send contents to approved waste treatment plants.

Other hazards

Physical and chemical hazards: See Section 10
Human health hazards: See Section 11
Environmental hazards: See Section 12

Section 3 – Composition/Information on Ingredients

Chemical characterization: Mixture

Chemical Composition	CAS No.	EC#	Weight (%)
Cobaltate, lithium	12190-79-3	235-362-0	39.60
Aluminium	7429-90-5	231-072-3	5.56
Polyvinylidene fluoride resin	24937-79-9	607-458-6	1.15
Graphite	7782-42-5	231-955-3	23.2
Copper	7440-50-8	231-159-6	9.8
Rubber, styrene-butadiene, fume	61789-96-6	612-382-1	1.78
Polyethylene	9002-88-4	618-339-3	0.06
Polypropylene	9003-07-0	618-352-4	0.78
Phosphate(1-), hexafluoro-, lithium	21324-40-3	244-334-7	15.35
1,3-Dioxolan-2-one	96-49-1	202-510-0	2.72

Section 4 - First Aid Measures

Description of first aid measures

General information No special measures required.

After eye contact

Flush eyes with plenty of water for several minutes while holding eyelids open. Get medical attention if irritation persists.

After skin contact

Remove contaminated clothing and shoes. Immediately wash with water and soap and rinse thoroughly. Wash clothing and shoes before reuse. If irritation occurs, get medical attention.

After inhalation

Remove victim to fresh area. Administer artificial respiration if breathing is difficult. Seek medical attention.

After swallowing

Do not induce vomiting. Get medical attention.

Personal protective equipment for first-aid responders: No data available.

Most important symptoms/effects, acute and delayed: No data available.

Indication of immediate medical attention and special treatment needed: Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable extinguishing media:

Small Fire: Dry chemical, CO_2, water spray or regular foam. Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable extinguishing media:

No data available.

Specific Hazards arising from the chemical:

Special hazards arising from the substance or mixture

Battery may burst and release hazardous decomposition products when exposed to a fire situation. Lithium ion batteries contain flammable electrolyte that may vent, ignite and produce sparks when subjected to high temperature(>150℃(302℉)), when damaged or abused (e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in close proximity.

Specific protective actions for fire-fighters:

Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

Personal precautions:

As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. Keep unauthorized personnel away. Stay upwind, uphill and/or upstream. Ventilate closed spaces before entering. Large Spill: Consider initial downwind evacuation for at least 100 meters (330 feet).

Protective equipment:

No data available.

Emergency procedures:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Absorb with earth, sand or other non-combustible material. Leaking batteries and contaminated absorbent material should be placed in metal containers.

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Methods and materials for containment and cleaning up:

For all waste handing must refer to United Nations, National and Local Regulations for disposal.

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Section 7 - Handling and Storage

Precautions for safe handling:

Avoid short circuiting the battery. Avoid mechanical damage of the battery. Do not open or disassemble. Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps.

Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well-ventilated place. Keep away from heat, avoiding the long time of sunlight.

Section 8 - Exposure Controls/Personal Protection

Control parameters

CAS No.	ACGIH	NIOSH	OSHA
12190-79-3	N/A	N/A	N/A
7429-90-5	TLV-TWA 1mg/m^3	REL-TWA 2mg/m^3 REL-TWA 5mg/m^3 REL-TWA 10mg/m^3	PEL-TWA 5mg/m^3 PEL-TWA 15mg/m^3
24937-79-9	N/A	N/A	N/A
7782-42-5	TLV-TWA 2mg/m^3	REL-TWA 2.5mg/m^3	PEL-TWA 15mppcf PEL-TWA 20mppcf
7440-50-8	TLV-TWA 0.2mg/m^3 TLV-TWA 1mg/m^3	REL-TWA 1mg/m^3 REL-TWA 0.1mg/m^3	PEL-TWA 0.1mg/m^3 PEL-TWA 1mg/m^3
61789-96-6	N/A	N/A	N/A
9002-88-4	N/A	N/A	N/A
9003-07-0	N/A	N/A	N/A
21324-40-3	N/A	N/A	N/A
96-49-1	N/A	N/A	N/A

Appropriate engineering controls:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Personal Protective Equipment:

Respiratory protection: Wear suitable protective mask. For a large large number of battery leakages, wear chemical protective clothing, including self-contained breathing apparatus.

Hand Protection: Wear appropriate protective gloves to reduce skin contact.

Eye Protection: Wear safety goggles or eye protection combined with respiratory protection.

Skin and Body Protection: Working environment required, wear suitable protective clothing to minimize contact with skin. The type of protective equipment must be according to the concentration and the content of certain hazardous substances in the workplace.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Colour:	Blue.
Physical State:	Cylindrical
Odour:	Not available.
Odour threshold:	Not available.
pH:	Not available.
Melting point/freezing point:	Not available.
Initial boiling point and boiling range:	Not available.
Flash Point:	Not available.
Evaporation rate:	Not available.
Flammability (solid, gas):	Not available.
Explosion Limits (vol% in air):	Not available.
Vapour pressure, kPa at 20℃:	Not available.
Vapor density:	Not available.
Density/Relative density (water = 1):	Not available.
Solubility(ies):	Not available.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.

Viscosity:	Not available.
Other information:	
Voltage	3.7V
Electric capacity	2000mAh
Electric Energy	7.4Wh

Section 10 - Stability and Reactivity

Reactivity: No data available.

Chemical stability: Stable.

Possibility of hazardous reactions: No data available.

Conditions to Avoid: Flames, sparks, and other sources of ignition, incompatible materials.

Incompatible materials: Oxidizing agents, acid base.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

Section 11 - Toxicological Information

Acute Toxicity:

CAS No.	LC50/LD50
12190-79-3	No data available.
7429-90-5	No data available.
24937-79-9	No data available.
7782-42-5	No data available.
7440-50-8	No data available.
61789-96-6	No data available.
9002-88-4	No data available.
9003-07-0	No data available.
21324-40-3	No data available.
96-49-1	LD50 Rat (oral): 10g/kg

Skin corrosion/irritation: No data available.

Serious eye damage/irritation: No data available.

Respiratory or Skin sensitization: No data available.

Germ Cell mutagenicity: No data available.
Carcinogenicity: No data available.
Reproductive toxicity: No data available.
Specific target organ toxicity-Single exposure: No data available.
Specific target organ toxicity-Repeated exposure: No data available.
Aspiration hazard: No data available.
Information on the likely routes of exposure: No data available.
Eye: No data available.
Skin: No data available.
Ingestion: No data available.
Inhalation: No data available.

Section 12 - Ecological Information

Ecological Toxicity: No data available.
Persistence and degradability: No data available.
Bioaccumulative Potential: No data available.
Mobility in Soil: No data available.
Other adverse effects: No data available.

Section 13 - Disposal Considerations

Disposal methods:
Recommendation:
Consult state, local or national regulations to ensure proper disposal.

Uncleaned packaging
Recommendation: Disposal must be made according to official regulations.

Section 14 - Transport Information

UN Number	
IATA	UN3481
IMDG	UN3481
UN Proper shipping name	
IATA	Lithium ion batteries contained in equipment
IMDG	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT

Transport hazard class(es)	
IATA	9
IMDG	9
Packing group	
IATA	N/A
IMDG	N/A
Packaging Sign	
IATA	N/A
IMDG	N/A
Environmental hazards	
Marine pollutant:	No
Special precautions for user	No information available.

Transport information: The Li-ion Battery 18650 has passed the test UN38.3, according to the report ID: MZINTGSN10142721.

According to the Packing Instruction 967 section II of IATA DGR 61st Edition for transportation.

According to the special provision 188 of IMDG (39-18), the goods are not subject to other provision of this code.

Separate batteries to prevent short-circuiting. and they should be packed in strong package during transport. Lithium cell or battery should incorporate a safety venting device or be designed to prevent a violent rupture under normal transport conditions. Keep away from high temperature and open flames.

Note: Batteries weight in the package＜5kg. (By air, Batteries installed in equipment)

Transport Fashion: By air, by sea.

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

CAS No.	TSCA	IECSC	DSL/NDSL	EINECS/ ELINCS/ NLP
12190-79-3	Listed	Listed	Listed DSL	Listed

7429-90-5	Listed	Listed	Listed DSL	Listed
24937-79-9	Listed	Listed	Listed DSL	Listed
7782-42-5	Listed	Listed	Listed DSL	Listed
7440-50-8	Listed	Listed	Listed DSL	Listed
61789-96-6	Listed	Listed	Listed DSL	Listed
9002-88-4	Listed	Listed	Listed DSL	Listed
9003-07-0	Listed	Listed	Listed DSL	Listed
21324-40-3	Listed	Listed	Listed DSL	Listed
96-49-1	Listed	Listed	Listed DSL	Listed

Section 16 - Other Information

Issue Date: 2020-01-14

Issue Department: Technical department

Modification record:

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Other Information:

CAS: (Chemical Abstracts Service);

EC: (European Commission);

ACGIH: (American Conference of Governmental Industrial Hygienists);

NIOSH: (US National Institute for Occupational Safety and Health);

OSHA: (US Occupational Safety and Health);

TLV: (Threshold Limit Value)

TWA: (Time Weighted Average);

STEL: (Short Term Exposure Limit);

PEL: (Permissible Exposure Level);

REL: (Recommended Exposure Limit);

PC-STEL: (Permissible concentration-short time exposure limit);

PC-TWA: (Permissible concentration-time weighted average);
LC50: (Lethal concentration, 50 percent kill);
LD50: (Lethal dose, 50 percent kill);
IARC: (International Agency for Research on Cancer);
EC50: (Median effective concentration);
BCF: (Bioconcentration Factor);
BOD: (Biochemical oxygen demand);
NOEC: (No observed effect concentration);
NTP: (US National Toxicology Program);
RTECS: (Registry of Toxic Effects of Chemical Substances);
IATA: (International Air Transport Association);
IMDG: (International Maritime Dangerous Goods);
TDG: (Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations);
TOC: (Total Organic Carbon);
TSCA: (Toxic Substances Control Act of USA);
DSL: (the Domestic Substances List of Canada);
NDSL: (the Non-domestic Substances List of Canada)

End of report