SDS Report

No. SHAEC1816149201 Date: Aug. 7, 2018 Page 1 of 1

shaoxing shangyu Xinhua electrical appliance co.,ltd.
Xinzhai village, xiaoyue town, shangyu district , Shaoxing city, zhejiang province, China

SGS Ref. No.	:	SP18-024736-SH
Sample Name	:	Lithium-ion Battery
End Uses	:	Lithium battery plays a stable performance,so it is widely used in various electronic fields， such as portable lighting device, high-intensity flashlight, portable power supply,ect.
Composition/Ingredient of sample (as per client submission)	:	See *Section 3 Composition/information on ingredients* on the SDS report
Job Receiving Date	:	Jul 20, 2018
Last Information Date	:	Jul 31, 2018
SDS Preparation Period	:	Jul 20- Aug 03, 2018

Service Requested : Preparation of Safety Data Sheet (SDS) for the sample with submitted information.

Summary : As per request, the contents and formats of the SDS are prepared in accordance with European Commission Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008 and Regulation (EU) No 2015/830, and is provided per attached.

Remark:
This sample is likely to be classified as article with substances not intended to be released and is out of scope of a SDS as set out in Regulation (EC) No 1907/2006. This SDS is generated for client's reference only.

Substance Stainless steel (CAS No. 12597-68-1) is not classified in this SDS, as no information was found in company and literature data, and client cannot provide SDS(s) for classification.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Wei WANG, Terry
Approved Signatory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

3rd Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

Printing date 06.08.2018 Version number 1 Revision: 01.08.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**
· **Trade name: Lithium-ion Battery**

· **Article number:** 18650 3.7V 2800mAh

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the mixture:**
Lithium battery plays a stable performance,so it is widely used in various electronic fields ，such as portable lighting device, high-intensity flashlight, portable power supply,ect.

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
shaoxing shangyu Xinhua electrical appliance co.,ltd.
Xinzhai village, xiaoyue town, shangyu district , Shaoxing city, zhejiang province, China
Tel: 0575-82038968
E-mail: xinhua@zj-xh.com
· **Only Representative / other EU contact point:** Not available
· **Further information obtainable from:** shaoxing shangyu Xinhua electrical appliance co.,ltd.

· **1.4 Emergency telephone number:**
zhu bin
Tel: 13858580307

GERMANY
Poison Center Berlin - Institute of Toxicology
Tel: +49 030 192 40

· **1.5 Reference Number:** SP18-024736-SH; SHAEC1816149201

· **1.6 Remark:**
This sample is likely to be classified as article with substances not intended to be released and is out of scope of a SDS as set out in Regulation (EC) No 1907/2006. This SDS is generated for client's reference only.

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**


GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.


GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of Regulation (EC) No. 1272/2008.
· **Classification system:**
The classification is according to the latest edition of EU Regulation (EC) No. 1272/2008, and extended by company and literature data.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to CLP Regulation.
· **Hazard pictograms**


GHS07 GHS08

(Contd. on page 2)

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

Printing date 06.08.2018 *Version number 1* *Revision: 01.08.2018*

Trade name: Lithium-ion Battery

(Contd. of page 1)

· ***Signal word*** *Warning*

· ***Hazard-determining components of labelling:***
cobalt lithium dioxide
· ***Hazard statements***
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
· ***Precautionary statements***
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable*
· ***vPvB:*** *Not applicable*

SECTION 3: Composition/information on ingredients

· ***3.2 Mixtures***
· ***Description:***
Mixture of the substances listed below with nonhazardous additions.
For the wording of the listed hazard statements refer to section 16.

· ***Composition:***

CAS: 12190-79-3 *EINECS: 235-362-0*	*cobalt lithium dioxide* *Carc. 2, H351; Skin Sens. 1, H317*	*39.67%*
CAS: 12597-68-1	*Stainless steel*	*22.8%*
CAS: 7782-42-5 *EINECS: 231-955-3*	*Graphite* *substance with a Community workplace exposure limit*	*19.9%*
CAS: 7440-50-8 *EINECS: 231-159-6*	*copper* *substance with a Community workplace exposure limit*	*10.55%*
CAS: 7429-90-5 *EINECS: 231-072-3*	*aluminium* *substance with a Community workplace exposure limit*	*5.65%*
CAS: 24937-79-9	*Poly(vinylidene fluoride)*	*1.43%*

SECTION 4: First aid measures

· ***4.1 Description of first aid measures***
· ***After inhalation:***
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
· ***After skin contact:***
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· ***After eye contact:***
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· ***After swallowing:***
Rinse mouth with water.
Never give anything by mouth to an unconscious person.

(Contd. on page 3)

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

(Contd. of page 2)

Call for a doctor immediately.

· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear fully protective suit.
Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.
Keep away from ignition sources.
Avoid formation of dust.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Avoid contact with eyes.
Avoid contact with skin.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**
Pick up mechanically.
Dispose contaminated material as waste according to item 13.

· **6.4 Reference to other sections**
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

· **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Keep receptacles tightly sealed.
Open and handle receptacle with care.
Keep away from heat and direct sunlight.
Prevent formation of dust.
Avoid contact with skin and eyes.
Prevent short cut and movement which could lead to short circuits.
For the general occupational hygienic measures refer to section 8.
· **Information about fire - and explosion protection:** Keep respiratory protective device available.

· **7.2 Conditions for safe storage, including any incompatibilities:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:**
Store away from foodstuffs.
Do not store together with oxidising and acidic materials.
Do not store together with alkalis (caustic solutions).

(Contd. on page 4)

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

(Contd. of page 3)

Keep away from ignition sources.

· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.

· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
7782-42-5 Graphite (19.9%)	
AGW (Germany)	Long-term value: 1.25* 10** mg/m³ 2(II);*alveolengängig**einatembar; AGS, DFG
VME (France)	Long-term value: 2 mg/m³ pour la fraction alvéolaire
7440-50-8 copper (10.55%)	
MAK (Germany)	Long-term value: 0.01 A mg/m³ als Cu
VME (France)	Short-term value: 2** mg/m³ Long-term value: 0.2* 1** mg/m³ *fumées **poussières, en Cu
WEL (Great Britain)	Short-term value: 2** mg/m³ Long-term value: 0.2* 1** mg/m³ *fume **dusts and mists (as Cu)
7429-90-5 aluminium (5.65%)	
AGW (Germany)	Long-term value: 1.25* 10** mg/m³ 2(II);*alveolengängig**einatembar; AGS, DFG
VME (France)	Long-term value: 5* 10** mg/m³ *pulvérulent **métal
WEL (Great Britain)	Long-term value: 10* 4** mg/m³ *inhalable dust **respirable dust

· **Regulatory information**
AGW (Germany): TRGS 900
VME (France): ED 984, 10.2016
MAK (Germany): MAK- und BAT-Liste
WEL (Great Britain): EH40/2011

· **DNELs:** Data not available

· **PNECs:** Data not available

· **Ingredients with biological limit values:**	
7429-90-5 aluminium	
BGW (Germany)	200 µg/l Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Aluminium

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Based on composition shown in Section 3, the following messures are suggested for occupational safety measure:**

· **Appropriate engineering controls:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.

(Contd. on page 5)

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

(Contd. of page 4)

See Section 7 for information about design of technical facilities.

· ***Personal protective equipment:***
· ***Respiratory protection:*** *Suitable respiratory protective device recommended.*
· ***Protection of hands:***

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· ***Material of gloves:***
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· ***Penetration time of glove material:***
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· ***Eye protection:***

Tightly sealed goggles

· ***Environmental exposure controls:***
Control measures must be made in accordance with Community environmental protection legislation.

SECTION 9: Physical and chemical properties

· ***9.1 Information on basic physical and chemical properties***	
· ***Appearance:***	
Form:	*Solid*
Colour:	*Black*
· ***Odour:***	*Slightly pungent odor*
· ***Odour threshold:***	*Data not available.*
· ***pH-value:***	*Data not available*
· ***Melting point/freezing point:***	*Data not available.*
· ***Initial boiling point and boiling range:***	*Data not available*
· ***Flash point:***	*Data not available*
· ***Flammability (solid, gas):***	*Date not available.*
· ***Auto-Ignition temperature:***	*Data not available*
· ***Decomposition temperature:***	*Date not available.*
· ***Self-igniting:***	*Data not available*
· ***Explosive properties:***	*Data not available*
· ***Explosion limits:***	
Lower:	*Data not available.*
Upper:	*Data not available.*
· ***Oxidising properties***	*Data not available*

(Contd. on page 6)

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

(Contd. of page 5)

· **Vapour pressure:**	Date not available.
· **Density:**	Data not available.
· **Relative density**	Data not available.
· **Vapour density**	Date not available.
· **Evaporation rate**	Data not available
· **Solubility in / Miscibility with water:**	Data not available
· **Partition coefficient: n-octanol/water:**	Data not available.
· **Viscosity:**	
Dynamic:	Data not available
Kinematic:	Data not available
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No decomposition if used according to specification.

· **10.2 Chemical stability** Stable under recommended storage conditions.

· **10.3 Possibility of hazardous reactions** No dangerous reactions known.

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:** No further relevant information available.

· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity** Based on available data, the classification criteria are not met.
· **LD/LC50 values relevant for classification:** Data not available
· **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
· **Serious eye damage/irritation:** Based on available data, the classification criteria are not met.
· **Respiratory or skin sensitisation:**
May cause an allergic skin reaction.
· **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
· **Carcinogenicity:**
Suspected of causing cancer.
· **Reproductive toxicity:** Based on available data, the classification criteria are not met.
· **STOT-single exposure:** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
· **Aspiration hazard:** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

(Contd. on page 7)

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

Printing date 06.08.2018 *Version number 1* *Revision: 01.08.2018*

Trade name: Lithium-ion Battery

(Contd. of page 6)

· ***12.5 Results of PBT and vPvB assessment***
· ***PBT:*** *Not applicable.*
· ***vPvB:*** *Not applicable.*

· ***12.6 Other adverse effects*** *No further relevant information available.*

· ***12.7 Additional ecological information:***
· ***General notes:***
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· ***13.1 Waste treatment methods***
· ***Recommendation***
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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

SECTION 14: Transport information

· ***14.1 UN-Number***	
· ***ADR/RID/ADN, IMDG, IATA***	*UN3480*
· ***14.2 UN proper shipping name***	
· ***ADR/RID/ADN, IMDG, IATA***	*LITHIUM ION BATTERIES*
· ***14.3 Transport hazard class(es)***	
· ***ADR/RID/ADN, IMDG, IATA***	
· ***Class***	*9 Miscellaneous dangerous substances and articles.*
· ***Label***	*9A*
· ***14.4 Packing group***	
· ***ADR/RID/ADN, IMDG, IATA***	*Not applicable*
· ***14.5 Environmental hazards***	*Not applicable.*
· ***14.6 Special precautions for user***	*Warning: Miscellaneous dangerous substances and articles.*
· ***Danger code (Kemler):***	*-*
· ***EMS Number:***	*F-A,S-I*
· ***Stowage Category***	*A*
· ***Stowage Code***	*SW19 For batteries transported in accordance with SP 376 or SP 377 Category C, unless transported on a short international voyage.*
· ***14.7 Transport in bulk according to Annex II of Marpol and the IBC Code***	*Not applicable.*
· ***14.8 Transport/Additional information:***	
· ***ADR/RID/ADN***	
· ***Limited quantities (LQ)***	*0*

(Contd. on page 8)

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

Printing date 06.08.2018 Version number 1 Revision: 01.08.2018

Trade name: Lithium-ion Battery

(Contd. of page 7)

· **Excepted quantities (EQ)**	Code: E0 Not permitted as Excepted Quantity
· **Transport category**	2
· **Tunnel restriction code**	E
· **IMDG**	
· **Limited quantities (LQ)**	0
· **Excepted quantities (EQ)**	Code: E0 Not permitted as Excepted Quantity
· **UN "Model Regulation":**	UN 3480 LITHIUM ION BATTERIES, 9A

SECTION 15: Regulatory information

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

· **MAK (German Maximum Workplace Concerntration)**

None of the ingredients is listed.

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **National regulations:**
· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

· **Other regulations, limitations and prohibitive regulations**

· **SVHC Candidate List of REACH Regulation Annex XIV Authorisation (27/6/2018)**

None of the ingredients is listed.

· **REACH Regulation Annex XVII Restriction (18/4/2018)**
See Section 16 for information about restriction of use.

None of the ingredients is listed.

· **REACH Regulation Annex XIV Authorization List (13/6/2017)**

None of the ingredients is listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

· **Relevant hazard statements**
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.

· **Classification according to Regulation (EC) No 1272/2008**

Skin sensitisation Carcinogenicity	The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

· **********

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, 1272/2008 and Regulation (EU) No 2015/830.

DISCLAIMER OF LIABILITY
The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

(Contd. on page 9)

Safety data sheet
Regulation (EC) No. 1907/2006 and 1272/2008

Printing date 06.08.2018 *Version number 1* *Revision: 01.08.2018*

Trade name: Lithium-ion Battery

(Contd. of page 8)

· ***Remark:***
This sample is likely to be classified as article with substances not intended to be released and is out of scope of a SDS as set out in Regulation (EC) No 1907/2006. This SDS is generated for client's reference only.

· ***Abbreviations and acronyms:***
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 2: Carcinogenicity – Category 2
· **********

End of document