

Safety Data Sheet (SDS)

For
HUNAN HUAHUI NEW ENERGY CO., LTD.
and for their product

Lithium ion battery

Model/type reference: HFC1650 700mAh 6.4V

Nominal Voltage.....: 6.4V

Typical Capacity.....: 700mAh, 4.48Wh

Weight.....: 48.282g

Preparation Date.....: May. 03. 2021

Compiled by (name+ signature): Mary Li

Approved by (name+ signature): Peter Wu

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product name: LITHIUM ION BATTERY

Model: HFC1650 700mAh 6.4V

Other means of identification

Synonyms:none

Recommended use of the chemical and restrictions on use

Recommended Use:Used in portabl electronic equipments;

Uses advisd against:

- a) Do not dismantle, open or shred secondary cells or batteries.
- b) Do not expose cells or batteries to heat or fire. Avoid storage in direct sunlight.
- c) Do not short-circuit a cell or a battery. Do not store cells or batteries haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.
- d) Do not remove a cell or battery from its original packaging until required for use.
- e) Do not subject cells or batteries to mechanical shock.
- f) In the event of a cell leaking, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with copious amounts of water and seek medical advice.
- g) Do not use any charger other than that specifically provided for use with the equipment.
- h) Observe the plus (+) and minus (–) marks on the cell, battery and equipment and ensure correct use.
- i) Do not use any cell or battery which is not designed for use with the equipment.
- j) Do not mix cells of different manufacture, capacity, size or type within a device.
- k) Battery usage by children should be supervised.
- l) Seek medical advice immediately if a cell or a battery has been swallowed.
- m) Always purchase the battery recommended by the device manufacturer for the equipment.
- n) Keep cells and batteries clean and dry.
- o) Wipe the cell or battery terminals with a clean dry cloth if they become dirty.
- p) Secondary cells and batteries need to be charged before use. Always use the correct charger and refer to the manufacturer's instructions or equipment manual for proper charging instructions.
- q) Do not leave a battery on prolonged charge when not in use.
- r) After extended periods of storage, it may be necessary to charge and discharge the cells or batteries several times to obtain maximum performance.
- s) Retain the original product literature for future reference.
- t) Use only the cell or battery in the application for which it was intended.
- u) When possible, remove the battery from the equipment when not in use.
- v) Dispose of properly.

Details of the supplier of the safety data sheet:

Supplier Name: HUNAN HUAHUI NEW ENERGY CO., LTD.

Address: No.7, TONGZIBA LANE, JINXIU RAOD, YIYANG, HUNAN

Telephone number of the supplier: 0086-0769-81601938

Emergency Telephone No.(24h): 0086-0769-81601938

Postcode: 413000

E-mail address: cq@huahuinewenergy.com

Emergency telephone number

Company Emergency Phone Number: 0086-0769-81601938

2. HAZARDS IDENTIFICATION

Classification

No harm at the normal use. If contact the Electrolyte liquid in the Lithium Polymer Battery, reference as follows:

Classification of the substance or mixture

Classification according to GHS

Self-heating substances and mixtures (Hazard category 2)

Acute Toxicity, Oral(Hazard category 4)

Acute Toxicity, Dermal(Hazard category 3)

Skin, irritate(Cagegory 1B)

Eye Irritate (Hazard category 1)

GHS Label elements, including precautionary statements:



GHS02



GHS05



GHS06

Signal word: Warning

Hazard statement(s):

H252: Self-heating in large quantities; may catch fire;

H311: Toxic in contact with skin;

H314: Causes severe skin burns and eye damage;

H302: Harmful if swallowed;

precautionary statements:

Prevention:

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P312: Call a Poison center or doctor/physician if you feel unwell.

P302+P350-IF ON SKIN: Gently wash with plenty of soap and water

P301+P330+P331-IF SWALLOWED: rise mouth. Do NOT induce vomiting

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

None

Disposal

P501: Dispose of contents/container in accordance with local/national regulations

Hazards not otherwise classified (HNOC)

Not Applicable

Other information

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterixation: Mixtures

Description:

Product: Consisting of the following components.

Common Chemical Name	Concentration (%)	CAS Number
Ferrous Phosphate lithium	40	15365-14-7
Graphite	25	7782-42-5
Aluminum	5	7429-90-5
Copper	10	7440-50-8
Phosphate(1-), hexafluoro-, lithium	15	21324-40-3
Polyvinylidene fluoride resin	5	24937-79-9

Note: CAS number is Chemical Abstract Service Registry Number.

N/A=Not apply.

4. FIRST-AID MEASURES

First aid measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact Remove contaminated clothing and shoes. Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion Do NOT induce vomiting. Drink plenty of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

Swallowing Do not induce vomiting. Get medical attention.

Most Important Symptoms/Effects No information available.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

CO2, dry chemical powder, water spray.

Unsuitable Extinguishing Media:No information available.

Specific Hazards Arising from the Chemical

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Carbon monoxide(CO)

Carbon dioxide

Other irritating and toxic gases.

Hazardous Combustion Products

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/NIOSH (approved or equivalent) and full protective gear. For example: Wear self-contained respiratory protective device. Wear suitable protective clothing and eye/face protection.

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°C), When damaged or abused(e.g. mechanical damage or electrical overcharging); may burn rapidly with flare-burning effect; may ignite other batteries in clothes proximity.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with eyes.

Refer to section 8 for personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas.

Environmental precautions

Environmental Precautions Refer to protective measures listed in Sections 7 and 8.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning up Use personal protective equipment. Dam up. Cover liquid spill with sand, earth or other Non combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wear personal protective equipment.

Wash thoroughly after handling. Use this material with adequate ventilation.
The product is not explosive.

Conditions for safe storage, including any incompatibilities

If the LITHIUM ION BATTERY is subject to storage for such a long term as more than 3 months, it is recommended to recharge the Lithium-ion Polymer Battery periodically.

3 months: -10°C~+40°C, 45 to 85%RH

And recommended at 0°C~+35°C for long period storage.

The capacity recovery rate in the delivery state (50% capacity of fully charged) after storage is assumed to be 80% or more.

The voltage for a long time storage shall be 3.60V~4.25V range.

Do not storage LITHIUM ION BATTERY haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects.

Keep out of reach of children.

Do not expose Lithium-ion Polymer Battery to heat or fire. Avoid storage in direct sunlight.

Do not store together with oxidizing and acidic materials.

Keep ignition sources away- Do not smoke.

Store in cool, dry and well-ventilated place.

Incompatible Products None known.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control parameters

Ingredients with limit values that require monitoring at the workplace:	
Ferrous Phosphate lithium 15365-14-7	
TLV (USA)	0.02mg/m ³
MAK (Germany)	0.1mg/m ³

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962(11th Cir., 1992).

Appropriate engineering controls

Engineering Measures Showers

Eyewash stations

Ventilation systems

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Ensure adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye/Face Protection:



Tightly sealed goggles

Body protection:

Protective work clothing.

Skin protection:



Protective gloves

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.

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.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Form: Prismatic	
	Color: BLUE	
	Odour: Odourless	
	Odor Threshold: No information available	
Change in condition:		
pH, with indication of the concentration		Not determined.
Melting point/freezing point		Not determined.
Initial boiling point and Boiling range:		Not determined.
Flash Point		Not determined.
Evaporation rate		Not determined.
Flammability (solid, gas)		Not determined.
Upper/lower flammability or explosive limits		Not determined.
Vapor Pressure:		Not determined.
Vapor Density:		Not determined.
relative density:		Not determined.
Solubility in Water:		Not determined.
Solubility in other solvents		Not determined.
n-octanol/water partition coefficient		Not determined.
Auto-ignition temperature		Product is not self-igniting.

Decomposition temperature	Not determined.
Odour threshold	Not determined.
Evaporation rate	Not determined.
Viscosity	Not determined.
Other Information	No further relevant information available.

10. STABILITY AND REACTIVITY

Reactivity: Stable under recommended storage and handling conditions (see section 7, Handling and storage).

Chemical stability: Stable under normal conditions of use, storage and transport.

Thermal decomposition/conditions to be avoided: No decomposition if used according to specifications.

Possibility of Hazardous Reactions: None under normal processing.

Hazardous Polymerization: Hazardous polymerization does not occur.

Conditions to avoid: Strong heating, fire, Incompatible materials.

Incompatible materials: Strong oxidizing agents. Strong acids. Base metals.

Hazardous Decomposition Products: Carbon oxides, Other irritating and toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: No data available.

LD/LC50 values relevant for classification:

Not available.

Skin corrosion/irritation: No irritant effect.

Serious eye damage/irritation: Cause serious eye irritation.

Respiratory or skin sensitization: No sensitizing effects known.

Specific target organ system toxicity: No information available.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): No information available.

12. Ecological Information

Toxicity:

Aquatic toxicity:

No further relevant information available.

Persistence and degradability: No further relevant information available.

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects: No information available.

13. DISPOSAL CONSIDERATIONS

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.

14. TRANSPORT INFORMATION

Land transport

ADR/RID class: Not regulated.

UN-Number: UN3480 or UN3481.

Maritime transport

IMDG Class: Class 9.

UN Number: UN3480 or UN3481.

Marine pollutant: No

Air transport

ICAO/IATA Class: Class 9

UN/ID Number: UN3480 or UN3481

Environmental hazards: Not applicable.

Special precautions for user: Not applicable.

Transport/Additional information: Not restricted goods according to the above specifications.

The LITHIUM ION BATTERY had been tested according to the requirements of the UN manual of tests and Criteria, Part III, subsection 38.3;

The LITHIUM ION BATTERY was protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit;

The LITHIUM ION BATTERY according to Section II/Section IB of PACKING INSTRUCTION 965, or Section II of PACKING INSTRUCTION 966~967 of the 2021 IATA Dangerous Goods regulations 62nd Edition may be transported. and applicable U.S. DOT regulations for the safe transport of LITHIUM ION BATTERY.

Meets requirements of DOT Special Provision 188 to be transported as non-dangerous goods (Prior to the deadline set by HM 224F, February 6, 2015)

Meets the requirements of 49CFR173.185 to be transported as non-dangerous goods for road, rail, air, and vessel (Effective August 6, 2014 per HM224F)

Meets the requirements of TDG special provision 34 to be transported as non-dangerous goods.

The package must be handled with care and that a flammability hazard exists if the package is damaged;

15. REGULATORY INFORMATION

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

EU Regulation:

Authorisations: No information available.**Restrictions on use:** No information available.**Regulatory information**

CAS No.	EU (EINECS)	US (TSCA)	Japan (ENCS)	Canada (DSL/ NDSL)	Australia (AICS)	Korea (ECL)	China (IECSC)
15365-14-7	Listed	Not listed	Not listed	NDSL	Not listed	Not listed	Not listed
7782-42-5	Listed	Listed	Listed	DSL	Listed	Listed	Listed
7429-90-5	Listed	Listed	Listed	DSL	Listed	Listed	Listed
7440-50-8	Not listed	Listed	Not listed	DSL	Listed	Listed	Listed
21324-40-3	Not listed	Listed	Not listed	DSL	Listed	Listed	Listed
24937-79-9	Listed	Listed	Listed	DSL	Listed	Listed	Listed

Chemical safety assessment A Chemical Safety Assessment has not been carried out.**16. OTHER INFORMATION**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases:

R20/22: Harmful by inhalation and if swallowed.

R36: Irritating to eyes.

H302: Harmful if swallowed.

H332: Harmful if inhaled.

*****End of SDS*****

SAFETY DATA SHEET

Date of issue 25-07-2019

Canada/English

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Lithium Ion Polymer Battery SDL-721515

Other means of identification

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Uses advised against No information available

Details of the supplier of the safety data sheet

Initial supplier identifier Shida Battery Technology Co., Ltd.

Address Xingye Road 30, Shishan Industrial Park, Nanhai District, Foshan City, Guangdong.
P.R.China

Telephone +86-0757-86688555

E-mail zhaom@shida-batteries.com

Emergency telephone number

Company Emergency Phone Number +86-0757-86688555

2. HAZARDS IDENTIFICATION

Classification

This is a battery. In case of rupture:

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Danger

Hazard statements

This is a battery. In case of rupture:

Causes skin irritation
Causes serious eye irritation
Suspected of causing cancer
Causes damage to organs through prolonged or repeated exposure



Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not breathe dust/fume/gas/mist/vapors/spray
Do not eat, drink or smoke when using this product

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Skin

IF ON SKIN: Wash with plenty of water and soap
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash it before reuse

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

Very toxic to aquatic life with long lasting effects

Unknown acute toxicity 30.9 % of the mixture consists of ingredient(s) of unknown toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable.

Mixture

Chemical name	CAS-No	Percent (%)	Hazardous Material	Date HMIRA filed and
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			Information Review Act registry number (HMIRA registry #)	date exemption granted (if applicable)
Lithium Cobalt Oxide	12190-79-3	33.28	-	-
Polyvinylidene Fluoride(PVDF)	24937-79-9	4.5	-	-
Aluminium(Al)	7429-90-5	8.50	-	-
Graphite	7782-42-5	17.55	-	-
Styrene-Butadiene Rubber(SBR)	9003-55-8	1.32	-	-
Carboxymethyl cellulose	9000-11-7	0.88	-	-
Copper (Cu)	7440-50-8	11.93	-	-
Lithium Hexafluorophosphate	21324-40-3	13.80	-	-
Polyethylene	9002-88-4	7.02	-	-
Ethylene-Propylene-Diene Monomer	24937-16-4	1.22	-	-

4. FIRST AID MEASURES

First aid measures

General advice	First aid is upon rupture of sealed battery. IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	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. Get medical attention if irritation develops and persists. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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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	No information available.
Hazardous Combustion Products	Carbon oxides.
Explosion Data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³
Graphite 7782-42-5	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³
Aluminum 7429-90-5	TWA: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 1.0 mg/m ³	TWA: 1 mg/m ³	TWA: 10 mg/m ³ TWA: 5 mg/m ³
Copper	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³	TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³

7440-50-8	TWA: 1 mg/m ³	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³	TWA: 1 mg/m ³
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

If splashes are likely to occur, wear safety glasses with side-shields.

Hand protection

Wear suitable gloves. Impervious gloves.

Skin and body protection

Wear suitable protective clothing. Long sleeved clothing.

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.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Solid
Appearance	No information available
Odor	No information available
Color	No information available
Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
pH	No data available	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water Solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water	0	
Autoignition temperature	No data available	None known
Decomposition temperature	None known	
Kinematic viscosity	None known	

Dynamic viscosity	None known
Explosive properties	No information available.
Oxidizing properties	No information available.

Other Information

Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous Polymerization	Hazardous polymerization does not occur.
Conditions to avoid	None known based on information supplied.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous Decomposition Products	Carbon oxides.

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 In case of rupture:
Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). Irritating to eyes.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on toxicological effects

Symptoms	Redness. May cause redness and tearing of the eyes.
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Numerical measures of toxicity

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 12,452.00 mg/kg
ATEmix (dermal) 9,132.00 mg/kg

Unknown acute toxicity 30.9 % of the mixture consists of ingredient(s) of unknown toxicity
30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Propylene carbonate	= 29000 mg/kg (Rat)	> 20 mL/kg (Rabbit)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Serious eye damage/eye irritation Classification based on data available for ingredients. Irritating to eyes.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity Classification based on data available for ingredients. Contains a known or suspected carcinogen.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Lithium Cobalt Oxide (CoLiO ₂) 12190-79-3	A3	Group 2B	Reasonably Anticipated	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

NTP (National Toxicology Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
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Copper	96h EC50: 0.031 - 0.054 mg/L (Pseudokirchneriella subcapitata) 72h EC50: 0.0426 - 0.0535 mg/L (Pseudokirchneriella subcapitata)	96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 mg/L (Pimephales promelas) 96h LC50: < 0.3 mg/L (Pimephales promelas) 96h LC50: = 0.112 mg/L (Poecilia reticulata) 96h LC50: = 0.3 mg/L (Cyprinus carpio) 96h LC50: = 0.8 mg/L (Cyprinus carpio)	-	48h EC50: = 0.03 mg/L
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Persistence and Degradability No information available.

Bioaccumulation

Component Information

Chemical name	Log Pow
Propylene carbonate	0.48

Mobility No information available.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. TRANSPORT 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 requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (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 batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

TDG Not regulated

<u>DOT</u>	NOT REGULATED
Proper Shipping Name	NON-REGULATED
Hazard Class	N/A
Emergency Response Guide Number	147

<u>MEX</u>	Not regulated
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<u>ICAO</u>	Not regulated
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<u>IATA</u>	Not regulated
Proper Shipping Name	NON REGULATED
Hazard Class	N/A

<u>IMDG/IMO</u>	Not regulated
Hazard Class	N/A
EmS-No.	F-A, S-I

<u>RID</u>	Not regulated
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<u>ADR</u>	Not regulated
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<u>ADN</u>	Not regulated
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15. REGULATORY INFORMATION

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

International Regulations

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

<u>NFPA</u>	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties -
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HMIS **Health hazards** 0 **Flammability** 0 **Physical hazards** 0 **Personal Protection** X

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

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Revision Note No information available

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 a 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 text

End of Safety Data Sheet

Inhalation Statement	dust
Not Hazardous	This is a battery. In case of rupture:
Hazard statements	Causes damage to organs through prolonged or repeated exposure
Signal word	Danger
Precautionary Statements	P302 + P352 - IF ON SKIN: Wash with plenty of water and soap P321 - Specific treatment (see supplemental first aid instructions on this label) P332 + P313 - If skin irritation occurs: Get medical advice/attention 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/attention P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face protection P308 + P313 - IF exposed or concerned: Get medical advice/attention P405 - Store locked up P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P314 - Get medical advice/attention if you feel unwell P501 - Dispose of contents/ container to an approved waste disposal plant
Signal word	Danger
Skin corrosion/irritation	Category 2
Hazard statements	Causes skin irritation
Signal word	Warning
Serious eye damage/eye irritation	Category 2A
Hazard statements	Causes serious eye irritation
Signal word	Warning
Carcinogenicity	Category 2
Hazard statements	Suspected of causing cancer
Signal word	Warning
Specific target organ toxicity (repeated exposure)	Category 1
Skin corrosion/irritation	- (H315)
Serious eye damage/eye irritation	- (H319)
Carcinogenicity	- (H351)
STOT - repeated exposure	- (H372)
STOT - repeated exposure	



Graphic



Graphic



Graphic



Hazard statements

Causes skin irritation Causes serious eye irritation Suspected of causing cancer Causes damage to organs through prolonged or repeated exposure

Hazard statements

H315 - Causes skin irritation H319 - Causes serious eye irritation H351 - Suspected of causing cancer H351 - Suspected of causing cancer H372 - Causes damage to organs through prolonged or repeated exposure H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements - EU (§28, 1272/2008)

P103 - Read label before use P280 - Wear face protection P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish P234 - Keep only in original container P303 - IF ON SKIN (or hair):

Precautionary Statements

IF ON SKIN: Wash with plenty of water and soap IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention If skin irritation occurs: Get medical advice/attention Take off contaminated clothing And wash it before reuse Take off contaminated clothing and wash it before reuse Take off contaminated clothing And wash it before reuse Take off contaminated clothing and wash it before reuse IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention If eye irritation persists: Get medical advice/attention Obtain special instructions before use Obtain special instructions before use Do not handle until all safety precautions have been read and understood Do not handle until all safety precautions have been read and understood Wear protective gloves Wear protective gloves IF exposed or concerned: Get medical advice/attention IF exposed or concerned: Get medical advice/attention Store locked up Do not breathe dust/fume/gas/mist/vapors/spray Do not breathe dust/fume/gas/mist/vapors/spray Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product Do not eat, drink or smoke when using this product Get medical advice/attention if you feel unwell Get medical advice/attention if you feel unwell

Skin

IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse

Precautionary Statements

P302 + P352 - IF ON SKIN: Wash with plenty of water and soap P321 - Specific treatment (see supplemental first aid instructions on this label) P332 + P313 - If skin irritation occurs: Get medical advice/attention 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/attention P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P280 - Wear protective gloves/protective clothing/eye protection/face protection P308 + P313 - IF exposed or concerned: Get medical advice/attention P405 - Store locked up P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P314 - Get medical advice/attention if you feel unwell P501 - Dispose of contents/ container to an approved waste disposal plant

Precautionary Statements - Prevention

Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wear protective gloves/protective clothing/eye protection/face protection Wash face, hands and any exposed skin thoroughly after handling Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention Specific treatment (see supplemental first aid instructions on this label)

Eyes	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention
Skin	IF ON SKIN: Wash with plenty of water and soap If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before reuse
Precautionary Statements - Storage	Store locked up
Precautionary Statements - Disposal	Dispose of contents/container to an approved waste disposal plant
The following values are calculated based on chapter 3.1 of the GHS document	
ATEmix (oral)	12,452.00
Units	mg/kg
ATEmix (dermal)	9,132.00
Units	mg/kg
Contains Carbon black, Phosphate(1-), hexafluoro-, lithium	
Unknown acute toxicity	90.77 % of the mixture consists of component(s) of unknown hazards to the aquatic environment
Unknown Acute Aquatic Toxicity	90.77
Unknown Chronic Aquatic Toxicity	90.77
Product ATE Oral Status	1
Product ATE Dermal Status	1
Product ATE Inhalation - Gas Status	1
Product ATE Inhalation - Vapor Status	1
Product ATE Inhalation - Dust/Mist Status	1
Product Skin Corrosion Status	1
Product Eye Damage Status	1
Product Respiratory Sens. Status	1
Product Skin Sensitization Status	1
Product Mutagenic Status	1
Product Carcinogenic Status	1
Product Reproductive Toxicity Status	1
Product STOT Single Status	1
Product STOT Repeated Status	1
Product Aquatic Toxicity Status	1
Product Aspiration Toxicity Status	1
Product Ozone Status	1
Product and Component Overall	1
Classification Status	
STOT - repeated exposure	- (H372)
Unknown acute toxicity	30.9 % of the mixture consists of ingredient(s) of unknown toxicity
	30.9 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
	30.9 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
	30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
	30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
	30.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)
Symbols/Pictograms	
Symbols/Pictograms	
Other hazards	Very toxic to aquatic life with long lasting effects
Health hazards	Skull and Crossbones
Health hazards	Exclamation mark
Inhalation Statement	dust
Health hazards	1
