Safety Data Sheet

Section 1- Product and company identification

(a) Product identifier

Product name: Lithium-ion Cylindrical Battery

(b) Other means of identification

Product description: Model:18500-1400mAh
Nominal Voltage:7.2V
Ampere-hour:1.4Ah
TypicalCapacity:1400mAh

(c) Recommended use of the chemical and restrictions on use

Recommended use: Battery.

Restriction on use: No information available.

(d) Details of the supplier of the product

Company name(China) Huizhou Highpower Technology CO., LTD.
Address: Xinhu Industrial Zone, Ma'an Town, Huicheng District, Huizhou, Guangdong, China
E-mail: zcliu@highpowertech.com
Telephone: +86-752-5807919

(e) Emergency phone number +86-752-5807919

Section 2- Hazards identification

(a)Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.

(b) Classification of the substance or mixture

Classification according to GHS
Acute toxicity-oral (Hazard category 4)
Acute toxicity-dermal (Hazard category 4)
Skin corrosion / irritation (Hazard category 1A to 1C)
Skin corrosion / irritation (Hazard category 2)
Eye damage / irritation (Hazard category 1)
Eye damage / irritation (Hazard category 2B)
Substances and mixtures which, in contact with water, emit flammable gases (Hazard category 3)

(c) Label elements

GHS Label elements, including precautionary statements:


GHS02


GHS05


GHS06

(d) Signal word: Warning

(e) Hazard statement(s):
H242: Heating may cause a fire;
H311: Toxic in contact with skin;
H314: Causes severe skin burns and eye damage;
H302: Harmful if swallowed;
H319: Causes serious eye irritation
H351: Suspected of causing cancer
H317: May cause an allergic skin reaction

(f) 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.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid brething dust/fume/gas/mist/vapours /spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
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.
P337+P313 If eye irritation persists: Get medical advice/attention
P308+P313 If exposed or concerned: Get medical advice/attention
P302+P352 if ON SKIN: Wash with plenty of water
P333+P313 If skin irritation or rash occurs: Get medical advice/attention
P321 Specific treatment (see....on this label)
P362+P364 Take off contaminated clothing and wash it before reuse.

(g)Storage:
P405 Store locked up.

(h)Disposal
P501: Dispose of contents/container in accordance with local/national regulation**s**

(i)Hazards not otherwise classified (HNOC)
Not Applicable

(j)Other information
No information available.

Section 3- Composition/information on ingredients

Chemical name	CAS No.	Concentration%
NiCoMn	182442-95-1	＜40%
Polyvinylidene fluoride	24937-79-9	＜2%
Graphite Powder	7782-42-5	＜30%
Electrolyte	21324-40-3	＜20%
Polyethylene	9002-88-4	0.5-5%
Copper foil	7440-50-8	＜10%
Nickel	7440-02-0	0.5-5%
Aluninum foil	7429-90-5	0.5-5%

Section 4- First-aid measures

(a) Description of first aid measure

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice / attention if you feel unwell.

Skin contact: Remove contaminated clothes and rinse the skin with plenty of water. Get medical advice / attention if you feel unwell.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. Get medical advice / attention if you feel unwell.

Ingestion: Have victim drink 60 to 240 mL (2-8 oz.) of water. and DO NOT induce vomiting. Get medical aid.

(b) Most important symptoms/effects, acute and delayed

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

(c) Immediate medical attention and special treatment

No information available.

Section 5- Fire-fighting measures

(a) Extinguishing media

Suitable extinguishing media: Use foam, dry powder or dry sand, CO_2 as appropriate.

Unsuitable extinguishing media: No information available.

(b) Special hazards arising from the chemical

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO2, Metal oxides, Irritating fumes

(c) Special protective equipment and precautions for fire-fighters

Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filter mask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the

fire and the toxic gas. Put out 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.

Section 6- Accidental release measure

(a) Personal precautions, protective equipment and emergency procedures

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area, dispose the case after the batteries cool and vapors dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors.

(b) Methods and materials for containment and cleaning up

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

Section 7- Handling and storage

(a) Precautions for safe handling

Always follow the warning information on the batteries and in the manuals of devices. Only use the recommended battery types. Keep batteries away from children. For devices to be used by children, the battery casing should be protected against unauthorized access. Unpacked batteries shall not lie about in bulk. In case of battery change always replace all batteries by new ones of identical type and brand. Do not swallow batteries. Do not throw batteries into water. Do not throw batteries into fire. Avoid deep discharge. Do not short-circuit batteries Use recommended charging time and current.

(b) Conditions for safe storage, including any incompatibilities

If the Lithium-ion Polymer 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. Operating temperature: Charge: 0℃~45℃. Discharge: -20℃~60℃ And recommended at -20℃~45℃ for 1 month storage, at -20℃~35℃ for 3 months 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 7.2V~8.4V range. Do not storage Lithium-ion Cylindrical 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.

Section 8- Exposure controls/personal protection

(a) Appropriate engineering controls

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

(b) Personal protective equipment

Respiratory protection:	No personal respiratory protective equipment normally required. In case of inadequate ventilation wear respiratory protection.
Hand protection:	Wear protective gloves.
Eye/face protection:	No personal protective equipment normally required.
Skin/body protection:	Wear protective clothing to prevent contact.

Section 9- Physical and chemical properties

(a) Appearance	solid
(b) Odor	Monotony
(c) Odor threshold	Not available
(d) pH	Not available
(e) Melting point/freezing point	Not available
(f) Initial boiling point and boiling range	Not available
(g) Flash point	Not applicable
(h) Evaporation rate	Not applicable
(i) Flammability	Non flammable
(j) Upper/lower flammability or explosive limits	Not available
(k) Vapor pressure	Not applicable
(l) Vapor density	Not available
(m) Relative density	Not available
(n) Solubility(ies)	Insoluble in water
(o) Partition coefficient: n-octanol/water	Not available
(p) Auto-ignition temperature	130℃
(q) Decomposition temperature	Not available
(r) Viscosity	Not available

Section 10- Stability and reactivity

(a) Reactivity
Stable under recommended storage and handling conditions.
(b) Chemical stability
Stable under normal conditions
(c) Possibility of hazardous reactions
When heated above 150°C the risk of rupture occurs. Due to special safety construction, rupture implies controlled release of pressure without ignition.
(d) Conditions to avoid
Do not subject Lithium-ion n Battery to mechanical shock. Keep away from open flames, high temperature.
(e) Incompatible materials
Strong oxidizer, strong acid.
(f) Hazardous decomposition products
Under fire conditions, the electrode materials can form carcinogenic nickel and cobalt oxides.

Section 11- Toxicological information

(a) Information on the likely routes of exposure

Inhalation:	Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.
Ingestion:	Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.
Skin contact:	Contact with battery electrolyte may cause burns and skin irritation.
Eye contact:	

Contact with battery electrolyte possible.
may cause burns. Eye damage is
Under normal conditions (during charge and discharge) release of ingredients does not occur. If accidental release occurs see information in section 2, 3, and 4. Swallowing of a battery can be harmful. Call the local Poison Control Centre for advice and follow-up

(b) Information on toxicological characteristics

Acute toxicity:	The liquid in the battery irritates.
Skin corrosion/irritation:	The liquid in the battery may cause sensitization to
Serious eye damage/irritation:	some person.
Respiratory sensitization:	The liquid in the battery may cause sensitization to
Skin sensitization:	some person.
Carcinogenicity:	Cobalt and Cobalt compounds are considered to be possible human carcinogen(s).
Germ Cell Mutagenicity:	No data available.
Reproductive Toxicity:	No data available.
STOT-Single Exposure:	No data available.
STOT-Repeated Exposure:	No data available.
Aspiration Hazard:	No data available.
The liquid in the battery irritates.	No data available.

Section 12- Ecological information

(***a) Ecotoxicity***
Water hazard class 1(Self-assessment): slightly hazardous for water.
(b) Persistence and Degradability
No information available.
(b) Bioaccumulative potential
No information available.
(c) Mobility in soil
No information available.
(d) ***Other adverse effects***
No information available.

Section 13- Disposal considerations

(a) Safe handling and methods of disposal

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14- Transport information

According to PACKING INSTRUCTION 965~967 of IATA DGR 62nd Edition for transportation, the special provision 188 of IMDG (inc Amdt 35-10). The batteries should be securely packed and protected against short-circuits. Examine whether the package of the containers are integrate and tighten closed before transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles. Don’t put the goods together with oxidizer

and chief food chemicals. The transport vehicle and ship must be cleaned and sterilized otherwise it is not allowed to assemble articles. During transport, the vehicle should prevent exposure, rain and high temperature. For stopovers, the vehicle should be away from fire and heat sources. When transported by sea, the assemble place should keep away from bedroom and kitchen, and isolated from the engine room, power and fire source. Under the condition of Road Transportation, the driver should drive in accordance with regulated route, don't stop over in the residential area and congested area. Forbid to use wooden, cement for bulk transport.

(a) UN number	3480&3481
(b) UN Proper shipping name	LITHIUM ION BATTERIES (including lithium ion Cylindrical batteries) or; LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion Cylindrical batteries)
(c) Transport hazard class(es)	9
(d) Packing group (if applicable)	II
(e) Marine pollutant (Yes/No)	No
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)	No information available.
(g) Special precautions	No information available

(h) Organizations governing the transport of lithium batteries

Area	Method	Organization	Special Provision
U.S.A	Air, Rail, Road, Marine	DOT	49 CFR Section 173.185

Section 15- Regulatory information

(a) Safety, health and environmental regulations specific for the product in question

CAS No.	USA TSCA	EU EINECS	Japan ENCS	Korea ECL	China IECSC	Canada DSL
7782-42-5	Listed	Listed	Not listed	Listed	Listed	Listed
21324-40-3	Not listed	Listed	Listed	Listed	Listed	Not listed
9002-88-4	Listed	Listed	Listed	Listed	Listed	Listed
7440-50-8	Not listed	Listed	Listed	Listed	Listed	Not listed
7440-02-0	Not listed	Listed	Listed	Listed	Listed	Not listed
24937-79-9	Listed	Not listed	Listed	Listed	Listed	Listed
9003-07-0	Listed	Listed	Listed	Listed	Listed	Listed
7429-90-5	Listed	Listed	Listed	Listed	Listed	Listed
7440-21-3	Listed	Listed	Listed	Listed	Listed	Not listed
38891-59-7	Not listed	Not listed	Listed	Listed	Not listed	Not listed
9002-86-2	Listed	Not listed	Listed	Listed	Listed	Not listed
7440-57-5	Listed	Listed	Listed	Listed	Listed	Not listed
7440-31-5	Listed	Not listed	Listed	Listed	Listed	Not listed

Section 16- Other information, including date of preparation or last revision

(a) Preparation and revision information

Date of previous revision: Not applicable. Date of this revision:2021/1/28

Revision summary: The first New SDS

(b) Abbreviations and acronyms

TSCA: Toxic Substances Control Act, The American chemical inventory.
DSL: Domestic Substances List
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS Japanese Existing and New Chemical Substances
ECL: Existing Chemicals List, the Korean chemical inventory.
IECSC: Inventory of existing chemical substances in China.

(c) Disclaimer

Because all of our batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.