



Material Safety Data Sheet

Product Name:	Rechargeable Lithium-ion Polymer Battery
Model:	HTT-104
Revision Date:	July. 31, 2018
Report No.:	DGNP20180612MSDS01
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Material Safety Data Sheet

SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION

Name of Sample: Rechargeable Lithium-ion Polymer Battery	Model and Ratings: HTT-104 3.7V 3800mAh 14.06Wh
Company: Dongguan Knaptech Energy Technology Co.,Ltd	Address: Hehe Tian Building B, Hengkeng Third Industrial Zone, Liaobu Town, Dongguan City, Guangdong Province, 523000
Zip code: 523000	Fax: /
E-mail: jltian@knaptech.com.	Emergency Telephone: 0769-22869971

SECTION 2 – 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.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENT

Ingredient	CAS No.	Concentration(%)
LITHIUM COBALT OXIDE	12190-79-3	35.4
Graphite	7782-42-5	11.07
Lithium hexafluorophosphate	22324-40-3	5.93
Polyvinylidene Fluoride	24937-79-9	3.5
1-Cyclopentene-1-carboxylic acid, 2-cyano-, methyl ester (7CI, 9CI)	9000-55-8	2
1-Methyl-2-pyrrolidinone	872-50-4	54
SBR	9003-55-8	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.

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 staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defend 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 terminals 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 short-circuited battery can cause skin burn.
6. The batteries should not be opened, destroyed or incinerated, 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:

Silver

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



<p>Conditions to Avoid: Fire source, heating source, disassemble, external short circuit, crushes, deformation, high temperature above 100°C, direct sunlight and high humidity, immerse in water or overcharge.</p>
<p>Hazardous Polymerization: Will not occur.</p>
<p>Hazardous Decomposition Products: Metal oxides, CO, CO₂</p>

SECTION 11 – TOXICOLOGICAL INFORMATION

<p>Acute Toxicity: N/A</p>
<p>Sub-acute and Chronic Toxicity: N/A</p>
<p>Irritation Data: The internal battery materials may cause irritation to eyes and skin.</p>
<p>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.</p>
<p>Mutagenicity: No information is available.</p>
<p>Carcinogenicity: No information is available.</p>
<p>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.</p>

SECTION 12 – ECOLOGICAL INFORMATION

<p>Eco-toxicity: No data available.</p>
<p>Biodegradable: No data available.</p>
<p>Mobility in soil: No data available.</p>
<p>Bioconcentration or biological accumulation: No data available.</p>
<p>Other harmful effects: Don't abandon the battery into environment, may cause water or soil pollution.</p>

SECTION 13 - DISPOSAL CONSIDERATIONS

<p>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.</p>
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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 59 th 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 38-16) according to special provision 188.

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:

2018-07-31

Department:

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Other Information:

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