

HAOCHENG GROUP

HCB BATTERY CO., LTD.

Safety Instructions
for Primary Lithium Battery

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Hazards Identification

Classification: Class 9, miscellaneous.

Exposure way: Eye and skin contact, inhalation of the battery materials.

Health hazard: No specific toxicological study. Avoid direct contact with the battery materials. Avoid inhalation.

Environmental hazard: No known environmental hazard.

Combustion hazard: Do not heat over 85°C, do not deform, destroy, disassemble, overcharge, short-circuit which may cause explosion.

Risks and Health hazard:

Risks: Explosion, leakage/emission, fire.

Toxic materials: Strong acidic gas, strong acid, flammable gas/liquid.

Health risk: Eye, skin, Inhalation, ingestion, bleeding.

Exposure individuals: Operators related to storage, assembly, transport, testing, disposal, etc.

Guidance for Acceptance Tests

- ◆ Acceptance tests & storage should be done by authorized employees (Get a safety training once a year)
- ◆ Batteries should be transported well insulated in the original packaging.
- ◆ Cover metal surfaces with an insulating material and make sure that they are clean and free of sharp objects that could puncture the insulation sleeve on each cell.
- ◆ All personnel handling batteries should remove jewelry items such as rings, wristwatches, pendants, etc., that could come in contact with the battery terminals.
- ◆ All inspection tools should be made from , or covered with, a non-conductive material such as plastic.
- ◆ Batteries should inspected for physical damage (corrosion, blows, leaks, etc.). Batteries with dented cases or terminal caps should be inspected for electrolyte leakage. If any is noted, they should be disposed of properly.
- ◆ Batteries tests should be done in a ventilated chamber.
- ◆ A battery must be insulated and separated from the other one.
- ◆ An over-temperature controller to protect against excessive heat.
- ◆ Cut the leads of the battery one by one, cutting both leads at the same time with short-circuit the battery
- ◆ Batteries should be stored in a cool dry place and away from combustible materials.

Guidance for Storage

Fresh Batteries

1. Batteries should be stored in a cool dry place where temperature under 30°C while humidity under 75%RH
2. Batteries should be kept away from combustible materials, sunshine, heater, etc.

Batteries to Be Disposed

1. Batteries must be stored in a particular area.
2. Dispose the batteries as soon as possible.
3. Batteries should be well insulated from each other.

Safety Instructions

- ◆ Read the safety instructions before use.
- ◆ Do not connect the batteries of different chemical systems, sizes, manufacturers, lots, remaining capacity, etc.
- ◆ Do not short-circuit.
- ◆ Do not incinerate or heat.
- ◆ Do not crush, recharge, dismantle, puncture, etc.
- ◆ Do not use batteries with corrosion.
- ◆ Do not store the batteries in the device for long time.
- ◆ Do not use batteries with dent or damage, heating, leakage
- ◆ Do not put it in water.
- ◆ Do not reverse.
- ◆ Do not swallow.
- ◆ Do not weld the batteries for long time.
- ◆ Do not dispose.
- ◆ Do not connect batteries personally.
- ◆ Turn off the device in the case of gas emission, break the connection between batteries.
- ◆ Keep out of reach of children.

Guidance for Usage

Following operation can lead to short circuit

External short-circuit



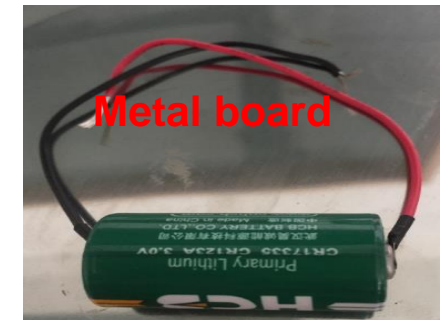
Do not connect the positive and negative terminals

Stored not orderly



Batteries with tags can cause short-circuit if batteries are stored disorderly

Putting batteries on top of metal



Use Guidance

Following actions can lead to short circuit

Reversing positive terminal and negative terminal
(Watch the terminal marks)



Watch the
direction of
connector

Using a batteries with broken insulation tube



Make sure the naked battery or wire will not contact PCB

Measures against Fire or Leakage

Measures against Leakage: For accidental leakage of the materials in the battery, use a clean shovel to collect the spill in a dry, clean, and capped disposable container. The disposal worker should wear appropriate protective clothing.

Extinguishing media: Dry chemical, Sandy soil, Carbon dioxide. Do not use water or foam.

Firefighting: Protective Equipment: Wear self-contained breathing apparatus and protective clothes to prevent contact with skin and eyes. Put out the fire from windward side.

Measures against Fire or Leakage

Fires Involving Lithium Batteries

1. In the event of lithium fire, the room could become filled with dense white smoke that could cause severe irritation to the respiratory tract, eyes & skin.
2. Lithium melts at 180 °C and then it becomes highly reactive. When ignited, lithium fires can throw off molten lithium metal particles.
3. Furthermore, batteries adjacent to any burning material could overheat causing a violent chain reaction that cause other battery to explosion.
4. The fire fighter should pay attention to the hazardous materials around the site.
5. After all materials has burned and cooled, carefully turn over the remaining residue and be prepared to extinguish, should re-ignition occur.

First Aid

Skin contact: In case of skin contact with the battery materials, wash the exposed area with soap and rinse with plenty of fresh water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention immediately.

Eye contact: In case of eye contact with the battery materials, lift the upper and lower eyelids, and immediately rinse the eyes with plenty of fresh water for at least 15 minutes to remove all the chemical residues. Get medical attention.

Inhalation: In case of inhalation of the battery materials, take the exposed person outside. If breathing is irregular, provide oxygen and get medical attention immediately.

Ingestion: In case of ingestion of the battery materials, do not induce vomiting. Get medical attention.

Measures for Recycle Batteries

- ◆ The recycle batteries must not be transported with disorder condition



- ◆ The batteries shall be insulated and separated , preferably to be placed in the original trays. The trays shall be bundled up with tapes and be loaded into cartons. Fill the space with foam or carton boards inside the carton to fix the trays.



Measures for Recycle Batteries

- ◆ The recycle batteries with tags shall be fixed in the tray with positive and negative terminals facing the same direction.

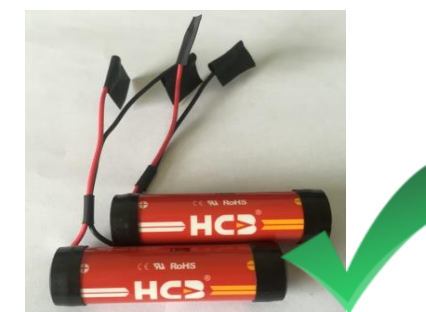


- ◆ When placing the batteries, make sure the tags or wires are not connected with

metal.

- ◆ Do not smoke at packing site.

- ◆ Ventilation devices should be equipped at packing site.



Measures for Environmental Protection

Disposal shall be conducted according to local regulations, as well as

Recommendations:

1. Do not dispose used batteries personally, do not incinerate.
2. Put waste batteries in salt water with 5% concentration for 1 month, and ask authorized organization to collect and dispose.

Regulations

- IATA Dangerous Goods Regulations Edition 58
- 38.3 UNITED NATIONS Recommendations on the TRANSPORT of DANGEROUS GOODS Manual of Tests and Criteria
- IMDG Code

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And Wisdom of 600 Persons
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