



Shenzhen Grepow Battery Co., LTD

Safety Manual of Lipo Battery

RD1 : Tan

Safety Storage Precautions

The Requirements for the Safety Management of the Warehouse

- ◆ Keep the temperature of the warehouse between 18°C and 25°C. The highest temperature Must NOT exceed 30°C.
- ◆ Make sure the ventilation systems are well equipped.
- ◆ The humidity of the warehouse is needed to be well-controlled to keep the the batteries from storing at an extreme humidity environment for a long time.

(Relative humidity of the warehouse is required to be higher than 65% or lower than 40%.)

- ◆ **Storage Single Cell Voltage : 3.80V~3.90V**
- ◆ **When storing the batteries, it is suggested to keep the boxes at a distance between 0.5m and 0.8m.**
- ◆ **Cycle charge the battery every 2 or 3 months at least to maintain its stability and longevity.**
- ◆ **Check if the warehouse meets the requirement of safety management everyday ONCE or TWICE.**
- ◆ **Battery warehouse MUST be equipped with smoke detectors, 24-hour shift is recommended. Warehouse personnel should be of good awareness of fire safety and a comprehensive fire fighting exercises of fire extinguisher using, emergency evacuation and others are required on a regular basis.**

How to Put out the Fire of LiPo Batteries.

- ◆ Cut off the power supply when the batteries on the charging tank are on fire. Find and wear asbestos gloves or using fire tongs to get the batteries off the charging tank. Then place them on the ground or sand bucket.
- ◆ Using asbestos mat to cover the flames of the LiPo
- ◆ Then using the fire-extinguishing sand to bury the asbestos mat and isolate the air.

The Attentions & How to Put out the Fire of LiPo Batteries.

- ◆ Warning
- ◆ **Not** allowed to put out the fire with **dry powder**. This would require a large amount of powder to put out the fire and it will pollute and corrode the equipments.
- ◆ Using carbon dioxide to put out the fire will not pollute or corrode the machines, but it can only control the spreading of the fire. Please use the fire-extinguishing sand and asbestos mat to put out the fire.

The Attentions & How to Put out the Fire of LiPo Batteries.

Attentions

- ◆ **Isolation of the air** is the best solution to putting out the fire of the Lipo.
- ◆ Put out the fire as soon as possible and contact the on-duty security guard to reduce property loss and injuries.

Safety Usage Precautions

Using the Batteries

Charging warnings

- ◆ When charging, keep the temperature between **10 °C and 45°C**.
- ◆ The charging current **MUST NOT** exceed the suggested charging current that noted on the manual. The standard charging rate is not over **2C**. lower charging rate will make battery with longer cycle life. Best charging rate is **0.5C-1C**.

- ◆ Do **NOT** charge the battery when it's puffing, shape changing, leaking or under **2.6V**. Do **NOT** charge the battery if the temperature of the battery cells exceeds **40°C** before charging.
- ◆ When charging, the ceiling voltage **MUST NOT** exceed **4.22V** and the temperature should **NOT** be higher than **45°C**.
- ◆ Please use a good quality charger that is made by reliable manufacturer. A charger with **balance** charging function is recommended.

Discharging warnings

- ◆ When discharging, keep the temperature between **5°C and 60°C**.
- ◆ The discharging current **MUST NOT** exceed the peak current that noted on the specification sheet.
- ◆ When discharging, the lower limit of the voltage should **not** be any lower than **3.0V** and the surface temperature of the battery should **not** be higher than **80°C** after a high current discharge.

Transportation warnings

- ◆ Make sure the batteries in the box are well packed to prevent collision during the transportation.

Do not use the battery cells if there's any damaged, swelling or liquid leakage. Any battery cells with liquid leakage or the smells should be kept away from the fire.

Other Warnings

- ◆ Do **NOT** cut the battery cells if you're not professional. The cutting may lead to internal short circuit, puffing, fire and other problems.
- ◆ If the electrolyte exposures to skin, eyes or other body parts, please **flush with water** and seek medical treatment immediately.
- ◆ Do **NOT** throw the battery cells into fire under any circumstances.
- ◆ Do **NOT** soak the battery cells in the liquid, such as freshwater, sea water or beverages.

Disposal of Disabled Batteries

- ◆ The dead batteries should be clearly marked and stored separately. Any charging or discharging is strictly prohibited. The place for temporary storing should be fireproof, such as storing in steel cabinet or metal bucket.
- ◆ Salt water soaking: Mix saltwater at the ratio of 1:20 and put the batteries into saltwater for two hours with a wide mouth container, such as basket or metal bucket(3 battery packs at most). And placing the container at an empty outdoor.
- ◆ The soaked dead batteries should be taken out with fire tongs and can be disposed as general solid wastes after making sure the batteries are no-voltage or no longer generating heat.

NOTE:

If the conditions allow, please contact professional Lithium battery recycling center to help to dispose the disabled/dead batteries.

Power from Grepow.

