LIPO / RECHARGEABLE

Battery Safety Guide

All Things RC
RC Hobby Specialist

Remote control products often use rechargeable batteries, which are volatile, can catch fire or explode, particularly Lithium Polymer (LiPo) batteries. They require extra safety measures, such as:

Charging

- Never allow children to charge a battery.
- Always fully charge batteries before first use.
- Never leave a battery unattended while on a charger.
- Always use a suitable charger in accordance with the instructions and ensure you set the correct voltage, current and other charge settings for the battery you are charging.
- When connecting a battery to a charger be sure that the correct polarity is observed.
- Always charge the battery in a fire-safe container like a LiPo safety bag, which is located in a well-ventilated area away from any flammable items or liquids. Do not charge batteries inside a car.
- Visually inspect the battery before charging it. If you think something may be wrong with the charger or battery such as excessive heat, a puncture or swelling, commence the disposal process.
- Do not charge a battery beyond a safe level. For LiPo's it is a maximum of 4.2 volts per cell.
- Do not discharge a battery beyond a safe level. For LiPo's it is generally 3.3 volts per cell, but definitely not lower than 3 volts per cell.
- Disconnect the battery from the charger as soon as it is fully charged.
- After use, allow the battery to rest and cool down for at least 10mins before charging.

We recommend using a quality balance charger such as the SkyRC S60, SkyRC E6650 or Redback Racing Spider 1 Max. Otherwise, you risk your battery becoming severely out of balance over time, which will significantly decrease its lifespan. When used correctly, a balance charger will help ensure that you do not overcharge or over-discharge the battery and that each cell is evenly charged.

Operation

- Never allow children to handle rechargeable batteries, especially LiPo batteries.
- Always fully charge batteries before first use.
- Refer to the instructions for your remote control vehicle and ESC regarding the cut-off voltage prior to first use to avoid accidentally over discharging and damaging your battery.
- Inspect the battery before each use. If damaged, commence the disposal process.
- Do not leave the battery connected to the vehicle while not in use. The battery can still discharge to an unsafe level and damage the battery even if all components are turned off.
- When connecting a battery to a product be sure that the correct polarity is observed.
- Never draw more power than the battery is rated for because it can overheat, catch fire or even explode. The temperature of a LiPo battery should not exceed 60 degrees Celsius. If it does you may need a LiPo that is rated to handle more power.
- Never leave batteries unattended after a crash until you are satisfied there is no damage.
- Turn the transmitter on first before the vehicle and off last after the vehicle is turned off.

Storage Environment

- In a safe environment away from children and animals.
- With a partial charge, never in a fully charged or discharged state. For Lipo batteries this is between 3.75 and 3.85 volts.
- In a fire-safe container like a LiPo safety bag, which is located in a dry and well-ventilated area away from any flammable items or liquids.
- In an area where the temperature is between 10 to 25 degrees Celsius.

Maintenance

Storing rechargeable batteries, particularly LiPo batteries, for prolonged periods can cause the battery to swell, get severely out of balance, or even go dead. So, at least once per month:

- Inspect your battery and look for warning signs that something may be wrong, such as, punctures, cracks, uneven cell voltages, excessive heat and swelling. If the battery is damaged, commence the disposal process.
- Use a volt meter to check the voltage of each battery cell to ensure it is balanced and is still holding the appropriate storage charge - if it isn't, run the battery through a charge cycle to get it back balanced and to a storage charge level. If you don't have a volt meter, go to your local hobby shop and see if they are able to do it for you.

LiPo Battery Disposal

- If the battery is not damaged, connect it to your charger and put it on a very slow discharge cycle until the battery is completely drained or as low as the charger will allow.
- Once the battery is fully discharged and in the case of all damaged batteries, submerge the battery in a plastic container (do not use a metal container) of cold salt water (approximately 1/2 cup of salt per 3.7 litres of water). Leave the battery in the salt water for about two weeks.
- After two weeks of being in salt water, the battery can be removed, wrapped in newspaper and disposed of with your regular rubbish. Although discharged LiPo batteries are generally safe for landfill, your local council may have special rules around the disposal of LiPo batteries that you will need to follow.

Not following the instructions for the battery and charger, and this rechargeable battery safety guide may lead damage to the battery, damage to your RC products, fire or serious injury! It can also reduce the lifespan of the battery, which is usually between 300-400 charge cycles for LiPo batteries. You will be solely responsible for complying with these safety precautions and ensuring the general safe use, handling, storage and care of your batteries. If you are unable to strictly follow these safety precautions and any outlined by the manufacturer, please restrict your purchase of battery operated products to those that involve non-rechargeable batteries such as alkaline AA or AAA batteries only.