



## **Lithium-Polymer Battery for R/C**

### **Handling and Safety Instructions**

#### **WARNING!**

Read these instructions and follow them in regards to safely charging your Li-Po battery pack. The user will take the full responsibility for using and the results of using this battery pack. Trinity Products Inc. your point of purchase and any dealer/distributor of this battery will assume no responsibility for the use or misuse of this product and any damages or injuries that may occur.

Li-Po (Lithium-Polymer) batteries are designed to out perform Ni-Cd and Ni-MH batteries in the areas of weight, voltage and capacity, but greater care must be taken to insure safe use in regards to your vehicle, person and surroundings. The nature of Li-Po batteries is the capacity and performance gains comes at a cost in the areas of safety and maintenance. Used correctly your Li-Po battery pack will prove to be safe and reliable. The Li-Po technology requires special chargers and different ways of charging and caring for your battery pack than you have been accustomed to with Ni-Cd and Ni-MH. More care is required with Li-Po especially during charging and storing.

#### **WARNING!**

Li-Po batteries are unlike Ni-Cd and Ni-MH and cannot be charged, used, treated or stored in the same manner. The nature of the Li-Po battery pack is that the failure to follow the care and handling instructions provided can result in severe permanent damage to the battery pack, its surroundings, your person and it can even start a fire.

### **READ ENCLOSED INSTRUCTIONS FULLY BEFORE USE!**

#### **CHARGING:**

- Your Trinity Li-PRO battery pack has both a standard (Tamiya or Traxxas style) plug (large) and a mini balancing plug. The larger plug is used for fast charging and powering your vehicle. The small plug is used only for balance charging the pack which restores and conditions the cells and keeps your battery pack running to its full performance capacity longer.

We recommend balance charging this battery pack every couple of charges to keep the battery performing at its best.

- Never leave battery pack unattended at any time during charging. You must always charge your battery pack in fireproof location, which could be a metal container like a pail, pot or bucket of sand. Always keep "ABC" type

lithium approved fire extinguisher present.

- Charge only with a Li-Po compatible charger that has a constant current/constant voltage (cc/cv) circuit, (Trinity TRI22004). Never use a charger designed for Ni-Cd/Ni-MH. This will result in catastrophic failure of the battery that can result in serious fire and personal injury.

- Never charge battery in car, boat or plane. A hot battery pack could ignite foam, plastic or wood.

- Do not charge at currents greater then the battery packs 1C rating. A higher setting may cause fire. A 4500mAh pack has a 1C charge rate of 4.5 amps.

- To be safe do not charge this battery at more then 4 amps.

- Do not trickle charge your Li-Po batteries.

- Always use a Li-Po compatible charger that automatically detects the number of cells. Your Li-Po pack has 2 cells.

- Set chargers output to match the nominal rated voltage of the entire battery pack. In the case of this Li-Po racing battery that would be 7.4 volts. Charging higher than rated voltage will cause catastrophic failure of the battery and cause damage to the battery, its surroundings, and cause personal injury.

- Set the chargers charging current not greater than the batteries "1C" rating. Your 4500 mAh Li-Po battery pack has a 1C rating for charging at 4.5amps.

- Do not allow battery temperature to exceed 140°F /60°C while charging. Batteries, which exceed these temperatures more than likely, have become damaged and can possibly catch fire. Always inspect any battery pack than may have become over heated and if you suspect damage do not reuse.

- Discontinue charging immediately if you see any smoke or swelling of the battery pack. This could cause the battery pack to rupture and leak. The chemicals used in Li-Po battery packs on exposure to the air may cause the chemicals to ignite. Disconnect battery and leave in a safe fireproof location for 60 minutes.

- Your Trinity Reference Li-PRO™ battery pack has a balanced charger input. This is to be used only with a balance charger like the (Trinity TRI22004) charger. This type of charger balances the cells making your battery more stable and higher performing. Make sure if balance charging you have a charger that will charge 2 cell packs. We recommend balance charging after every couple of cycles.

- Monitor battery pack through out entire charge cycle. Do not leave unattended.

- The small balance charger plug is used only for balance charging. Do not fast charge through this connection.

### **DISCHARGING:**

- Make sure you stop running as soon as vehicle slows down. Your Li-PRO battery pack has a (6.0V cutoff) discharge control circuit which will prevent over discharging your battery pack. This circuit will turn off battery pack when the voltage drops below the usable level.

- Do not discharge the batteries with current exceeding their specified maximum continuous discharge current (C), otherwise, it will cause the batteries to overheat and result in battery deterioration, burst, balloon or may even cause fire or explosion.

- Stop using or charging the battery immediately whenever a battery becomes damaged, gives off an odor, becomes discolored or deformed, starts to balloon or swell up, leaks, its temperature reaches over 160°F (71°C) or anything else abnormal occurs, disconnect the battery and observe it in a safe fire proof place.

- Never discharge Li-Po battery below the Lowest Discharge Voltage, as it may cause irreversible damage that will deteriorate the battery performance and cycle life. Stop using battery as soon as vehicle slows. Make sure speed control is set for Li-PO mode. This will shut off vehicle before battery voltage becomes too low.

- Discharge only in fireproof area.

### **DAMAGED BATTERIES:**

- Because of the nature of Li-Po technology batteries subjected to crash damage are much more dangerous than Ni-Cd or Ni-MH cells. The battery may appear to have no physical damage however there could be a delayed chemical reaction which could cause the battery to smolder, smoke and catch fire even an hour after subjected to a crash. After a crash remove battery and place in fireproof location for observation. Leave for 24 hours for safety.

- Inspect battery packs for even the smallest crack, split, puncture or any damage to wires or connectors.

- Cells may get hot. DO NOT ALLOW the batteries electrolyte to get in eyes or on your skin. Wash affected areas immediately. If

splashed in eyes flush with large amounts of water for 15 minutes and seek medical attention immediately.

**STORAGE:**

- For long-term storage charge battery fully and discharge to 50 to 60% capacity.
- Always store batteries in fireproof container.
- Store battery at room temperature in cool shaded area.
- Store battery in temperature between 40 to 75°F.
- Store battery out of direct sunlight and away from any liquids. Do not let battery get wet.
- Never transport batteries in your pit box or R/C vehicle. Always transport in fireproof container.
- Make sure all plugs and connectors are covered to prevent accidental shorting.
- Never leave your Li-Po battery pack in your automobile as temperatures can easily exceed 120°F damaging your battery.

**HANDLING:**

- Never charge or discharge your Li-Po battery pack around combustible materials.
- Never carry battery pack or loose Li-Po cells in pocket of clothing.
- Never store batteries near heat or open flame.
- Never allow battery to come in contact with water. If battery becomes wet wipe off immediately with rag.
- Never solder to battery pack. Soldering to Li-Po cells has to be done by professional Li-Po battery assemblers under controlled conditions.
- Never assemble Li-Po battery with any other Li-Po or other type of battery pack.
- Never disassemble, alter, modify, puncture, mechanical shock, crash and/or short

the battery, it may cause leakage, smoke emissions, ignition, explosion and even fire, which may result in personal injury and property damage.

- Never charge without “ABC type” Lithium approved fire extinguisher readily available in case of fire.
- Keep all metallic objects away from battery pack. Shorting battery pack can cause fire and personal injury.
- If battery pack becomes overheated immediately put battery in fireproof container or location until battery pack cools.
- Always make sure there is adequate ventilation around battery pack while charging, discharging and during storage.
- Never store battery in R/C vehicle.

**FIRST AID:**

- Do not allow the battery packs electrolyte make contact with eyes or skin. If this happens was affected areas with soap and water immediately. If electrolyte comes in contact with eyes, flush with large amounts of water for approximately 15 minutes and seek medical attention immediately.

If your battery leaks electrolyte, vapors or smokes do not inhale the leaked material or fumes. Leave the area and allow battery pack to cool and vapors to dissipate. Remove spilled liquid with absorbent material and wash area thoroughly with soap and water.

**DISPOSAL:**

- Li-Po batteries are environmentally friendly and do not need to be recycled like Ni-Cd. Although there is no recycling required Li-Po batteries need special care before disposing of them.
- Do not throw batteries directly in trash. There are measures you must take to dispose of damaged and undamaged battery packs. Throwing batteries directly in trash can result in fire.
- Undamaged Li-Po batteries need to be discharged before disposal. Place

undamaged battery in fireproof container or bucket of sand. Connect battery to a Li-Po discharger and set cut-off to lowest voltage. Set the discharge current .5 amps and discharge battery pack until it reaches 1V or lower per cell, (2 volts for this battery pack).

You may also run battery in vehicle until there is no more power.

- Put battery in bucket or tub of salt water. This container should have a lid but needs not be air tight. The mixture should be 3 to 5 gallons of cold water with ½ cup of salt mixed in per gallon.. Put battery in container and allow battery to remain for 2 weeks.

- After 2 weeks remove battery and place in trash.

- For batteries that have swelled, split, been punctured or have any other damage do not discharge. Put battery directly in tub of salt water and leave for 2 weeks before disposing of in trash.

Once you have discharged and soaked your battery pack in salt water you can safely dispose of the battery pack in the trash. No special recycling program is required.

***Trinity Products Inc. assumes no liability for the use or misuse of this product. By purchasing this battery the consumer/buyer/user assumes all liability and will take the full responsibility for using and the results of using this battery pack.***

***Trinity Products Inc. your point of purchase and any dealer/distributor of this battery their employees or owners will assume no responsibility for the use or misuse of this product and any damages or injuries to property or person that may occur from its use.***

***If the above terms are not agreed to please return this battery pack to the place of purchase.***

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