

CustomBuildTorches and CBT Cells **Battery and battery charger safety information**

Lithium-ion 18650 battery safety instructions

- Never let children play with any type of battery.
- Always check for signs of damage to the battery and particularly the protective wrapper. If in doubt dispose of responsibly.
- Always handle batteries with care, do not drop batteries and never force them into either the torch or charger.
- Avoid over-discharging the battery, remove from torch before the power starts dropping.
- Take great care that the batteries are facing the correct way when inserting them into either the torch or charger.
- Never expose batteries to flames or excessive heat such as sustained direct sunlight.
- Never expose batteries to excessive dampness or submerge into any liquid.
- Never open, puncture or modify the batteries in any way.
- When the battery starts to lose the ability to hold its charge for as long, recycle it in the correct manner.
- Closely follow both the battery and battery chargers manufacturer's instructions.
- Always ensure there is a good contact when inserting battery into either charger or torch.
- Always use a high quality charger using the genuine CC/CV (Constant Current, Constant Voltage) charging method, purchased from a reputable supplier (if in any doubt contact the battery manufacturer).
- Never exceed manufactures recommended maximum charging voltage which is usually 4.2Volts. Any of our charger prevents this.
- When charging place the charger in a safe environment away from flammable materials, ideally on a metal surface.
- Never leave the batteries charging unattended.
- Never mix different brands, capacities, charge levels or varying ages of batteries when charging. Although some chargers with separate channels (including all supplied by CustomBuildTorches) are designed to do this, it is a good working practice to be extra safe.

Lithium-ion 18650 battery care instructions

- Always handle with care. Batteries usually die due to damage rather than old age.
- Whenever possible or when the batteries are not in use for extended periods (several months), remove batteries from the torch and store in a cool, dry and safe environment at around 40% of its maximum charge level.
- When using the battery do not let the batteries charge run down low. It is better for the battery to recharge it more often.
- When possible charging at the lowest available current will extend the batteries life span. (setting 1 on our WP2II charger).

What to do with a defective lithium-ion 18650 battery

If in any doubt as to the state of a lithium-ion battery because you may have damaged it or if it appears not to be working correctly, you should take the following steps:

- Treat the battery as a potentially explosive object. Make sure that you take all steps to protect yourself.
- Take the battery outside to a safe, dry place, away from highly flammable materials and children. Leave it there for at least one hour in case there is a short circuit and the battery starts heating up.
- Check if the battery has heated up. If it has, leave the battery to cool off.
- Place the battery into a secure box and take it to your local chemical waste disposal facility.

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Warning: Lithium-ion batteries have the potential to explode or cause a fire if they are used incorrectly or if they are defective.

Therefore, please spend just a few moments to read the following information very carefully.

Background information

18650 Lithium-ion batteries are powerful and durable batteries used in many millions of electronic devices worldwide, including power tools, laptops and mobile phones, and if used correctly are extremely effective, *safe* and reliable.

If however these batteries are damaged or are abused, even if unknowingly, their chemical composition makes them potentially dangerous and even explosive, especially when being charged with substandard equipment.

It is extremely important to be aware of the potential risks and how best to avoid or deal with them. It is equally important that you use the highest quality and safest batteries/battery charger possible, as these products will in all likely hood be plugged into 240V in your home.

Caring for your Lithium-ion batteries correctly will also increase the batteries life span and its capacity over its calendar life.

What we have done to protect you

We use the very latest and highest quality cells made in Japan by Panasonic and Sanyo. These not only out-perform other batteries, lasting longer and having an overall longer life span, but are far safer than many similar batteries which are currently on the market. These cells have an in built mechanical system, protecting against the build up of heat and pressure, for the most extreme of cases. This actually stops the chemical reaction by separating the electrodes inside the cell when the pressure reaches a predefined threshold. The vent disc then opens and releases the gas and excess pressure.

To prevent the batteries from short circuit, over current, over charge and over discharge we use the very best protection circuitry (PCB) made by Seiko which is also made in Japan.

The battery is double wrapped in high quality, tough and durable material to help prevent the batteries from external damage potentially causing short circuiting.

The protection circuitry itself has added protection against damage from the effects of a rifles recoil. We have sauced the best possible battery chargers to suit our gun mounted lighting kits. These are of the highest quality, extremely safe and very practical.

All products have the required and recognised certification.

By using the best possible materials, using the highest standards of assembly & quality control and by encouraging you to read and understand this information, we enable you to safely get the absolute most out of your CBT Cells 18650 rechargeable Lithium-ion batteries.

Please contact us with any questions