



## Explosion and fire risk associated with battery adaptors

### What is the hazard?

The use of adaptors to allow after-market generic batteries to fit different products, particularly battery chargers, creates a safety risk. These adaptors may bypass charging protection components leading to a failure that results in a fire or explosion.

### How does this hazard occur?

Batteries and chargers are designed to work together. They include a charge control circuit which is usually specific to a particular type of battery. The charge control circuit may be in the charger or the battery, depending on the product. Using a battery in a charger not intended for that battery may result in no protection against overcharging. This can cause a fire or explosion.

### Case study

A consumer in Tasmania recently purchased a replacement battery of the newer lithium-ion type online, together with an adaptor to allow the new battery to be used with an older tool.

The battery had been charged twice. When it was being charged a third time using the original charger that came with the tool via the adaptor, it exploded after 20 minutes and a fire occurred. Fortunately a neighbour heard the explosions and called the fire brigade. Remains of the battery were found spread over a large area.



Figure 1: Remains of battery and charger on work bench following explosion

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