Lithium-ion battery safety info tips

Many portable devices today are powered by rechargeable lithium-ion batteries. These types of batteries pose a higher risk of fire than others.

You will find lithium-ion batteries in many devices such as phones, tablets, power banks, laptop computers, toys, appliances and tools, as well as mobility equipment such as e-bikes and e-scooters.

They can also be found in many other modern devices that need power.

What causes lithium-ion batteries to catch fire?

Lithium-ion batteries release toxic and flammable gases when they short circuit, which may lead to them catching fire. If the battery is fully charged, violent fire behaviour with sparks and jet-like flames may be experienced.

The main reasons lithium-ion batteries short circuit and catch fire are because they:

- Are incorrectly charged using a charging cable that was not designed for the device or battery.
- Have been damaged by an impact, cracked, dented, punctured, crushed or exposed to overheating.
- Have been in fresh or salt water for a long time, causing corrosion within the battery.

How can I prevent my devices or batteries from catching fire?

Using chargers with incorrect power delivery (voltage and current) can cause damage to the battery including overheating that can lead to fires.

- Ensure the battery and charger is suited for the job and has no electrical faults.
- Only use chargers that are supplied with the equipment or device, or certified third-party charging equipment that is compatible with the battery specifications.
- Only purchase and use devices and equipment from reputable manufacturers and suppliers.
- Always follow the manufacturers' charging and operation instructions.
- Disconnect a device or battery once it indicates that it is fully charged.
- Only use chargers that meet Australian Standards – look for the Regulatory Compliance Mark.

Don't help your devices to overheat

Devices left on soft surfaces can overheat and catch fire.

- Don't charge batteries or devices on soft surfaces such as beds, couches and carpet.
- Keep batteries and devices away from items that can easily catch fire like blankets, clothing and paper.
- Never charge a device under a pillow.

Don't leave charging devices unattended

- Avoid charging batteries or devices overnight.
- Avoid leaving batteries or devices unattended while they are on charge.

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General charging safety

- Don't use battery charging devices with worn or damaged cables.
- Always ensure the battery charger is switched off from the electrical power supply before connecting the batteries. This will minimise the risk of shock and sparking while connecting the batteries.
- Lithium-ion batteries can be sensitive to heat and therefore must be charged and stored in moderate temperatures.
- Never store or leave batteries and devices in areas where they can be exposed to heat or moisture.
- Do not leave devices such as phones, computers or charging devices in direct sunlight or in parked vehicles where they can quickly heat up.
- Larger batteries and equipment such as power tools and especially electric bikes, scooters or skateboards should be charged in the garage, shed or carport away from living spaces.
- Never charge large battery-operated devices such as e-scooters or other mobility devices in any path that is needed to be used to exit a building.
- We recommend that interconnected smoke alarms are installed in areas where devices are often charged.

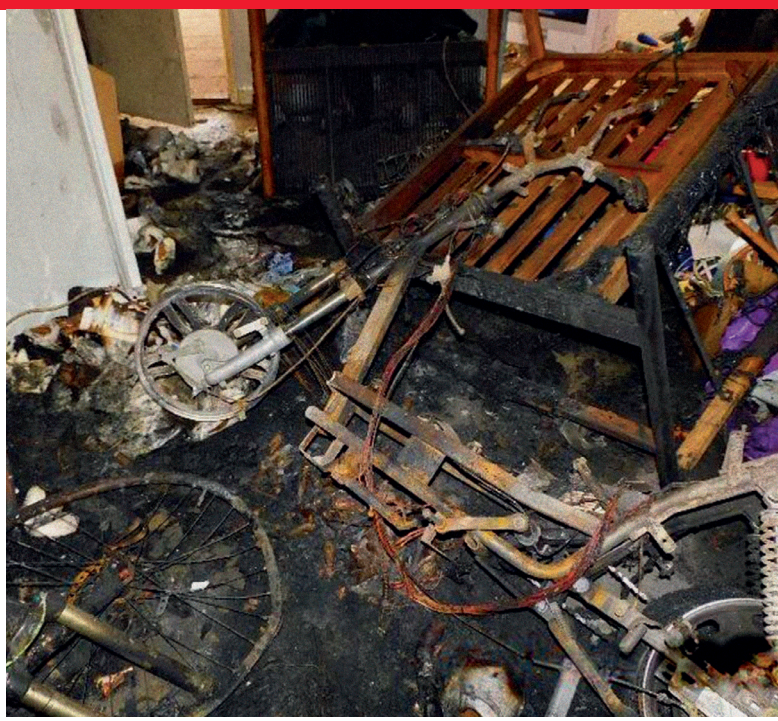
Don't confuse replaceable lithium batteries with lithium-ion batteries

Lithium batteries are not rechargeable. They can last for a very long time before they need to be replaced.

Lithium batteries can be found in gaming controllers, watches, hearing aids and heart rate monitors. In smoke alarms, lithium batteries can last for up to 10 years.

When they go flat, lithium batteries need to be disposed of and replaced.

They don't have the same fire risks as lithium-ion batteries.



If a small battery or device starts overheating

We don't recommend handling anything that is on fire.

- Unplug it from the power outlet if it is on charge.
- Avoid inhaling any smoke or fumes.
- If safe to do so, remove it to an outside area away from anything that can catch fire and away from windows or doorways.
- Leave the building and call **Triple Zero (000)** even if you no longer see visible smoke or flames. There is a good chance that the battery might reignite if it has not been cooled enough.

If the device or battery starts to smoke or emit flames

- Do not touch the device.
- Evacuate the area and close doors if safe to do so to slow the spread of fire. Ensure no one goes back inside the building for any reason. The vented battery gases, vapour and smoke are highly toxic and flammable and must not be inhaled.
- Call **Triple Zero (000)** and advise it is a Lithium-ion battery incident. Wait in a safe location outside for firefighters to arrive.
- If anyone has been exposed to spilled electrolyte, flying debris, smoke or vapours, or flames, seek urgent medical assistance. Burns should be immediately treated with cool running water for 20 minutes. Burns larger than a 20-cent piece require emergency care. Treat with cool running water immediately, call **Triple Zero (000)**, and follow the advice of the operator.

For more information visit frv.vic.gov.au/battery-safety

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