

E-Bike & E-Scooters Fact Sheet



Safer Use



Battery Breakdown

Storing and Charging E-Bikes / E-Scooters

There is growing concern over the rise in fatalities, injuries and devastating fires from electric bikes (e-bikes) and electric scooters (e-scooters).



What is the danger?

The primary risk associated with lithium-ion batteries is thermal runaway. Battery safety and stability depend on maintaining internal temperatures within specific limits. Poor quality and substandard components, flawed design, physical abuse and improper charging or discharging can all cause a battery to become thermally unstable and can lead to catastrophic failure. Even if a fire is extinguished, it is common for the fire to start again, highlighting the dynamic nature of lithium-ion battery fires.

The Risks:

E-Bikes / E-Scooters, like many other modern gadgets, are powered by lithium-ion batteries. These batteries store a large amount of energy in a small space. So it is essential that they are stored and charged safely to reduce the risk of fire. Fires could occur from poorly designed batteries, from charging them incorrectly or from damage to the battery.

Purchasing an E-Bike / E-Scooter and Charger:

Due to the risk of fire and explosion associated with lithium-ion batteries, it's important to source a product and charger that conforms to UK safety standards and has been tested. Electrical Safety First recommends looking out for the following when buying your E-Bikes / E-Scooters and charger:

- Only purchase from a reputable retailer – don't buy from social media or online marketplaces.
- If the original charger is not available, obtain a replacement from the original manufacturer. Counterfeit and substandard chargers can be deadly. Overcharging, over-discharging and charging the battery too quickly are some of the main causes of fires from lithium-ion batteries.
- Ensure that the E-Bikes / E-Scooters are of good quality – check for misspellings, bad translations and attempts to copy larger brands.
- Faulty electrical items will often be missing warranty cards and instructions.
- If there are no instructions on charging safely, do not buy it.
- If you suspect that you have a sub-standard or faulty E-Bikes / E-Scooters, stop using it immediately and report the fault to the manufacturer or retailer. You can also contact the Citizens Advice helpline on 03454 04 05 06.

Using and Charging your E-Bike / E-Scooter:

- Disconnect the battery and unplug your charger when the charge cycle is complete. Don't leave items on charge continuously, e.g. overnight.
- Regularly check the condition of the battery and look for dents, deformation and signs of overheating. Stop using or charging the battery as soon as you notice any damage and replace it.
- Only use the charger supplied by the manufacturer.
- Charge your batteries in a safe place:
 - Do not charge batteries where they may prevent you from escaping in the event of a fire.
 - Do not charge batteries close to combustible materials or hazardous substances.
 - Do not charge lithium-ion batteries where high temperatures



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or sunlight are to be expected.

- Do not cover lithium-ion batteries whilst charging.
- Monitor the charging of your E-Bikes / E-Scooters and batteries.
- Always wear a sturdy, high-quality helmet when riding your E-Bikes / E-Scooters.
- Ensure that you have adequate back up and early warning systems in place:
 - Do you have smoke/heat alarms to alert you in case of a fire?
 - Is your electrical installation up to date? Does it have RCDs (residual current devices) fitted that can switch off the power in the event of a fault?



If you already have an E-Bikes / E-Scooters, here are some safety tips that can help you keep you and your loved ones safe.

- Buy your E-Bikes / E-Scooters from a reputable retailer that you know and trust.
- Always ensure you're using a compatible charger with your battery.
- If you need a replacement charger or battery, get it from the original manufacturer – fake or substandard chargers can cause fires.
- Avoid buying from market stalls, or from third-party sellers on online marketplaces. There is no guarantee the product has been through product safety testing.
- To charge your E-Bikes / E-Scooters safely, follow the manufacturer's charging instructions.
- Once charged, unplug the charger – so you don't leave the battery on a continuous charge.
- Avoid charging overnight. Fires occurring at night, when people are sleeping, are particularly dangerous as your reaction time is massively reduced.
- Don't charge your E-Bikes / E-Scooters in an exit route like a hallway, landing or stairwell and not beneath a staircase. If a fire breaks out it can block your ability to escape.
- Don't try to modify your battery pack as these modifications can cause fires.
- Charge batteries in a safe place from a socket that is RCD protected and in an area with working smoke alarms.
- Charge preferably, outside in an enclosed space like a detached garage, shed or a designated charging area.
- Avoid charging batteries in strong sunlight or near high temperature or flammable materials.
- If your battery catches fire, do not attempt to put it out yourself. Get out and call the fire service.

Conversion kits

- If you want to convert your bike, go to a reputable retailer and have it fitted by a professional to ensure it's safe and fitted with the correct components.
- Only buy kits and batteries from trusted retailers and manufacturers. Batteries purchased online may not meet UK safety regulations and could be more likely to cause a fire.
- Don't tamper with the battery, this can increase the risk of accidents or dangerous malfunctions.
- Don't try to extinguish a Lithium-ion fire. If there's a fire involving an E-Bikes / E-Scooters, or lithium-ion battery, get out, stay out, and call emergency services.

