

# Storing large lithium ion batteries

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The configurability and endless practical use cases of lithium-ion batteries make them highly popular in many industries. Thanks to their high efficiency, impressive power to weight ratio and low self-discharge, it's expected that the demand for lithium-ion batteries will increase by 7X globally between 2022 and 2030.

These batteries have become so ubiquitous that many people forget the most important tenet of these batteries: they must always be treated like they might combust at any minute, particularly when no longer in normal use.

A damaged battery can cause a fault to be triggered, which is what often leads to fire. When a faulty battery is in storage and combusts, it may cause other batteries to ignite and releasing toxic, flammable vapours that make the fire incredibly challenging to manage. Lithium-ion battery fires can even reignite after being contained.

The UK doesn't have specific regulations or legislation for the general storage of lithium-ion batteries. The Health and Safety Executive has, however, published guidance on good practices for handling and storing batteries, even though it is not compulsory.

You can find the HSE's guidance for using electric storage batteries safely [here](#). If you have complex battery needs or concerns, you can also work directly with the HSE, which can provide some battery testing methodologies.

Spontaneous lithium-ion fires rarely occur, but the risks associated with a fire are incredibly severe. The root cause of a short circuit in the battery can come from the cell design, temperature, storage period, state-of-charge, or chemistry. It is considered a risk to store the battery in the open or share a storage unit with anything combustible.

In general lithium-ion batteries should always be removed from the devices they power and stored at 60-70% of the pack's capacity. If a battery will go unused for three more days, it should be stored in a cabinet or larger store.

Once disconnected, storing lithium-ion batteries follows similar principles as the correct storage of chemicals. The storage facility (e.g. a flammable storage cabinet) should be located away from heat and ignition sources and should offer:

**Safety Storage** offers lithium-ion battery stores and cabinets offer 90 minutes of fire protection with secure, lockable doors and self-sealing vents, which handle the highly-flammable vapours that can cause a battery fire to burn out of control. You also have the option to add fire detection systems and fire extinguishers to the

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cabinets. Stores and cabinets can be manufactured in non-standard sizes to suit your storage area or the quantity or type of batteries on your premises.

Treating the damage to a battery as an emergency is essential in preventing a future fire. As a general rule, if a worker is ever concerned about a battery, they should notify their designated Workplace Health and Safety Officer immediately and then notify emergency services where appropriate.

Additionally all staff should be trained in what to do if a lithium-ion battery fire breaks out. Facilities teams should make themselves aware of the UK Fire Industry Association's guidance on Lithium Ion Battery Fires and provide relevant training.

Do you have the storage capacity you need to safely store your batteries? The experts at Safety Storage are not only experts in chemical storage but also offer pioneering products for battery storage.

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