

handling & storing waste batteries

Recolight provide a collection service for some of the most common types of portable and industrial battery.

Recolight collection points must comply with the following to minimise risks arising from the storage and handling of batteries.

Recolight require users and providers of its battery collection service to remain up to date with current guidance and best practise relating to the safe storage and handling of batteries. This document provides some practical guidance and the website addresses to official HSE guidance.



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Why batteries must be handled with great care

Provided batteries have not been exposed to physical or electrical abuse and are treated with appropriate respect, they are usually safe to store and handle. However, batteries do pose several serious risks including fire, explosion, chemical and heat burns, poisoning, serious electric shock and dangers from heavy weight.

If you store or handle batteries it's important that you take reasonable steps to avoid the risks materialising. The use of batteries in portable equipment is growing quickly and those batteries are often extremely volatile (especially Lithium and Lithium ion types) and have been linked to several fires.

The Recolight battery collection service



The maximum gross weight of batteries that can be collected by Recolight is 330kg per collection. This weight includes containers and any inert filling used.

Please advise Recolight if you believe your collection might exceed that limit so that a solution (eg using specialist hauliers, or splitting into multiple collections) can be considered.

Recolight DO NOT collect the following:

- ✘ Batteries containing potassium hydroxide
- ✘ Batteries that require 'activation' (eg by adding a liquid before use) to allow them to function
- ✘ Damaged batteries
- ✘ Batteries with exposed terminals

Batteries can be short-circuited giving rise to fires

- If the batteries are not fully discharged (as is often the case with waste batteries) then there is substantial risk of a battery fire from short-circuit
- A battery fire has the greatest potential when relatively high energy is passed through conductors during a short circuit, generating high temperatures
- Electrical conductors can spontaneously combust when touched together (short-circuited, which can then lead to a battery fire.
- Ruptured or damaged batteries can leak electrolyte which can be hazardous and in some instances a ruptured battery can catch fire (e.g. primary lithium batteries)
- Lithium batteries are particularly hazardous due to their ability to retain their electrical capacity for long periods and because they contain elemental lithium. Rupturing / short circuits / physical damage can lead to explosion or high temperature fires
- The risk of problems occurring can be increased when the batteries are disturbed or moved. A container filled with waste batteries may be experiencing no problems before being disturbed, but some movement may cause a short circuit to take place, or cause physical damage or rupture to a battery
- The dangers from batteries can take some time to become apparent – for example heat from a short circuit or damaged battery can build up slowly over time and only several hours later cause a fire to start. Be vigilant, especially with batteries that have recently been moved or disturbed in some way

Recolight guidance for handling and storing waste batteries

- Because batteries are a potential source of heat, it makes sense to starve them of fuel and oxygen in order to minimise the risk of fire. Keep batteries in sealed containers to keep them free of oxygen supply and water
- Especially for higher risk collections of batteries, use an inert filling material (eg sand) around the batteries – this will help reduce risk of short circuit, will help conduct heat away and will starve any heating battery of oxygen and fuel. Keep containers of waste batteries in an area away from combustible materials to avoid the risk of fire spreading
- Ensure that staff are trained on the risks associated with storing and handling batteries and are aware of what to do in the event of an incident

Correct storage and handling of batteries will minimise the risks associated with batteries

Containers to be used

- [UN approved containers](#) – the weight of packed batteries must not exceed the threshold of the container with inert filling
- The container must meet the [packing group 2 performance level](#)
- Non UN approved container – maximum allowed gross weight of batteries is 30kgs per container. This includes the weight of container and any inert filling material
- If gross weight is above 30kgs, a [UN approved container](#) must be used
- Containers must be of a material that does not conduct electricity



Managing your battery container

- Wherever possible, metal containers (eg steel drums) should not be used because they conduct electricity and so can give an easy route for a short-circuit to occur. If steel containers are to be used, a robust insulating plastic liner is required in order to ensure that the container walls are kept separate from the batteries stored inside
- An inert filling of non-conductive, non-combustible material such as sand should be used to fill spaces in battery containers to reduce fire risk
- Battery containers and lining bags must be kept tightly closed to remove the supply of oxygen from the container and reduce fire risk
- Batteries must always be protected from rain and any other sources of water. Water presence could corrode batteries casings giving rise to leakage and fire risk and can react with chemicals in batteries giving fire / explosion risk
- Where the batteries cannot be stored or transported in appropriate UN approved drums, please speak with a member of staff from Recolight who can agree an acceptable and appropriate alternative means of transporting the batteries with minimum risk

Battery storage

- Ensure that all live conductors and terminals are effectively insulated or protected
- If any of the batteries have trailing wires these should have their ends securely taped up with insulation tape, or otherwise have their live ends protected to ensure that, even during movement, there is no possibility of live terminals being exposed and creating risks from short circuit or electric shock
- Ideally cut off trailing wires where they leave the casing in such a way that there is no possibility of the cut ends touching each other, and insulating any exposed terminals
- Metal strapping around batteries should only be used with caution and in such a way that the metal could not give rise to a short circuit and resulting potential fire



More information from H&SE

To learn more about the risks associated with batteries please refer to guidance issued by the Health and Safety Executive.

- [Using electric storage batteries safely](#) – H&SE download
- [Health & Safety Executive website](#)