Risk Tips



Battery Charging for Material Handling Equipment

Frequently Asked Questions (FAQs)

Charging batteries for equipment is part of daily work, but it comes with some safety risks. Here are answers to common questions and simple tips to help reduce those risks.

Material Handing Equipment (MHE) is often powered by rechargable batteries. Common examples of MHE are forklifts, hoists and pallet jacks, but can include anything that is used to move, lift or store goods at work.

Why is battery charging considered high risk?

Battery charging produces heat and, in some cases, flammable gases. If charging occurs in poorly ventilated areas or close to flammable materials, a fire can start and spread quickly. The risk of damage is higher when charging happens after hours, as problems may not be noticed immediately.

Tips to reduce battery charging risk:

- Charge batteries in a well-ventilated, designated area.
- Keep flammable materials away from the charging area.
- Avoid unattended or after-hours charging.
- Use the approved equipment.
- Monitor batteries for heat, damage, or any unusual change in appearance.

QBE

What types of batteries are used in an electric MHE?

An electric MHE typically uses either:

- Lead-acid batteries, or
- Lithium-ion batteries.

Both battery types are widely used and reliable. Each type requires specific charging arrangements to manage fire and safety risks.

Tip

Always follow the manufacturer's instructions for charging and handling batteries and only use approved charging equipment.

Is there a risk of explosion when charging lead-acid batteries?

Yes, lead-acid batteries can release flammable hydrogen gas while charging. If this gas builds up due to poor ventilation and an ignition source is present, there is a risk of explosion.

What are the main risks when charging lithium-ion batteries?

Lithium-ion batteries can overheat if they are damaged, faulty, or charged incorrectly. In rare cases, this can cause a fire to develop quickly. This type of fire will release toxic and flammable gases and can be particularly difficult to extinguish, with the possibility of it reigniting.

Tip

Only charge lithium-ion batteries using the correct charger in a well ventilated area. Stop immediately if the battery shows signs of damage, overheating, or unusual smells.

Why is maintaining and testing battery chargers important?

Because battery chargers are mains-powered electrical equipment, keeping them well maintained is critical to reducing safety risks. They should be inspected, serviced and tested under a Test and Tag (T&T) regime carried out by a licensed provider. Charger maintenance can sometimes be missed, especially if it's not included in MHE servicing. Faulty chargers can increase the risk of fire. Chargers should be checked at least annually by a qualified electrician.

Tip

Include chargers in your Test and Tag schedule, check tags regularly to make sure they're in date, and never use a charger that shows signs of damage, or hasn't been tested by a licensed provider.

Where should battery chargers be located? How much clearance is needed?

Chargers should be installed in a dedicated, clearly marked, charging area.

Ways to reduce risk

- Keep chargers at least one metre away from materials that can easily catch fire.
- The charging area should only be used for charging, and should not be used for general storage of other materials.
- Where possible, mount chargers on non-combustible surfaces.
- Use barrier protection to prevent impact damage from forklifts or other equipment.



Does a battery charging area need ventilation or special conditions?

Yes. Charging areas should:

- Allow enough ventilation for heat and gases to disperse. There should be at least 100mm clearance around chargers.
- Be protected from direct sunlight, moisture and extreme temperatures. If chargers are located near combustible walls, panels, or storage, heat resistive linings should be installed.

What routine checks can help reduce charging-related incidents?

Good practices include:

- Regularly checking batteries for cracks, swelling, or leaks.
- Isolate damaged batteries if safe to do so and do not use.
- Dispose of damaged batteries safely and legally.
- Plugging chargers directly into dedicated power points.
- Avoiding power boards, adaptors, or extension leads.
- For larger operations, use a separate, well-ventilated, charging area away from storage.

Are signage and staff training important?

Yes. Clear signage helps remind staff to keep charging areas free of materials that can catch fire and highlights key safety rules. Staff should also be trained on correct charging procedures and how to recognise warning signs, such as battery damage and overheating.

What should be done if a battery or charger shows signs of overheating, smoke, or damage?

Follow the below steps if signs of overheating, smoke, or damage are present:

- Stop charging immediately. Isolate the power if it is safe to do so.
- Keep people clear of the area.
- Follow your worksite's emergency procedures.
- If safe, move the equipment outside and away from flammable materials.
- Do not reuse faulty batteries or chargers. They should be assessed by an authorised service provider.
- If there is a risk of fire, immediately call the fire brigade.

Disclaimer: The purpose of this risk note is to provide general commentary only. It is not intended to be a substitute for appropriate professional, financial, or legal advice in any matter, or compliance with relevant laws, standards, or regulations. No responsibility is accepted by QBE Insurance (Australia) Limited for the use of this note or the information contained therein. This note does not form part of any insurance policy and is not used in the assessment of insurance claims. Any insurance claim will be assessed against the policy terms and conditions and applicable law.