



THE SAFE USE OF LITHIUM-ION BATTERIES TOOLBOX TALK

The most common type of Lithium-ion (Li-ion) battery fitted to Mobile Elevating Work Platforms (MEWPs) is the Lithium Ferrophosphate (LFP) battery.

WHAT IS THE RISK?

The main risk from Li-ion batteries is fire or explosion, which can lead to thermal runaway. This can be caused by:

- **Incompatible equipment:** Using incompatible battery chargers or batteries.
- **Overheating:** Exposure to high temperatures.
- **Damage:** Caused by impact, puncture, or vibration.

OPERATOR - PRE-USE INSPECTION

- Check the condition of the batteries as part of the pre-use inspection. Refer to the MEWP operators manual contained in the MEWP.
- Check the security and condition of the battery charger and leads.
- Look for any signs of overheating on or around the batteries, such as the batteries being hot to the touch, swelling, error messages on the display, or unusual odours.
- Check for signs of overheating on the battery charger, such as burning smells, deformed casings, discolouration, or it being hot to the touch.
- Check the battery state of charge indicator before use. Look for flickering or dimming of the display.
- Report any safety concerns immediately.

OPERATOR/RENTAL COMPANIES CHARGING BATTERIES

- Do not connect or disconnect the battery charger while the batteries are on charge; this should only be done when the power has been turned off.
- To prevent overcharging always unplug the charger from the battery once it is fully charged to prevent overcharging.
- It is recommended not to leave Li-ion batteries on charge overnight or unattended in case of fire or explosion.

USEFUL REFERENCES

- European Material Handlings Federation Lithium Batteries (DOC. FEM/MEWPs N073).

WHO NEEDS TO KNOW?

This Toolbox Talk applies to all individuals involved in the safe use of a MEWP, including:

- Users (those in control of MEWPs on site)
- MEWP rental companies
- Operators, managers and supervisors

MEWP RENTAL COMPANIES

- Li-ion batteries should be handled with care. Dropping, puncturing or crushing batteries can cause a short circuit within the battery.
- Never allow the battery terminals to come into contact with metal objects. Where possible, use protective cases or sleeves, or insulated tools.
- Never fit incompatible batteries or chargers.
- Wear Personal Protective Equipment (PPE).
- Use a suitable strap or cradle to carry batteries.
- For heavy Li-ion batteries, or those positioned in a hard-to-reach area, consider using a mechanical lifting device to assist in the removal and fitting of replacement batteries.
- Always isolate the power to the battery before removing or fitting replacement batteries.
- MEWPs that have received a significant impact should be stored outdoors with the main power isolated, as there is a risk of fire or explosion.
- Li-ion batteries should be stored in a dry place at a temperature between -10°C and +50°C. The presence of Li-ion batteries in the workplace should be included in the fire risk assessment.

EMERGENCY SITUATIONS (FIRE OR EXPLOSION)

- Do not attempt to put the fire out yourself with any form of fire extinguisher. If a fire or explosion has occurred, you should raise the alarm and call the emergency services immediately.
- Li-ion fires can vent gases, vapours and smoke, which are highly toxic to inhale.
- Li-ion battery fires can reignite even after appearing to be extinguished.

PLANNING FOR INCIDENT RESPONSES

Develop and practice an emergency response plan focusing on a structured approach to preparation, response and recovery for battery-related incidents.