



Health and Safety Bulletin No. 27

Lithium-ion battery safety in mining

Date: 24 August 2026

Background

A significant number of incidents involving portable lithium-ion (Li-ion) batteries have occurred at mine sites. This highlights the importance of hazard awareness and risk management in the use and care of Li-ion batteries.

From 2024 to 2025, WorkSafe Mines Safety was notified of 105 incidents relating to batteries. Of these, 35% involved a fire, smoke or flame; 14% related to battery power tools; and 8% resulted in electric shock.



Figure 1: Handheld power tool Li-ion battery fire



Figure 2: Li-ion power bank fire in village room



Figure 3: Thermal runaway incident from non-rechargeable Li-ion battery inserted into a charger

Summary of hazard

The primary hazard associated with Li-ion batteries is thermal runaway. This is the self-perpetuating increase in temperature of the battery and can arise from overcharging, mechanical damage, high temperatures or internal fault, and may result in a fire or explosion.

Additional hazards of Li-ion batteries include electric shock and toxic chemical fumes.

Contributory factors

Incidents are typically linked to a lack of awareness and insufficient risk controls, such as:

- PCBU's and workers not identifying hazards associated with Li-ion batteries
- use of non-original equipment manufacturer (OEM) Li-ion batteries with unknown quality or manufacturers' safety standards
- inadequate maintenance and inspection of Li-ion batteries
- battery charging and storage areas lacking sufficient ventilation and temperature control.

Recommendations

Management of Lithium-ion batteries

- Mine operators should identify where Li-ion batteries are used, charged and stored and incorporate the hazards into the mine's risk management arrangements.
- Establish procedures for purchasing, charging, transporting, inspecting, quarantining and disposing of batteries.

Charging

- Charge batteries in well-ventilated areas with OEM or certified chargers only.
- Consider implementing purpose-built battery charging stations or cabinets.
- Ensure only rechargeable batteries are placed on charge.

Storage

- Avoid storing batteries in direct sunlight or in damp, poorly ventilated areas.
- Consider the use of smoke and thermal alarms in battery storage areas.
- Avoid leaving batteries inside unattended vehicles where temperatures can rise.
- Avoid leaving batteries unsecured on vehicle trays.
- Safely dispose of batteries that are swollen, damaged or leaking.

Inspection

- Implement an inspection procedure for batteries and chargers.
- Regularly check batteries for swelling, leaks, corrosion or other visible damage.
- Re-inspect batteries after impacts, such as dropping.
- Inspect condition of new batteries, verifying battery type is correct before use.

Training

- Provide workers with information and instruction on battery hazards, correct charging and storage, pre-use inspection, recognition of early signs of failure and emergency response.
- Ensure workers know how to identify rechargeable versus non-rechargeable Li-ion batteries.

Further information

Department of Local Government, Industry Regulation and Safety

- [Sounding the alarm on the dangers of lithium-ion batteries](#)
- [Mines Safety Bulletin No. 181 Hazards associated with the use of e-cigarette devices](#)

Department of Fire and Emergency Services

- [Lithium-ion batteries](#)

NSW Resources Regulator

- [Fires on battery powered tools increase](#)

Standards Australia

- [Used Lithium Batteries - Guidance on Safe Packaging and Transport by Road and Rail - June 2026](#)