

HANDHELD BATTERY RECYCLING

Guidelines for lithium batteries

What are lithium batteries?

There are two types of lithium batteries in common use: primary (non-rechargeable) metallic lithium (Li) batteries, which are used to power toys and small electronic devices; and secondary (rechargeable) lithium ion (Li-ion) batteries, which are found in products such as laptops, cameras, mobile phones and power tools. Larger lithium batteries can also be found in other applications such as military backup power.

Lithium batteries use lithium in its pure metallic form. Li-ion batteries use lithium compounds which are much more stable than the elemental lithium used in lithium batteries.

What can we recycle?

Both types of batteries are able to be recycled. They can be mixed with other battery types in the collection container as long as certain packaging requirements are met (see below). Larger batteries (>500g) and used lead acid batteries need to be collected separately from smaller handheld batteries.

How can we recycle safely?

The risks associated with lithium battery recycling include the potential for a fire or explosion if batteries become over-heated, for example if they short-circuit. A risk assessment and management strategy should be put in place before any activity involving collection or transport of lithium batteries is carried out.

Additional guidelines are provided on the next page.

Dangerous Goods classification

UN 3090: Lithium batteries, Class 9

UN 3480: Lithium ion batteries, Class 9



Poisons Hotline 13 11 26
Emergency 000

Australian Battery Recycling Initiative

The Australian Battery Recycling Initiative is a not-for-profit association established in 2008 to promote responsible environmental management of batteries at end of life. More information on battery recycling can be found on their website at www.batteryrecycling.org.au.



What regulations apply?

Li and Li-ion batteries are classified as Dangerous Goods and should be stored, packed and transported in accordance with the Australian Dangerous Goods Code and legislation. A packaging exemption has been approved for used lithium batteries being transported between the consumer collection point and the intermediate recycling centre, weighing <500kg and packed with other non-lithium batteries. The requirements are outlined in the Australian Battery

Recycling Initiative's Packaging guidelines for used handheld batteries. Collection and transport of lithium-only batteries must comply with all requirements in the Australian Dangerous Goods Code.

Transport of lithium batteries by air is restricted – for more information see www.iata.org/whatwedo/cargo/dgr/Pages/lithium-batteries.aspx.

Note: The information provided here is general in nature. Organisations must do their own research to understand their legal obligations and to ensure that they are fully compliant.

How to recycle safely

DO

- Carry out a risk assessment before you start any activity involving used batteries.
- Ensure that appropriate firefighting equipment is available in case of a battery fire.
- Ensure that Material Safety Data Sheets (MSDS) are readily accessible.
- Comply with all packaging and transport requirements in the Australian Dangerous Goods Code if you are collecting, transporting or storing a lithium or lithium ion battery consignment.
- If lithium batteries are mixed with other non-lithium batteries for recycling, follow the requirements in Dangerous Goods exemption 010/12⁽¹⁾⁽²⁾. A quality assurance system must be in place to ensure that the total amount of lithium batteries per transport unit does not exceed 333kg and the total weight of each container does not exceed 400kg. A copy of the exemption must be carried by the driver.
- Ensure that the site where lithium batteries are collected and stored, and the transport vehicle, have a satisfactory level of security to ensure that only trained people have access.
- Train employees in spill and emergency response.
- During storage and transport ensure that batteries are protected from the weather and excessive humidity, in a well ventilated area, and easily accessible in case of a fire.
- Always wear thick gloves and safety glasses if handling batteries.
- Wash your hands thoroughly with water should contact be made with leaking or damaged batteries.
- Ensure that storage containers are appropriately labelled

DON'T

- Don't store used batteries near any heat source (strong light, sun, oven, machinery).
- Don't store used batteries near other chemicals or food.
- Don't touch used batteries without protection.
- Don't store batteries too close to inhabited buildings.
- Don't attempt to lift heavy loads manually. Always seek help or put controls in place (removal trolley or forklift).
- Don't handle used batteries if you haven't been trained.
- Avoid vibrations and micro-movements caused by transportation, machines, fork-lift, etc. as they increase the risk of short circuits.
- Don't transport used handheld batteries with other batteries weighting more than 500g or used lead acid batteries (ULABs). These need to be packaged separately as they have different regulatory requirements.
- Don't deliberately break open lithium batteries as lithium is a reactive metal and if exposed to humid air may react and spontaneously catch on fire. Care needs to be taken to avoid physical damage to the batteries.
- Don't store batteries for more than 6 months. They should be transported to recyclers regularly.

(1) A copy of the exemption can be found on ABRI's website available from www.batteryrecycling.org.au.

(2) Refer to ABRI's Guidelines for Packaging guidelines for used handheld batteries.