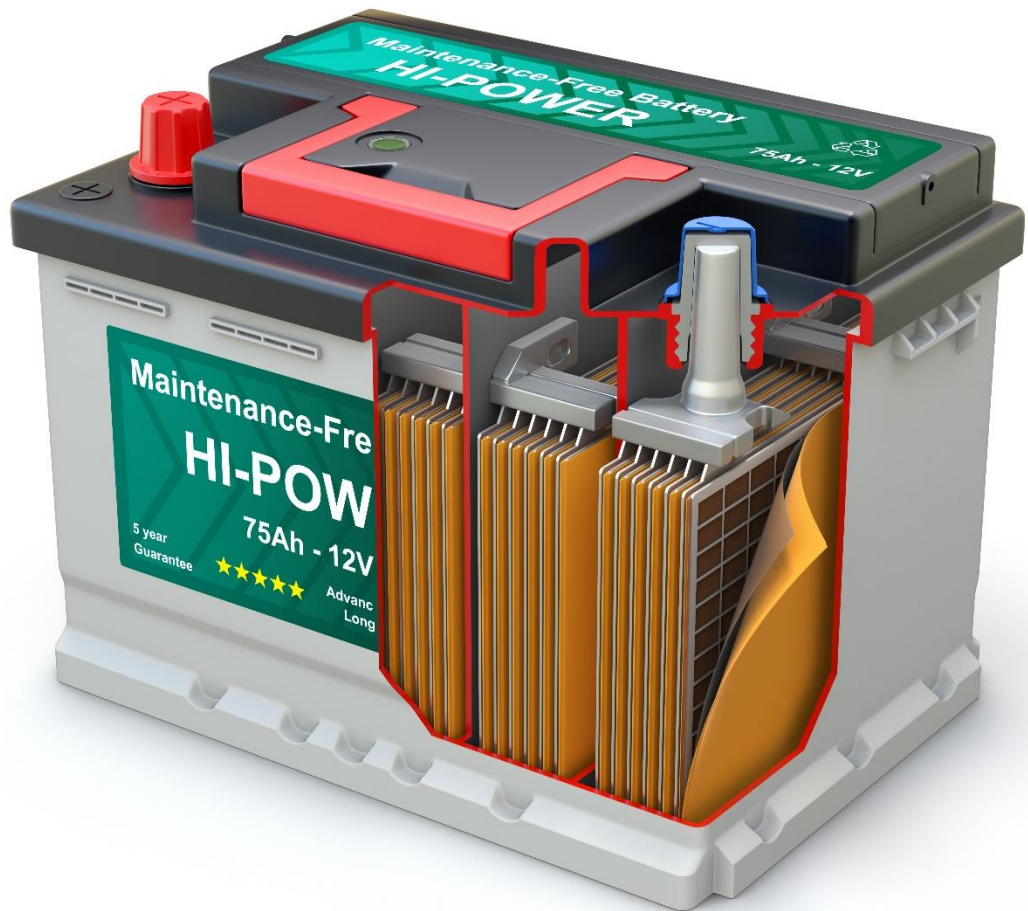


# USED LEAD ACID BATTERY RECYCLING

## Packaging Guidelines for Used Lead Acid Batteries



### CONTENTS

PURPOSE OF THIS GUIDE .....	1
Why these guidelines are of value .....	1
HOW THESE GUIDELINES WORK .....	1
Plan ahead.....	1
Check you are only packing ULABs .....	1
Batteries to avoid unless your battery processor tells you otherwise .....	2
Put safety first .....	2
Follow ULAB handling best practices .....	2
Prepare your ULAB shipment for transport .....	3
Things to know about Pallets .....	3
Things to know about stacking ULABs.....	3
Wrap the pallet.....	4
Strap the pallet.....	4
Label your pallet.....	4
Complete the required documentation .....	4
Australia.....	4
New Zealand .....	4
ATTACHMENT 1. PACKING INSTRUCTIONS FROM ADG 7.5 .....	5
MORE INFORMATION .....	5
To find a ULAB recycler .....	5

#### Important Note

The information provided here-in is general in nature. Companies must do their own research to understand their legal obligations in each jurisdiction and to ensure that they are fully compliant with the current Australian Dangerous Goods Code. To obtain a copy of the code, go to the National Transport Commission website: – [www.ntc.gov.au](http://www.ntc.gov.au)



### PURPOSE OF THIS GUIDE

ULABs are classified as a Dangerous Good under the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code). Any organisation involved in transporting ULAB must comply with the Code.

This guide is designed to ensure that packing and transport of used lead acid batteries (ULABs):

- Complies with the Australian Dangerous Goods Code – ADG 7.5 and Packaging Instruction P801 (Attachment 1), and
- Conforms to likely battery processor requirements (may vary by processor).

#### IMPORTANT

We recommend you check the latest Australian Dangerous Goods Code AND talk to your battery processor to ensure the current requirements are well understood.



### Why these guidelines are of value

These guidelines have been designed to provide options for compliance with the Code and enable acceptance by the carrier and the processing facility.

#### IMPORTANT

Non-conforming shipments or those in non-preferred packaging may be:

- Rejected by the carrier at pick-up or by the ULAB recycling facility upon delivery.
- Returned at the supplier's expense or be remediated at the supplier's expense.
- Subject to penalties for non-preferred packaging.

### HOW THESE GUIDELINES WORK

The following sections provides guidance on the practicalities of safely implementing the instructions and processor requirements.

- Plan ahead
- Check you are only packing ULABs
- Put safety first
- Follow ULAB best handling practices
- Prepare your ULAB shipment for transport
- Wrap the pallet
- Strap the pallet
- Label the pallet
- Complete the required documentation

#### Plan ahead

#### ALWAYS STAY CURRENT

**STEP 1.** Talk with your battery processor to identify any special requirements



**STEP 2.** Check that there have been no updates to the ADG code

#### Check you are only packing ULABs

**STEP 3.** Verify you are handling only Used Lead Acid Batteries

Care must be taken to ensure batteries of other chemistries such as Nickel and Lithium based batteries are not included with a ULAB shipment.

- Most Australian processors do not process any other battery types since current processing machinery is only able to process one type
- Other battery types have different transport risk classifications.

Lead acid batteries are generally labelled with the chemical symbol for lead (Pb) and the crossed-out wheelie bin (see below).





### Batteries to avoid unless your battery processor tells you otherwise

\* Do not ship mixed dry cell batteries



\* Do not ship lithium batteries



\* Do not ship Nickel Cadmium batteries



Most ULAB recyclers will not accept these battery types. Visit [www.batteryrecycling.org.au](http://www.batteryrecycling.org.au) to find a recycler that will accept these types of batteries.

### Put safety first



#### Wear Appropriate Personal Protective Equipment

- ✓ Acid resistant gloves
- ✓ Acid resistant safety glasses
- ✓ Safety boots

#### Safe lifting

- ✓ ULABs are heavy - make sure you and your colleagues are aware of safe lifting practices

#### Safe Forklift Operation

- ✓ Use safe forklift operations & maintenance
- ✓ Take care to avoid breaking pallets or spilling loads during transit

#### Clean up

- ✓ Clean-up spills with appropriate neutralising spill kit material
- ✓ One option is to use bicarbonate of soda/soda ash to neutralise any spilt acid and then sweep up the resultant "powder" for disposal

### Follow ULAB handling best practices

#### PREPARE YOUR BATTERIES FOR TRANSPORT

- ✓ Ensure all battery cables or connections are removed
- ↓
- ✓ Load the batteries on pallets
- ↓
- ✓ Keep batteries upright at all times - do not tip over on side or upside down
- ↓
- ✓ Check that any damaged or cracked cell must be free of electrolyte
- ↓
- ✓ If you have a range of battery types e.g. automotive batteries and other lead acid storage batteries, check with your processor to confirm requirements for loading and separate each type

Be aware that some processors use differential pricing for each battery category, for example automotive, industrial, gel cell and steel cased ULAB



### Prepare your ULAB shipment for transport

The code is quite specific about packing requirements (see Attachment 1). The most common method of packing ULAB for transport in Australia is wooden pallets.

#### Things to know about Pallets

- ☐ The maximum size of the pallet should not exceed 1200 mm square.
- ☐ Pallets must be in good condition and of heavy duty construction to support ULABs which are heavy!
- ☐ Do not use pallets that are damaged with broken or missing timbers as they are not capable of supporting the weight of ULAB
- ☐ Hardwood or plastic pallets are preferred; however, in some cases pine pallets may be suitable for stacking ULAB up to two pallets high. Check with your processor to be sure.

**Although most processors require use of hardwood pallets, softwood and plastic pallets and wooden crates and boxes comply with the Packing Instruction.**

#### What does good packing look like?



*Note the Horizontal strap to each layer of ULAB, two vertical straps secure the ULAB to the pallet, clear plastic stretch wrap, and pallets in good condition*

#### Things to know about stacking ULABs

Stacking ULABs has a big impact on safety for those responsible for handling the batteries during transit and once they arrive at the recycler.

The following can be used to ensure safe and conformant stacking procedures are used:

- ☐ Where practical, stack batteries of similar size and shape, such as N200s, to prevent movement.
- ☐ Stack automotive batteries separately to industrial and forklift batteries to assist in securing the ULAB in transit and assist handling by the processors.
- ☐ Ensure ULABs stacked on outer rows of each layer are of similar height. This forms a solid base for upper layer and secures batteries in the centre of the pallet.
- ☐ Stack ULABs in an upright orientation to prevent acid spills and avoid the possibility of short circuit.
- ☐ Some processors require use sheets of non-conductive material (Separators) between each layers to prevent short circuit &/or penetration.
- ☐ Use heavy duty cardboard separators (preferred by most processors), however, masonite, chipboard separators also comply with the Regulations.
- ☐ Only stack 2 layers of ULAB high to prevent damage during transit. Some processors may allow for stacking up to 3 layers, provided they have a maximum weight of 1500 kg.



**Although packing ULAB in wooden boxes or crates complies with regulations, processors may impose a charge or price deduction for the cost of handling and disposal of these materials.**

### Wrap the pallet

- ☐ All pallets of ULAB must be either stretch wrapped or shrink wrapped in plastic to the full height of the pallet stack.
- ☐ Make sure the plastic wrap does not completely enclose ULABs to avoid the potential for gas build-up.
- ☐ Use clear wrap as it facilitates identification of the ULAB by the processor and by authorities in the event of an incident or accident (Note: Black plastic wrap is compliant with the ADG, but not preferred by processors).
- ☐ Secure the batteries to the pallet by wrapping around the pallet with plastic wrap at least once.



### Strap the pallet

Effective strapping is also essential for safe transport and handling.

- ☐ Strapping must be high strength polypropylene, polyester or nylon plastic.
- ☐ Preferred strapping is 19mm wide with a combined break strength of 1500 kg.
- ☐ Strapping must be tight enough to prevent battery movement in transit
- ☐ Steel strapping is not acceptable, due to the potential risk of fire from short-circuits
- ☐ Automotive and industrial batteries must have one horizontal strap around each layer of batteries.
- ☐ Forklift and flooded standby power cells must have at least 3 horizontal straps around the load.
- ☐ In addition to the above, all pallet loads must have at least 2 cross straps tying the load to the pallet.

### Label your pallet

- ☐ Ensure all pallets or bulk containers are labelled with a “Class 8 Corrosive” sticker to comply with Dangerous Goods Regulations.
- ☐ The sticker must have minimum size of 100 x 100mm with minimum lettering size of 7mm
- ☐ All pallets or bulk containers must be labelled with the proper shipping name, including:
  - ☐ Batteries Wet filled with Acid
  - ☐ UN number, UN2794, and
  - ☐ Name and address in Australia of the consigner.
- ☐ Ensure label is placed on at least two opposing sides.
- ☐ When storing pallets, ensure that the label is visible to incoming trucks and emergency services,



For more information refer to the Australian Dangerous Goods Code (chapter 5.2)

### Complete the required documentation

#### Australia

Interstate movement of ULAB can only be undertaken with appropriate regulatory Transport Approval & Documentation.

- ☐ Obtain an approved Consignment Authorisation issued by the destination State Environmental Protection Authority prior to transportation.
- ☐ Ensure Waste Transport Certificate documentation accompanies the ULAB load during transit and can be presented at the receiving facility upon delivery.

A waste transport licence and a waste transport certificate are also required for intrastate transport of ULAB in some jurisdictions. Contact your local environmental authority for more information.

#### New Zealand

Transporters must ensure compliance to all regulations set out by the Environment Risk Management Authority, NZ Transport Agency, Maritime New Zealand and the Ministry of Agriculture and Forestry.



**ATTACHMENT 1. PACKING INSTRUCTIONS FROM ADG 7.5****P801 PACKING INSTRUCTION – Table 4.1.4.1**

This instruction applies to new and used batteries assigned to UN Nos. 2794, 2795 or 3028.

The following packaging are authorized, provided the general provisions of 4.1.1, except 4.1.1.3, and 4.1.3 are met:

- (1) Rigid outer packaging;
- (2) Wooden slatted crates;
- (3) Pallets.

Used storage batteries may also be transported loose in stainless steel or plastics battery boxes capable of containing any free liquid.

**Additional provisions:**

- 1 Batteries must be protected against short circuits.
- 2 Batteries stacked must be adequately secured in tiers separated by a layer of non-conductive material.
- 3 Battery terminals must not support the mass of other superimposed elements.
- 4 Batteries shall be packaged or secured to prevent inadvertent movement.

**Special Packing Provision:**

PP1A for road or rail transport only within Australia, it is permissible to dispense with outer packaging for batteries provided the provisions of the above 'additional requirements' are met.

**MORE INFORMATION**

For more information about ULAB recycling  
or about how to become a member  
contact the  
Australian Battery Recycling Initiative:

[info@batteryrecycling.org.au](mailto:info@batteryrecycling.org.au)  
[www.batteryrecycling.org.au](http://www.batteryrecycling.org.au)

**To find a ULAB recycler**

<http://www.batteryrecycling.org.au/recycling>