

# LITHIUM BATTERIES: LARGE VOLUME

## PACKAGING & SHIPPING INSTRUCTIONS

Large volume lithium shipments weighing 66 lbs. or more require specific criteria to ship. Collections of this size are considered “fully regulated” by the Department of Transportation. Follow all training per 49 CFR 172.704 (a)(1)-(a)(5) for this shipment.

### CORRECTLY PACKAGED LARGE VOLUME LITHIUM BATTERIES



1

#### PREPARE SHIPMENT

Contact Cirba Solutions for recycling authorization tracking number. Begin to build shipment on 40” by 48” pallet.



2

#### PACKAGE PALLET

Protect terminals of each battery. Pack with cushioning material in lined drum. Label individual drum.



3

#### LABEL & SHIP

Attach appropriate labels to outermost layer of shrink wrap.

- Ensure no lithium batteries are bloated or damaged
- Protected terminals
- Drum is lined
- Cushioning material is properly distributed
- Drum locking ring seated and fully locked
- Proper labeling on individual drum
- Shrink wrapped to pallet – many layers of shrink wrap to avoid shifting during shipment
- Overpack correctly labels

Any UN numbers not included in kit should be covered or crossed out on the label before shipping.

- UN3480 Lithium Ion Batteries
  - UN3481 Lithium Ion Batteries contained in equipment
  - UN3090 Lithium Metal Batteries
  - UN3091 Lithium Metal Batteries contained in equipment
- It is not possible to have too much shrink wrap or banding to secure the material to the pallets.
- *A general rule would be once you think you have it wrapped, add six more revolutions of wrap.*

### INCORRECTLY PACKAGED LARGE VOLUME LITHIUM BATTERIES



- Improperly protected terminals
- Mixed battery chemistries without special permit
- Insufficient banding
- Insufficient shrink wrap
- No labeling
- Oversized or overheight pallet



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## PACKAGING & SHIPPING INSTRUCTIONS

### *THESE INSTRUCTIONS MUST BE FOLLOWED EXACTLY.*

These instructions are for packaging and shipping Lithium batteries only. Lithium Batteries, unless shipping under a Department of Transportation (DOT) special permit, may not be co-mingled with other battery types. If you are unsure of the type of batteries that you have, please contact Cirba Solutions for assistance.

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### GETTING STARTED

Under the Universal Waste Law, you must contact Cirba Solutions before sending a shipment of universal waste batteries to us, at which point we will assign a recycling authorization tracking number to the shipment.

When calling please inform us:

- Of your specific pick-up hours.
- If you do or do not have a loading dock or lift truck to load the batteries for shipment.
- If you do not have an asphalt or concrete loading area.

*If batteries are damaged or leaking, or if you are unsure if batteries are damaged, please call the Cirba Solutions logistics department for instructions.*

### PREPARING BATTERIES FOR SHIPMENT

Collection containers should be labeled while they are stored. The start accumulation date needs to be filled in with the date batteries are first placed in the container.

While accumulating batteries, keep in mind that a drum of lithium batteries will be heavy, when full. If you do not have the proper equipment to handle full drums, place the drums on a sturdy pallet prior to starting accumulation so that they can be easily moved to the truck at the time of shipment. **Store in a well vented area, away from excessive heat.**

### PALLET LIMITATIONS

- Only use heavy-duty pallets with 2" x 4" supports.
- Pallet Size should not exceed 40" x 48".
- Pallet weight should not exceed 2800 lbs.
- Pallet heights should not exceed 48" tall.
- The whole pallet, with layers, should never be taller than it is wide.

### PACKAGING PALLET TO SHIP

- The U.S. DOT requires completely protecting the metal terminals on all lithium-based batteries before placing them in the shipping container. To do this, use a clear plastic tape thick and strong enough to ensure terminal protection, like packing tape or scotch tape.
- You must use a UN approved steel drum, with a plastic liner [CFR173.185(b)(3)(i)]. The container must be properly secured to a shipping pallet, free of noncompliant material and labeling.
- Cells or batteries should be packaged in a manner that prevents short circuit and or accidental shifting or movement, a non-conductive cushioning material such as vermiculite is suggested.
- Drums with proper locking lids and approved labeling can be purchased from Cirba Solutions. Make sure the lids on all drums are securely locked prior to shipping.
- Always use a heavy-duty pallet with 2" x 4" supports.
- Shrink wrap the drums **heavily** to properly secure them to the pallet. Make sure the shrink wrap is all the way down around the pallet itself. The shrink wrap becomes an overpack.

### LABELING

- Each container must be individually labeled with a label that clearly states the Proper DOT Shipping name (at least 12mm in height) and UN # (3480, 3481, 3090 or 3091), and also a Class 9 label with pictogram- the label must be a background of contrasting color and be at least 6mm in height. We can supply these labels, if needed.
- Each container must have the "ship to" address provided by Cirba Solutions clearly on it, as well as an emergency phone number.
- You must label the overpack with the following labels: "Overpack", "This Side Up", "Lithium Metal and/or Lithium Ion Batteries", Class 9 label. Cirba Solutions can supply these to you, if needed.

### SHIPPING

- The offeror must have the proper training as required by the DOT (Contact Cirba Solutions for assistance).
- Paperwork should reflect Hazmat placarding.

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