



**DG Shipping Guide #34 – 49 CFR  
LITHIUM ION BATTERIES PACKED WITH  
EQUIPMENT**  
(Fully Regulated Class 9 Shipment per § 173.185)

Revision Date: 10/24/2025

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**49 CFR Shipping Instructions for GROUND Transportation**  
**UN3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, 9**  
**(§ 173.185(b) → Fully regulated cells & batteries)**

**ONLY TRAINED HAZMAT EMPLOYEES MAY SHIP LITHIUM BATTERIES USING THIS GUIDE.**

Some batteries are regulated when shipped or offered for transportation. If the battery is restricted, then all applicable hazardous materials regulations must be met. This guide provides information to assist you in how to ship the battery by road.



**How can I tell if the battery is regulated?**

Batteries normally have the size listed directly on the battery case which will help you identify whether or not it can be shipped without special packaging and package marking; in other words, shipped as non-restricted in transportation.



These instructions have been specifically prepared for the shipment of **fully regulated lithium ion batteries packed with equipment** (i.e., with a capacity exceeding 100 Wh per battery) prepared in accordance with the provisions of the 49 CFR (revised as of October 1, 2025).

**DO NOT USE THESE SHIPPING INSTRUCTIONS FOR OTHER BATTERY TYPES.**

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**DESCRIPTION**

**Items**

*(Identify and insert the description of items that may be shipped utilizing this template in this section.)*

**SHIPPING BY GROUND (49CFR)**

**Shipping Location**

Transport by Road / Motor Carrier

**Shipping Company**

*(Identify in this section the carriers used and carrier requirements)*  
(i.e., Motor carriers such as ...)

**NOTE**

Damaged, defective or recalled cells or batteries, that have the potential of producing a dangerous evolution of heat, fire, or short circuit (including those being returned to the manufacturer for safety reasons) and are offered for road or rail transport must be prepared in accordance with the provisions detailed in §173.185(f).  
Batteries meant for disposal or recycling must be prepared in accordance with the provisions in § 173.185(d).

**CLASSIFICATION**

**UN Number & Proper Shipping Name**

UN3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT

**Battery Testing Data**

LITHIUM CELLS OR BATTERIES MUST MEET THE REQUIREMENTS OF EACH TEST IN THE *UN Manual of Tests and Criteria, Part III, subsection 38.3*.  
A cell or battery and equipment containing a cell or battery that was first transported prior to January 1, 2006, and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Third Revised Edition, 2003, need not be retested.

**Battery Test Summary**

A battery test summary complying with the requirements of the UN Manual of Tests and Criteria, Part III, Subsection 38.3, Paragraph 38.3.3.5 is required to prove all cells/batteries have been properly tested.  
The battery test summary is not a transport document and is not required to be provided as a transport document. However, some carriers may request a copy be provided.

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**CLASSIFICATION**

**Site Testing Data**

*(Insert the location of battery testing documentation and/or attach to the shipping instructions)*

**Special Provisions**

181, 360, 388, 422, A54

**PACKAGING**

**Packing Requirements**

§173.185

**Watt-hour Rating**

Lithium ion cell > 60 Wh  
Lithium ion battery > 300 Wh

**Protect to prevent short circuits**

*The site must identify and insert information on how this will be done for applicable shipments.*

Equipped with an effective means of preventing external short circuits. (i.e., place a single battery in a plastic bag and then place in a package.)

THE CELLS OR BATTERIES MUST INCORPORATE A SAFETY VENTING DEVICE OR BE DESIGNED NOT TO RUPTURE UNDER THE NORMAL CONDITIONS OF TRANSPORT.

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

**Combination Packaging**

LITHIUM CELLS AND BATTERIES MUST BE PACKED IN COMBINATION PACKAGING AT A PG II PERFORMANCE LEVEL.

Each lithium cells and batteries must be packed in a non-metallic inner packaging that completely encloses them and separates them from contact with equipment, other devices or conductive materials in the outer packaging. Cells and batteries must be packaged in a manner to prevent short circuits, movement within the outer package, and accidental activation of the equipment. Once in their inner packagings, lithium cells and batteries must be placed in:

- a PG II outer packaging, then placed with the equipment in a strong, rigid outer packaging, or
- with the equipment in a PG II outer packaging.

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**PACKAGING**

The following UN specification packagings are permitted: metal boxes (4A, 4B or 4N); wooden boxes (4C1, 4C2, 4D, or 4F); fiberboard boxes (4G); solid plastic boxes (4H1 or 4H2); fiber drums (1G); metal drums (1A2, 1B2 or 1N2); plywood drums (1D) or plastic drum (1H2); plastic jerricans (3H2); or metal jerricans (3A2 or 3B2).

**Sample UN Spec Mark for PG II Fiberboard Box**

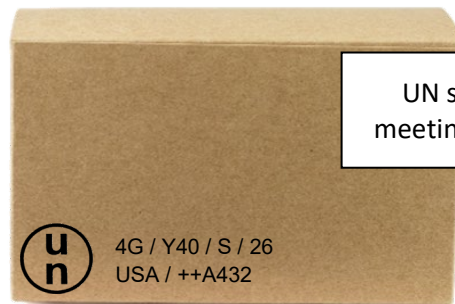


4G/Y35/S/26  
USA/+AB1234

Packaging must meet packing group II performance standard indicated by “Y” or a higher packing group I performance with an “X” in the specification marking

**Type of Packaging**

*(Insert the type of packagings to be used. In addition, insert closure instructions or the location of the closure instructions to be used.)*



UN specification fiberboard box meeting PG II performance standard

**Batteries with gross mass of  $\geq$  12kg**

Lithium batteries that weigh 12 kg (26.5 pounds) or more and have a strong, impact-resistant outer casing and assemblies of such batteries, may be packed in strong outer packagings; in protective enclosures (for example, in fully enclosed or wooden slatted crates); or on pallets or other handling devices, instead of packages meeting the UN performance packaging requirements. Batteries or battery assemblies must be secured to prevent inadvertent movement, and the terminals may not support the weight of other superimposed elements.

*Batteries packaged in this manner are not permitted for transportation by passenger aircraft and may be transported by cargo aircraft only if approved by the Associate Administrator prior to transportation.*



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**PACKAGING**

**Disposal or Recycling**

A lithium cell or battery offered for transportation or transported by motor vehicle to a permitted storage facility, disposal site, or for purposes of recycling is not required to meet the testing in the UN Manual of Tests and Criteria, is not required to incorporate a safety venting device, and is not required to be packed in UN Specification packaging if it is protected against short circuits and packed in a strong outer packaging conforming to the requirements of §§ 173.24 (General Requirements for packagings and packages) and 173.24a (Additional General Requirements for non-bulk packagings and packages).

**MARKING / LABELING**

**Marking**

Display a shipping label with name and address of shipper OR consignee, and mark the box with the UN number and proper shipping name (PSN):  
UN3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT

**Labeling**

Class 9 Battery Label



**Example of completed package for transportation by road:**



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**DOCUMENTATION**

<b>Document Type</b> (see § 172.201(a)(1))	NO specific form is required, but specific information is required. Hazardous materials must be listed first, be in a contrasting color, or be identified with an “X” in the HM column before the basic shipping description (note that if shipping a reportable quantity, the “X” may be replaced by “RQ”).
<b>Basic Shipping Description</b> (see § 172.202)	UN3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, 9
<b>Quantity and Type of Packaging</b> (see §172.202(c))	Total quantity of material, type of packaging (e.g. 4 Boxes, 20 kg each)

**DOCUMENTATION EXAMPLE**

No. of Units & Container Type	HM	DESCRIPTION	TOTAL QUANTITY
<b>4 boxes</b>	<b>X</b>	<b>UN3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, 9</b>	<b>12 lb</b>
<b>This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled/placarded, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.</b>			Emergency Response Phone Number:
<b>Signature: <u>Joe Shipper</u></b>		<b>Date: <u>01/01/2026</u></b>	Contract #

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### TRAINING REQUIREMENTS

#### Training Requirements

Hazmat employee training must include the following:

- *General awareness / familiarization training.*
- *Function-specific training.*
- *Safety training.*
- *Security awareness training.*
- *In-depth security training.* Only required for hazmat employees of a person required to have a security plan in accordance with Subpart I of this part who handle hazardous materials covered by the plan, perform a regulated function related to the hazardous materials covered by the plan, or are responsible for implementing the plan.

**Initial training:** A new hazmat employee, or a hazmat employee who changes job functions, may perform their functions prior to the completion of training if the employee performs those functions under the direct supervision of a properly trained and knowledgeable hazmat employee. The training must be completed within 90 days after employment or a change in job function.

**Recurrent training:** A hazmat employee must receive the training required by this subpart at least once every three years. Honeywell requires recurrent training every two years.

### STORAGE

#### Storage Location & Special Considerations

*(Insert storage requirements or special considerations.)*

### REFERENCES

<b>Code of Federal Regulations</b>	49 CFR Parts 100 to 185; October 1, 2025.
<b>Packing Requirements</b>	§173.185
<b>UN Specification Packaging</b>	Part 178, Subparts L and M
<b>Marking</b>	§172.301
<b>Labeling</b>	§172.400(a)
<b>Documentation</b>	§172.202
<b>Training Requirements</b>	§172.704

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