



DG Shipping Guide #36 – 49 CFR
**LITHIUM ION BATTERIES PACKED
WITH EQUIPMENT**
(Exempted Class 9 Shipment per § 173.185(c))

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(c) → Small, exempted lithium 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 **small lithium ion batteries packed with equipment** (i.e., with a capacity not exceeding 100 Wh per battery) prepared in accordance with the provisions of the exemption in § 173.185(c) of the 49 CFR (revised as of October 1, 2025).

DO NOT USE THESE SHIPPING INSTRUCTIONS FOR OTHER BATTERY TYPES.

All employees are responsible for compliance with applicable domestic and international dangerous goods transport regulations. All employees must be dangerous goods trained prior to using this shipping template. All information in this shipping template is accurate through the date of revision and must be validated against the regulations yearly and updated as regulations change.



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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 (49 CFR)

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 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(c)

Watt-hour Rating

Lithium ion cell ≤ 20 Wh
Lithium ion battery ≤ 100 Wh

Limit per package

The number of cells/batteries in each package is limited to the minimum number required to power the piece of equipment, plus two (2) spare sets.

Protect to prevent short circuits

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

Cells or batteries separated or packaged in a manner to prevent short circuits (i.e., place a single battery in a plastic bag and then place in a package.)

CELLS OR BATTERIES MUST INCORPORATE A SAFETY VENTING DEVICE OR BE DESIGNED NOT TO RUPTURE UNDER 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).

Packaging

LITHIUM CELLS AND BATTERIES MUST BE PACKED IN STRONG OUTER PACKAGING.

Each lithium cell and battery must be packed in a non-metallic inner packaging that completely encloses it and separates it from contact with equipment, other devices or conductive materials in the outer packaging before being packed in a strong outer packaging with the equipment.

The package must be capable of withstanding a 1.2-meter drop test in any orientation without damage to cells or batteries contained in the package, without shifting of the contents that would allow short circuiting and without release of package contents.

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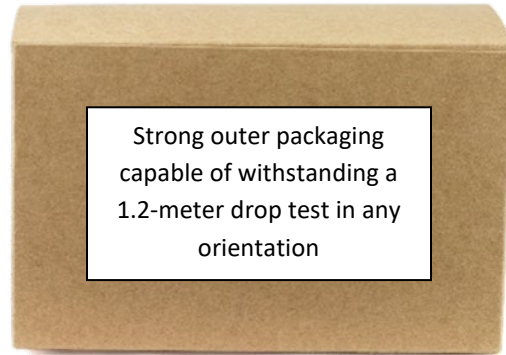
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PACKAGING

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.)



Disposal or Recycling
(see § 173.185(d))

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 & Labeling

Mark the package with the battery mark, as well as the name and address of the shipper or consignee. If not already displayed, add “UN3481” to the mark.

Note: A telephone number may remain on the mark through December 31, 2026, but is no longer required.





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MARKING / LABELING

Marking & Labeling

When lithium cells or batteries are contained in equipment in quantities exceeding 5 kg net weight of lithium batteries, the outer package must be appropriately marked:

“LITHIUM ION BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT”

“LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT”

Alternatively, the Cargo Aircraft Only (CAO) label may also be used.



Example of completed package for transportation by road:



Example of completed package exceeding 5 kg net weight of lithium cells or batteries for transportation by road:



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DOCUMENTATION

Document Type	Document is not required
Reporting Requirements	A written report submitted, retained, and updated in accordance with § 171.16 is required if a fire, violent rupture, explosion or dangerous evolution of heat occurs as a direct result of a lithium battery or battery-powered device.

TRAINING REQUIREMENTS

Training Requirements	Employees must be informed of the requirements of this shipping guide before offering small lithium batteries for transport. It is recommended that employees receive hazardous material general awareness training as well prior to preparing and offering lithium batteries for transport.
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STORAGE

Storage Location & Special Considerations	<i>(Insert storage requirements or special considerations.)</i>
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REFERENCES

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

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