



Energizer Brands, LLC.
533 Maryville University Drive
St. Louis, MO 63141
1-314-985-2000
www.Energizer.com

Lithium Primary/Metal Battery Transportation

1) Introduction

The rules governing the transportation of lithium batteries are divided into slightly differing regulations in the United States and outside the United States. Each set of rules is shown separately below for both battery transportation and for batteries packed with or inside equipment.

This guidance document is meant to cover expected situations for shipments of Energizer lithium batteries only. For special circumstances, please contact your authorized Energizer distributor.




Lithium batteries identified as being defective for safety reasons, that have been damaged or have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons).

Waste lithium batteries and lithium batteries being shipped for recycling or disposal are prohibited from air transport unless approved by the appropriate National Authority of the State of origin and the State of the Operator.

For all shipments, unless noted below, it is required that any person preparing or offering lithium cells or batteries for transport receive adequate instruction on these requirements commensurate with their responsibilities. It is Energizer's recommendation that all personnel involved in the preparation and transport of these products be Dangerous Goods/Hazardous Materials trained.

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Table 1
Label Summary Chart For Global Transport
Of Lithium Batteries Only

Shipping Mode	Li content	Net quantity wt. of batteries per package	Battery type			
Air	0.3g to ≤1g/cell 0.3g to ≤2g per battery	≤2.5 kg	L91, L92, LA522, Photo	YES	YES	YES
	≤0.3g/cell	≤2.5 kg	All Li coin and 2L76	YES (if more than one package in consignment)	YES	YES
	≤0.3g/cell	>2.5 kg	All Li coin and 2L76	YES	YES	YES
Land/Sea only	All	All	All	NO	YES	YES*

*Orange CAO label is only required on land/sea shipments when in the US. If the shipment is not intended for international air, it is allowable to use the "US DOT Prohibition Statement".

Table 2
Label Summary Chart For Global Transport
Of Lithium Batteries Packed In/With Equipment







Shipping Mode	Li content	Net quantity wt. of batteries per package			
Air	All	Not to exceed 5kg	NO	YES	NO
Land/Sea only	All	All	NO	YES	NO

Table 3
Lithium Battery Shipping Label Requirements

Image	Name	Size
	Lithium Battery Label	If the package cannot accommodate a <u>100 X 100 mm</u> label, the label may be sized down to 100 (width) X 70 (height) mm.
	Class 9 lithium	100 x 100 mm
	IATA Cargo Aircraft Only	120 x 110 mm
<p>“PRIMARY LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT” or “LITHIUM METAL BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT”</p>	US specific “Cargo Aircraft Only” language	This marking must be a background of contrasting color and the letters must be at least 6 mm in height.



2) Requirements for all Shipments of Lithium Batteries Only – Global

1. The batteries must be capable of passing the UN Model Regulation T-tests (UN Manual of Tests and Criteria, Part III, Sub-Section 38.3 Lithium Batteries).
2. The shippable container must be capable of passing a 1.2 m. drop test in any orientation without spillage of the contents of the packaging, damage to the batteries inside or shifting of the contents that could lead to short circuit.
3. The shippable container must be labeled with the labels shown in table 1 and 2.
4. The net weight of the lithium cells or batteries in the shippable container shall not exceed 2.5 kg for cargo aircraft only or 30kg for surface/vessel.
5. For customers re-shipping batteries, the telephone numbers (CHEMTEL phone numbers) may not be used without a subscription from CHEMTEL.

3) Requirements for all Shipments of Lithium Batteries packed in/with equipment – Global

1. The batteries must be capable of passing the UN Model Regulation T-tests (UN Manual of Tests and Criteria, Part III, Sub-Section 38.3 Lithium Batteries).
2. For batteries packaged **with** equipment only, the shippable container must be capable of passing a 1.2 m. drop test in any orientation without spillage of the contents of the packaging, damage to the batteries inside or shifting of the contents that could lead to short circuit.
3. For batteries contained **inside** equipment only, the equipment must be equipped with an effective means of preventing accidental activation.
4. For batteries contained **inside** equipment only, if the package contains less than four cells or two batteries installed within equipment, the package does not need to be labeled with the lithium battery handling label.
5. The shippable container must be labeled with the labels shown in table 1 and 2.
6. The net weight of the lithium cells or batteries in the shippable container shall not exceed 5 kg for aircraft.
7. The CHEMTEL information is not required for batteries packaged with or in equipment, Energizer uses the same label for all shipments (batteries and batteries with or in equipment.) For customers re-shipping batteries with or in equipment, this CHEMTEL information may not be used without a subscription from CHEMTEL.

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4) Within, To and From the United States

Batteries Only – All modes (49 CFR 173.185)

To ship lithium batteries by any method (rail, truck, sea vessel, air) within, to and from the United States, the shipments must meet

- The labeling criteria shown in table 1 and 3
- Packaging requirements listed in section 2
- The US specific labeling information shown below. Note – in the US all modes of transport require this marking.

The outer package that contains lithium cells or batteries must be appropriately marked with the US specific “Cargo Aircraft Only” language found in table 2 or labeled with a “CARGO AIRCRAFT ONLY” ICAO label no matter the mode of transport the shipment is offered for.

Batteries Contained In/Packed With Equipment- All modes (49 CFR 173.185)

To ship lithium batteries by any method (rail, truck, sea vessel, air) within, to and from the United States, the shipments must meet

- The labeling criteria shown in table 2 and 3
- Packaging requirements listed in section 3
- The information shown below.

For air shipments only:

- The number of batteries in each package is limited to the minimum number required to power the piece of equipment, plus two spare sets.

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5) International (Outside the United States)

Batteries Only - Air Only

To ship lithium batteries by air outside the US, the shipments must meet:

- The labeling criteria shown in table 1 and 3
 - Packaging requirements listed in section 2
 - The specific packing instruction per IATA depending on the grams of lithium and number of cells/batteries per package.
- **IATA Packing Instruction 968 1A** for cells with lithium content in excess of 1g or batteries in excess of 2g

NOTE: Energizer does not manufacture cells in excess of 1g and batteries in excess of 2g. For custom made packs that will extend above these thresholds contact your Energizer representative.

- **IATA Packing Instruction 968 1B** for lithium cells containing lithium metal no more than 1g and lithium batteries not exceeding 2g of lithium content.

To ship lithium batteries by air outside the US, the shipments must meet:

- The labeling criteria shown in table 1 and 3
- Packaging requirements listed in section 2
- The shippers declaration below

A shippers declaration is required which includes the following information:

- The name and address of the shipper and consignee
- UN 3090
- Lithium metal batteries, PI 968, 1B
- The number of packages and the gross weight of each package.

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Batteries Only - Surface (Truck/Sea/Rail) IMDG/ADR Regulations

To ship lithium batteries by rail, truck, or sea vessel outside the US, the shipments must meet:

- The labeling criteria shown in table 1 and 3
- Packaging requirements listed in section 2

Batteries Packed With or Contained In Equipment - Air Only

To ship lithium batteries packed in or with equipment by air outside the US, the shipments must meet:

- The labeling criteria shown in table 1 and 3
- Packaging requirements listed in section 3
- The specific packing instruction per IATA depending on the grams of lithium and number of cells/batteries per package.

- **IATA Packing Instructions 969 I and 970 I** for cells with lithium content in excess of 1g or batteries in excess of 2g

NOTE: Energizer does not manufacture cells in excess of 1g and batteries in excess of 2g. For custom made packs that will exceed these thresholds contact your Energizer representative.

- **IATA Packing Instructions 969 II and 970 II** for lithium cells containing lithium metal no more than 1g and lithium batteries not exceeding 2g of lithium content.

To ship lithium batteries by rail, truck, and sea vessel within, outside the United States, the shipments must meet

- The labeling criteria shown in table 2 and 3
- Packaging requirements listed in section 3
- The information shown below.

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

Batteries Packed With or Contained In Equipment - Surface (Truck/Sea/Rail) IMDG/ADR Regulations

To ship lithium batteries by rail, truck, and sea vessel within, outside the United States, the shipments must meet

- The labeling criteria shown in table 2 and 3
- Packaging requirements listed in section 3