



Lithium Primary/Metal Battery Transportation

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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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Label Summary Chart For Global Transport Of 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	NO

2) Within, To and From the United States

(shipping to first international destination only, for packages reshipped at international destinations refer to section 3 below)

2.1) Batteries Only - Surface and Air Transportation (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 criteria shown below.

- Batteries must be packaged in a manner to prevent short circuits and separated so that electrically active terminals cannot come into contact with each other.
- The gross weight of the shippable container shall not exceed 2.5 kg.
- 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.
- The shippable container must be labeled with the labels shown below:
 - Lithium Battery label: The minimum dimensions of the red bordered label are 105 mm x 74 mm. The red border is mandatory but the batteries, glass, and fire icon can be in black and white.
 - Cargo Aircraft Only labels: In the US there are two options. Shippers must use one of the following two.
 1. Orange Cargo Aircraft Only (CAO) label The minimum dimensions of the cargo aircraft only label are 120 mm x 110 mm **OR**
 2. "PRIMARY LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT" or "LITHIUM METAL BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT". This marking must be a background of contrasting color and the letters must be at least 6 mm in height. This marking must be marked on the same face of the packaging with the red-bordered label and cannot appear inside the red bordered label.
- The shippable container must be marked to indicate lithium batteries are present and that special procedures should be followed if the package is damaged.



PRIMARY LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT

For customers re-shipping batteries, the CHEMTREC information may not be used without a subscription from CHEMTREC.

- Each shipment must be accompanied by documentation that includes the following statement:

“This shipment contains Primary Lithium batteries. Do not damage or mishandle the packages. If package is damaged, flammability hazard may exist; batteries must be quarantined, inspected, and repacked.”

- The cell or battery must be of the type proven to meet the requirements of each test in the United Nations (UN) Manual of Tests and Criteria, Part III, Sub-Section 38.3 Lithium Batteries).

2.2) Batteries Contained In or Packed With Equipment, Surface and Air Transportation
(49 CFR 173.185)

- Batteries must be packaged in a manner to prevent short circuits and separated so that electrically active terminals cannot come into contact with each other.
- The shippable container must be labeled with the labels shown below:
 - Lithium Battery label: The minimum dimensions of the red bordered label are 105 mm x 74 mm. The red border is mandatory but the batteries, glass, and fire icon can be in black and white.
 - Cargo Aircraft Only labels: In the US there are two options. If the quantity of batteries packed with or in equipment is less than 5 kg net, then the orange CAO label is not required. If the net quantity of batteries packed is great than 5 kg then the shipper must use one of the following two.

1. Orange Cargo Aircraft Only (CAO) label The minimum dimensions of the cargo aircraft only label are 120 mm x 110 mm **OR**
 2. "PRIMARY LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT" or "LITHIUM METAL BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT". This marking must be a background of contrasting color and the letters must be at least 6 mm in height. This marking must be marked on the same face of the packaging with the red-bordered label and cannot appear inside the red bordered label.
- The shippable container must be marked to indicate lithium batteries are present and that special procedures should be followed if the package is damaged.



PRIMARY LITHIUM BATTERIES – FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT

The CHEMTREC 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 CHEMTREC information may not be used without a subscription from CHEMTREC.

- Each shipment must be accompanied by documentation that includes the following statement:

"This shipment contains Primary Lithium batteries. Do not damage or mishandle the packages. If package is damaged, flammability hazard may exist; batteries must be quarantined, inspected, and repacked."

- There is no maximum packaging gross weight.
- For air shipments only:
 - The package shall contain no more than the number of lithium batteries or cells necessary to power the intended piece of equipment
 - The net weight of the lithium batteries in the package does not exceed 5 kg.

International (Outside the United States)

3.1) Batteries Only, Air Only

3.1.1) International Air Transport Association (IATA) Packing Instruction 968 1A

- Cells with lithium metal content in excess of 1 g and batteries with lithium metal content in excess of 2 g
- No packages may exceed 35 kg for cargo aircraft only net weight of batteries.

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.

3.1.2) International Air Transport Association (IATA) Packing Instruction 968 1B

- Lithium cells containing lithium metal no more than 1 gram and lithium batteries not exceeding 2 g of lithium content.

- These batteries are assigned to Class 9 with exceptions noted below.
 - The packaging must be equivalent to UN spec packaging but does require certification.
 - A shippers declaration is required which includes the following information:
 1. The name and address of the shipper and consignee
 2. UN 3090
 3. Lithium metal batteries, PI 968, IB
 4. The number of packages and the gross weight of each package.
- Batteries must be packaged in a manner to prevent short circuits and separated so that electrically active terminals cannot come into contact with each other.
- The net weight of the lithium cells or batteries in the shippable container shall not exceed 2.5 kg for cargo aircraft 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.
- 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).
- The shippable container must be labeled with the label shown below, the Class 9 hazard label and the cargo aircraft only label. The minimum dimensions of the red bordered label are 105mm x 74 mm. The red border is mandatory but the batteries, glass and fire icon can be in black and white. The minimum dimensions of the cargo aircraft only label are 120 mm x 110 mm.

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For customers re-shipping batteries, the telephone numbers (CHEMTREC information) may not be used without a subscription from CHEMTREC.

- Each shipment must be accompanied by a document such as an air waybill with the following:
 - “This shipment contains Primary Lithium batteries. Do not damage or mishandle the packages. If package is damaged, flammability hazard may exist; batteries must be quarantined, inspected, and repacked.”
 - A telephone number for additional information.

3.1.3) International Air Transport Association (IATA) Packing Instruction 968 II

- Lithium batteries containing lithium metal no greater than 0.3 g, one 2.5 kg package allowed per shipment

- Packages containing no more than 8 cells or 4 batteries for cells with no more than 1 g and batteries with no more than 2 g lithium.

- These cells and batteries are not subject to Class 9 requirements with exceptions noted below.
- The cells and batteries must be packaged in strong outer packaging.

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- Batteries must be packaged in a manner to prevent short circuits and separated so that electrically active terminals cannot come into contact with each other.
- 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.
- 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).
- The shippable container must be labeled with the lithium battery handling label shown below and the cargo aircraft only label. The minimum dimensions of the red bordered label are 105mm x 74 mm. The red border is mandatory but the batteries, glass and fire icon can be in black and white. The minimum dimensions of the cargo aircraft only label are 120 mm x 110 mm.



For customers re-shipping batteries, the telephone numbers (CHEMTREC information) may not be used without a subscription from CHEMTREC.

- Each shipment must be accompanied by a document such as an air waybill with the following:
 - An indication the package contains lithium metal cells or batteries
 - The package must be handled with care and that a flammability hazard exists if the package is damaged
 - Special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary.
 - A telephone number for additional information.
- Each consignment must be accompanied with an air waybill with “Lithium metal batteries in compliance with Section II of PI 968”. The information should be shown in the “Nature and Quantity of Goods” box on the air waybill.

3.2) Batteries Only, Surface (Truck/Sea/Rail) Transportation (IMDG/ADR Regulations)

To ship lithium batteries by surface (rail, truck, sea vessel, etc) outside the United States, the shipments must meet the criteria shown below.

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- Cell and batteries must meet the requirements of UN Manual of Test and Criteria, Part III, sub-section 38.3.
- Cells and batteries shall be packed in strong outer packagings and inner packagings that completely enclose the cell or battery and protect the batteries from short circuit.
- Each package shall be marked with an indication:
 - The package contains 'lithium metal' cells or batteries;
 - The package shall be handled with care and that a flammability hazard exists if the package is damaged;
 - Information that special procedures shall be followed if the package is damaged and that inspection and possible repackaging is necessary; and
 - A telephone number of more information.

Packages containing lithium batteries must include the lithium battery label below. The minimum dimensions of the label are 120 mm x 110 mm. The red border is mandatory but the batteries, glass and fire can be in black and white.



For customers re-shipping batteries packed in or with equipment, the telephone numbers (CHEMTREC information) may not be used without a subscription from CHEMTREC.

- Each package shall be accompanied separately by a document with:
 - "This shipment contains Primary Lithium batteries. Do not damage or mishandle the packages. If package is damaged, flammability hazard may exist, batteries must be quarantined, inspected, and repacked."
 - A telephone number for additional information
- Each package shall be capable of withstanding a 1.2 m drop test in any orientation without damage to the cells or batteries, shifting of contents so as to allow uncontrolled battery to battery or cell-to-cell contact, or release of the contents.
- The maximum weight of a shippable package is 30 kg gross mass.



3.3) Batteries Packed With or Contained In Equipment, Air Transportation

3.3.1) IATA Packing Instructions 969 and 970 Section I

- Cells with lithium metal content in excess of 1 g and batteries with lithium metal content in excess of 2 g
- No packages may exceed 5 kg for passenger aircraft and 35 kg for cargo aircraft only net weight of batteries.

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.

3.3.2) IATA Packing Instructions 969 and 970 Section II

- Cells with lithium metal content more than 0.3 g but not exceeding 1 g and batteries with lithium metal content more than 0.3 g but not exceeding 2 g
- No packages can exceed 5 kg.

- These cells and batteries are not subject to Class 9 requirements with exceptions noted below.
- The cells and batteries must be packaged in strong outer packaging.
- 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).
- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- The maximum number of batteries in each package must be the minimum number required to power the equipment plus two spares.
- 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. This provision does not apply to batteries packaged **inside** equipment.
- For batteries contained **inside** equipment only, the equipment must be equipped with an effective means of preventing accidental activation.
- 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.
- The shippable container must be labeled with the label shown below. The minimum dimensions of the label are 105mm x 74 mm. The red border is mandatory but the batteries, glass and fire can be in black and white.

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For customers re-shipping batteries packed in or with equipment, the telephone numbers (CHEMTREC information) may not be used without a subscription from CHEMTREC.

- Each shipment must be accompanied by a document and/or an air waybill with an indication that:
 - “This shipment contains Primary Lithium batteries. Do not damage or mishandle the packages. If package is damaged, flammability hazard may exist, batteries must be quarantined, inspected, and repacked.”
 - A telephone number for additional information
 - “Lithium metal batteries in compliance with Section II of PI 969/970”. The information should be shown in the “Nature and Quantity of Goods” box on the air waybill.

3.4) Batteries Contained In or Packed With Equipment

Surface (Truck/Sea/Rail) Transportation (IMDG / ADR Regulations)

To ship lithium batteries packaged with, or inside equipment by surface (rail, truck, sea vessel, etc) outside the United States, the shipments must meet the criteria shown below.

- Cell and batteries must meet the requirements of UN Manual of Test and Criteria, Part III, sub-section 38.3.
- Cells and batteries, except when installed **inside** equipment, shall be packed in strong outer packagings and inner packagings that completely enclose the cell or battery and protect the batteries from short circuit.
- Cells or batteries installed **inside** equipment shall be protected from damage and short circuit and the equipment shall be equipped with a means of preventing accidental activation.
- The shippable container must be labeled with:
 - An indication the package contains ‘lithium metal’ cells or batteries;
 - An indication the package shall be handled with care and that a flammability hazard exists if the package is damaged;
 - An indication that special procedures shall be followed in the event the package is damaged, to include inspection and repacking if necessary; and
 - A telephone number for additional information.

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While not technically required, the IATA label shown below meets the marking requirements listed above for the shippable package. The minimum dimensions of the label are 120 mm x 110 mm. The red border is mandatory but the batteries, glass and fire can be in black and white.



For customers re-shipping batteries packed in or with equipment, the telephone numbers (CHEMTREC information) may not be used without permission and a subscription from CHEMTREC.

- Each shipment must be accompanied by a shipping document with an indication that:
 - “This shipment contains Primary Lithium batteries. Do not damage or mishandle the packages. If package is damaged, flammability hazard may exist, batteries must be quarantined, inspected, and repacked.”
 - A telephone number for additional information

Except for batteries installed **inside** equipment, each package shall be capable of withstanding a 1.2 m drop test in any orientation without damage to the cells or batteries, shifting of contents so as to allow uncontrolled battery to battery or cell-to-cell contact, or release of the contents.