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Interactive Guide to Shipping

Lithium Batteries



Produced By:

Office of Hazardous Materials Safety

Updated 2026



**Federal Aviation
Administration**



About This Guide

This guide is designed to create awareness of the International Civil Aviation Organization's (ICAO) 2025-2026 Edition of the Technical Instructions (Doc 9284) requirements for shipping lithium batteries by air.

It is **intended as a reference** to help users understand which requirements may apply based on different battery sizes and types.

This summary guide **does not replace regulatory requirements** and is **not considered training or instruction**.

Generally, personnel who perform dangerous goods functions are subject to training per Part 1;4, unless excepted, in which case any person preparing or offering cells or batteries for transport must receive adequate instruction on the requirements commensurate with the functions for which they are responsible.

Please be aware the carrier's requirements can be more restrictive than the regulations. Always check the full regulations and carrier requirements before shipping.



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Read Before Continuing



Rechargeable:

Lithium ion and Sodium ion

Non-Rechargeable:

Lithium-metal

Look for Watt-hour Rating for:

Lithium ion and Sodium ion

Lithium Metal Batteries Include:

Lithium Alloy Batteries

Lithium Ion Batteries Include:

Lithium ion Polymer Batteries

Batteries: Multiple cells

Cell: Single unit

Button Cell: Small circular cells

Equipment: Apparatus for which the cells or batteries will provide electrical power for its operation

Set of Cells or Batteries: The number of individual cells or batteries that are required to power each piece of equipment.

Important

You must select choices on each of the pages where options are given. Jumping or skipping steps **will result in inaccurate information** being displayed.

The terms and information presented have been streamlined or summarized.

This guide is **not a substitute** for the regulations.



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How to Navigate the Guide

On each screen, select the option that applies to your shipment.

You will see a summary of the applicable packing instructions at the end.

Get Started



Information Page

Previous Page

Progress Track

Additional Links



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All Batteries · General

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



What are you shipping?



Lithium Ion
Batteries and Cells



Lithium Metal
Batteries and Cells



Sodium Ion
Batteries and Cells



Back

All Batteries · General

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



What are you shipping?

If you have a mix of “with” and “contained in” see the information page for special details



Batteries and Cells
Only



Batteries and Cells
Packed With
Equipment



Batteries and Cells
Contained In
Equipment



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Lithium Ion · Step 1

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



What is the watt-hour (Wh) rating?

Batteries and cells must be shipped at no more than 30% state of charge (SOC)

LESS THAN OR EQUAL TO

$\leq$ 100 Wh Batteries

or

$\leq$ 20 Wh Cells

GREATER THAN

$>$ 100 Wh Batteries

or

$>$ 20 Wh Cells



Back

Lithium Ion · Only · Step 2

[Wh Calculator](#)

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 965 Section IA



Summary of Packing Instruction

 UN3480 Lithium Ion Batteries View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	State of Charge	- There are additional packing restrictions; view the information page for more - Include UN number, proper shipping name, shipper and recipient name and address - Apply Class 9 Lithium Battery and Cargo Aircraft Only Label - Ensure UN packing specification PG II - Include shipper's declaration
	> 100 Wh Batteries > 20 Wh Cells	 <i>Forbidden</i>	 <i>35 kg net per package</i>	Must be 30% or Less	



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Example Packing Instruction 965 Section IA



See the information page for additional packaging restrictions

ACME Corporation
123 Package Ave.
Bangor, ME 04401

ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001



UN3480
Lithium Ion
Batteries



4GV/Y13/S/27/USA/ACME0000



CARGO AIRCRAFT
ONLY

FORBIDDEN IN PASSENGER AIRCRAFT

**SHIPPERS DECLARATION
FOR DANGEROUS GOODS**

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.



Follow Packing Instruction 965 Section IB



Summary of Packing Instruction

 UN3480 Lithium Ion Batteries View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	State of Charge	- There are additional packing restrictions; view the information page for more - Include UN number, proper shipping name, shipper and recipient name and address - Apply Class 9 Lithium Battery, Cargo Aircraft Only Labels and Lithium Battery Mark - Cells and batteries must be packed in strong outer packaging - Include shipper's declaration, it must indicate "Section IB"
	≤ 100 Wh Batteries ≤ 20 Wh Cells	 Forbidden	 10 kg net per package	Must be 30% or Less	



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Lithium Ion · Only · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 965 Section IB



See the information page for additional packaging restrictions

ACME Corporation
123 Package Ave.
Bangor, ME 04401



ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001

UN3480
Lithium Ion
Batteries



SHIPPERS DECLARATION FOR DANGEROUS GOODS

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.

When listing the packing instruction, you must include “IB” after the number.



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Lithium Ion · Example · Packing Instruction

Restart Track



This document is for guidance and does not replace the regulations, and is not considered training or instruction.



What is the watt-hour (Wh) rating?

Batteries and cells must be shipped at no more than 30% state of charge (SOC)

LESS THAN OR EQUAL TO

$\leq$ 100 Wh Batteries

or

$\leq$ 20 Wh Cells

GREATER THAN

$>$ 100 Wh Batteries

or

$>$ 20 Wh Cells



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Lithium Ion · With Equipment · Step 2

[Wh Calculator](#)

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 966 Section I



Summary of Packing Instruction

 UN3481 Lithium Ion Batteries Packed With Equipment View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	Number Allowed	• Include UN number, proper shipping name, shipper, and recipient name and address • Lithium-ion cells and batteries must be offered for transport at a state of charge not exceeding 30% of their rated capacity • Apply Class 9 Lithium Battery Label. If > 5 kg, also apply Cargo Aircraft Only Label • UN packing specification PG II • Include shipper's declaration
	> 100 Wh Batteries > 20 Wh Cells	 <i>5 kg net per package</i>	 <i>35 kg net per package</i>	Minimum required to power equipment plus 2 spare sets per package	



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Lithium Ion · With Equipment · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 966 Section I



ACME Corporation
123 Package Ave.
Bangor, ME 04401

ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001



UN3481
Lithium Ion
Batteries Packed
With Equipment



★



4GV/Y13/S/27/USA/ACME0000

**SHIPPERS DECLARATION
FOR DANGEROUS GOODS**

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.

** The CAO label is only required for packages over 5 kg*



Follow Packing Instruction 966 Section II



Summary of Packing Instruction

 UN3481 Lithium Ion Batteries Packed With Equipment View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	Number Allowed	• Include the shipper and recipient name and address • Lithium ion cells and batteries with a Watt-hour rating in excess of 2.7 Wh must be offered for transport at a state of charge not exceeding 30% of their rated capacity • Lithium ion cells and batteries with a Watt-hour rating not in excess of 2.7 Wh should be offered for transport at a state of charge not exceeding 30% of their rated capacity • Apply Lithium Battery Mark • “Lithium ion batteries in compliance with Section II of PI966” must be written on the Air Waybill
	≤ 100 Wh Batteries ≤ 20 Wh Cells	 5 kg net per package	 5 kg net per package	Minimum required to power equipment plus 2 spare sets per package	



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Lithium Ion · With Equipment · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 966 Section II



ACME Corporation
123 Package Ave.
Bangor, ME 04401



ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001

SHIPPER AIR WAYBILL

“Lithium ion batteries,
in compliance with
Section II of PI966” must
be written on this
document when an
airway bill is used.



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Lithium Ion · Example · Packing Instruction

Restart Track



This document is for guidance and does not replace the regulations, and is not considered training or instruction.



What is the watt-hour (Wh) rating?

It's recommended batteries and cells be shipped at no more than 30% state of charge (SOC), or an indicated battery capacity not exceeding 25%.

LESS THAN OR EQUAL TO

$\leq$ 100 Wh Batteries

or

$\leq$ 20 Wh Cells

GREATER THAN

$>$ 100 Wh Batteries

or

$>$ 20 Wh Cells



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Lithium Ion · In Equipment · Step 2

[Wh Calculator](#)

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How many are in the package?

LESS THAN OR EQUAL TO

≤ 2 for Batteries

or

≤ 4 for Cells

GREATER THAN

> 2 for Batteries

or

> 4 for Cells



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Lithium Ion · In Equipment · Step 3

Wh Calculator

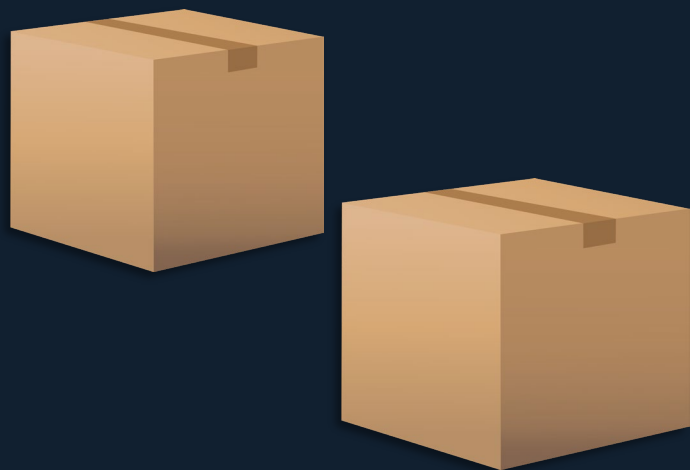
This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How many packages are in the shipment?

Use the number of packages you list on your shipping paperwork

LESS THAN OR EQUAL TO 2



≤

GREATER THAN 2



>



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Lithium Ion · In Equipment · Step 4

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 967 Section I



Summary of Packing Instruction

 UN3481 Lithium Ion Batteries Contained in Equipment View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	- UN number, proper shipping name, shipper, and recipient name and address - Shipped at $\leq 30\%$ SOC (<i>recommendation</i>) or an indicated battery capacity not exceeding 25% - Apply Class 9 Lithium Battery Label. If > 5 kg, also apply Cargo Aircraft Only Label - Packing: - Suitable material of adequate strength and design Strong, rigid outer packaging - Packed to prevent accidental activation and damage due to equipment contact - Include shipper's declaration
	> 100 Wh Batteries > 20 Wh Cells	 <i>5 kg net per package</i>	 <i>35 kg net per package</i>	



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Example Packing Instruction 967 Section I



ACME Corporation
123 Package Ave.
Bangor, ME 04401

ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001



UN3481
Lithium Ion Batteries
Contained in
Equipment



★

**SHIPPERS DECLARATION
FOR DANGEROUS GOODS**

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.

** The CAO label is only required for packages over 5 kg*



Follow Packing Instruction 967 Section II



Summary of Packing Instruction

 UN3481 Lithium Ion Batteries Contained in Equipment View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	• Include shipper and recipient name and address • Shipped at $\leq 30\%$ SOC (<i>recommendation</i>) or an indicated battery capacity not exceeding 25% • Apply Lithium Battery Mark* • Packing**: • Suitable material of adequate strength and design. • Strong, rigid outer packaging • Packed to prevent accidental activation and damage due to equipment contact • “Lithium ion batteries in compliance with Section II of PI967” must be written on the Air Waybill
	≤ 100 Wh Batteries ≤ 20 Wh Cells	 <i>5 kg net per package</i>	 <i>5 kg net per package</i>	

* The lithium battery mark is not applicable in certain situations. View the information page for more

**See PI967 for information on radio frequency ID tags



Example Packing Instruction 967 Section II



**SHIPPER
AIR WAYBILL**

“Lithium ion batteries,
in compliance with
Section II of PI967” must
be written on this
document when an
airway bill is used.

** The lithium battery mark is not applicable in certain situations; see the information page for details*



What are you shipping?

If you have a mix of “with” and “contained in,” see the information page for special details



Batteries and Cells
Only



Batteries and Cells
Packed With
Equipment



Batteries and Cells
Contained In
Equipment



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Lithium Metal · Step 1

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How much lithium does it contain?

Lithium content is the sum of the grams of lithium contained by the cells comprising a battery

LESS THAN OR EQUAL TO

$\leq$ 2 g for Batteries

or

$\leq$ 1 g for Cells

GREATER THAN

$>$ 2 g for Batteries

or

$>$ 1 g for Cells



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Lithium Metal · Only · Step 2

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 968 Section IA



Summary of Packing Instruction

 UN3090 Lithium Metal Batteries View Example	Lithium Content	Passenger Aircraft	Cargo Aircraft	- There are additional packing restrictions; view the information page for more - Include UN number, proper shipping name, shipper and recipient name and address - Apply Class 9 Lithium Battery and Cargo Aircraft Only Label - Ensure UN packing specification PG II - Include shipper's declaration
	> 2 g Batteries > 1 g Cells	 Forbidden	 35 kg net per package	



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Lithium Metal · Only · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 968 Section IA



See the information page for additional packaging restrictions

ACME Corporation
123 Package Ave.
Bangor, ME 04401



ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001

UN3090
Lithium Metal
Batteries



4GV/Y13/S/27/USA/ACME0000



SHIPPERS DECLARATION FOR DANGEROUS GOODS

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.



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Lithium Metal · Example · Packing Instruction

Restart Track



This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 968 Section IB



Summary of Packing Instruction

 UN3090 Lithium Metal Batteries View Example	Lithium Content	Passenger Aircraft	Cargo Aircraft	- There are additional packing restrictions; view the information page for more - Include UN number, proper shipping name, shipper, and recipient name and address - Apply Class 9 Lithium Battery, Cargo Aircraft Only Labels, and Lithium Battery Mark - Performance standard 1.2 m drop test; 3 m stack test - Include shipper's declaration, and it must indicate "Section IB"
	$\leq 2\text{ g}$ Batteries $\leq 1\text{ g}$ Cells	 Forbidden	 <i>2.5 kg net per package</i>	



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Lithium Metal · Only · Final

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Example Packing Instruction 968 Section IB



See the information page for additional packaging restrictions

ACME Corporation
123 Package Ave.
Bangor, ME 04401



ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001

UN3090
Lithium Metal
Batteries



SHIPPERS DECLARATION FOR DANGEROUS GOODS

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.

When listing the packing instruction, you must include “IB” after the number.



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Lithium Metal · Example · Packing Instruction

Restart Track



This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How much lithium does it contain?

Lithium content is the sum of the grams of lithium contained by the cells comprising a battery

LESS THAN OR EQUAL TO

$\leq$ 2 g for Batteries

or

$\leq$ 1 g for Cells

GREATER THAN

$>$ 2 g for Batteries

or

$>$ 1 g for Cells



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Lithium Metal · With Equipment · Step 2

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 969 Section I



Summary of Packing Instruction

 UN3091 Lithium Metal Batteries Packed With Equipment View Example	Lithium Content	Passenger Aircraft	Cargo Aircraft	Number Allowed	• Include UN number, proper shipping name, shipper and recipient name and address • Apply Class 9 Lithium Battery Label. If > 5 kg, also apply Cargo Aircraft Only Label • UN packing specification PG II • Include shipper's declaration • Packaged to protect against short-circuiting, the equipment must be secured against movement within the outer packaging.
	> 2 g Batteries > 1 g Cells	 5 kg net per package	 35 kg net per package	Minimum required to power equipment plus 2 spare sets per package	



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Example Packing Instruction 969 Section I



ACME Corporation
123 Package Ave.
Bangor, ME 04401

ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001



UN3091
Lithium Metal
Batteries Packed With
Equipment



★



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**SHIPPERS DECLARATION
FOR DANGEROUS GOODS**

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.

** The CAO label is only required for packages over 5 kg*



Follow Packing Instruction 969 Section II



Summary of Packing Instruction

 UN3091 Lithium Metal Batteries Packed With Equipment View Example	Lithium Content	Passenger Aircraft	Cargo Aircraft	Number Allowed	• Include shipper and recipient name and address • Lithium Battery Mark • Packed to protect against short circuiting, the equipment must be secured against movement within the outer packaging. • Performance standard 1.2 m drop test • “Lithium metal batteries in compliance with Section II of PI 969” must be written on the Air Waybill
	≤ 2 g Batteries ≤ 1 g Cells	 5 kg net per package	 5 kg net per package	Minimum required to power equipment plus 2 spare sets per package	



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Example Packing Instruction 969 Section II



ACME Corporation
123 Package Ave.
Bangor, ME 04401



ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001

SHIPPER AIR WAYBILL

“Lithium metal
batteries, in compliance
with Section II of PI969”
must be written on this
document when an
airway bill is used.



Back

Lithium Metal · Example · Packing Instruction

Restart Track



This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How much lithium does it contain?

Lithium content is the sum of the grams of lithium contained by the cells comprising a battery

LESS THAN OR EQUAL TO

$\leq$ 2 g for Batteries

or

$\leq$ 1 g for Cells

GREATER THAN

$>$ 2 g for Batteries

or

$>$ 1 g for Cells



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Lithium Metal · In Equipment · Step 2

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How many are in the package?



LESS THAN OR EQUAL TO

$\leq$ 2 Batteries

or

$\leq$ 4 Cells

GREATER THAN

$>$ 2 Batteries

or

4 Cells

ONLY

**Button Cell
Batteries**

Includes those installed in circuit boards



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Lithium Metal · In Equipment · Step 3

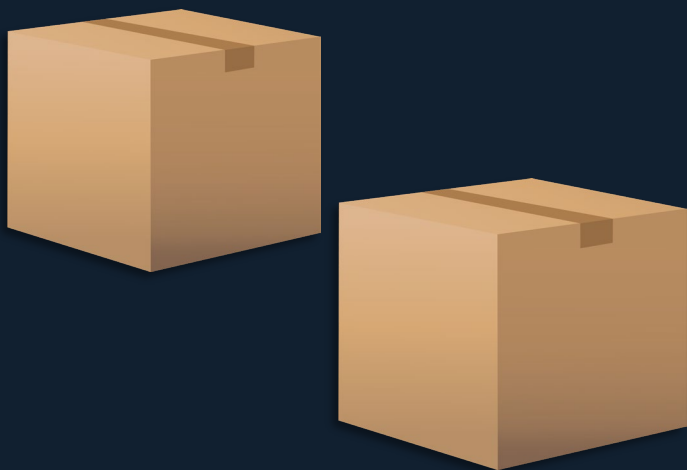
This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How many packages are in the shipment?

Use the number of packages you list on your shipping paperwork

LESS THAN OR EQUAL TO 2



≤

GREATER THAN 2



>



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Lithium Metal · In Equipment · Step 4

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 970 Section I

Summary of Packing Instruction

 UN3091 Lithium Metal Batteries Contained in Equipment View Example	Lithium Content	Passenger Aircraft	Cargo Aircraft	• Include UN number, proper shipping name, shipper, and recipient name and address • Apply Class 9 Label. If > 5 kg, also apply Cargo Aircraft Only Label • Include shipper's declaration • The quantity of lithium metal contained in any piece of equipment must not exceed 12 g per cell and 500 g per battery. • Packing: • Suitable material of adequate strength and design • Strong, rigid outer packaging • Packed to prevent accidental activation and damage due to equipment contact
	> 2 g Batteries > 1 g Cells	 <i>5 kg net per package</i>	 <i>35 kg net per package</i>	



Back



Example Packing Instruction 970 Section I



ACME Corporation
123 Package Ave.
Bangor, ME 04401

ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001



UN3091
Lithium Metal
Batteries Contained
in Equipment



★

**SHIPPERS DECLARATION
FOR DANGEROUS GOODS**

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.

** The CAO label is only required for packages over 5 kg*



Follow Packing Instruction 970 Section II

Summary of Packing Instruction

 UN3091 Lithium Metal Batteries Contained in Equipment View Example	Lithium Content	Passenger Aircraft	Cargo Aircraft	• Include shipper and recipient name and address • Apply Lithium Battery Mark* • Cells and batteries may be offered for transport, provided that each cell and battery meets the provisions of: • for cells, the lithium content is not more than 1 g • for batteries, the aggregate lithium content is not more than 2 g. • Packing**: • Suitable material of adequate strength and design • Strong, rigid outer packaging • Packed to prevent accidental activation and damage due to equipment contact • “Lithium metal batteries in compliance with Section II of PI970” must be written on the Air Waybill
	≤ 2 g Batteries ≤ 1 g Cells	 <i>5 kg net per package</i>	 <i>5 kg net per package</i>	

* The lithium battery mark is not applicable in certain situations. View the information page for more

** See PI 970 for information on radio frequency ID tags



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Lithium Metal · In Equipment · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 970 Section II



ACME Corporation
123 Package Ave.
Bangor, ME 04401



ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001

SHIPPER AIR WAYBILL

“Lithium metal
batteries, in compliance
with Section II of PI970”
must be written on this
document when an
airway bill is used.

** The lithium battery mark is not applicable in certain situations; go to the information page for details*



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Lithium Metal · Example · Packing Instruction

Restart Track



This document is for guidance and does not replace the regulations, and is not considered training or instruction.



What are you shipping?

If you have a mix of “with” and “contained in,” see the information page for special details



Batteries and Cells
Only



Batteries and Cells
Packed With
Equipment



Batteries and Cells
Contained In
Equipment



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Sodium Ion · Step 1

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 976



Summary of Packing Instruction

 UN3551 Sodium Ion Batteries View Example	Passenger Aircraft	Cargo Aircraft	State of Charge	- There are additional packing restrictions; view the information page for more - Include UN number, proper shipping name, shipper, and recipient name and address - Apply Class 9 Lithium Battery and Cargo Aircraft Only Label - Ensure UN packing specification PG II - Include shipper's declaration
	 Forbidden	 35 kg net per package	Must be 30% or less	



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Sodium Ion · Only · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 976



See the information page for additional packaging restrictions

ACME Corporation
123 Package Ave.
Bangor, ME 04401



ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001

UN3551
Sodium Ion
Batteries



4GV/Y13/S/27/USA/ACME0000



SHIPPERS DECLARATION FOR DANGEROUS GOODS

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.



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Sodium Ion · Example · Packing Instruction

Restart Track



This document is for guidance and does not replace the regulations, and is not considered training or instruction.



What is the watt-hour (Wh) rating?

LESS THAN OR EQUAL TO

$\leq$ 100 Wh Batteries

or

$\leq$ 20 Wh Cells

GREATER THAN

$>$ 100 Wh Batteries

or

$>$ 20 Wh Cells



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Sodium Ion · With Equipment · Step 2

Wh Calculator

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Follow Packing Instruction 977 Section I



Summary of Packing Instruction

 UN3552 Sodium Ion Batteries Packed With Equipment View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	Number Allowed	- Include UN number, proper shipping name, shipper, and recipient name and address - Cells and batteries must be protected against short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit. - Apply Class 9 Lithium Battery Label. If > 5 kg, also apply Cargo Aircraft Only Label - UN packing specification PG II - Include shipper's declaration
	> 100 Wh Batteries > 20 Wh Cells	 <i>5 kg net per package</i>	 <i>35 kg net per package</i>	Minimum required to power equipment plus 2 spare sets per package	



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Sodium Ion · With Equipment · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 977 Section I



ACME Corporation
123 Package Ave.
Bangor, ME 04401

ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001



UN3552
Sodium Ion
Batteries Packed
With Equipment



★



4GV/Y13/S/27/USA/ACME0000

**SHIPPERS DECLARATION
FOR DANGEROUS GOODS**

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.

** The CAO label is only required for packages over 5 kg*



Follow Packing Instruction 977 Section II



Summary of Packing Instruction

 UN3552 Sodium Ion Batteries Packed With Equipment View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	Number Allowed	• Include shipper and recipient name and address • Apply Lithium Battery Mark • Performance standard 1.2 m drop • Cells and batteries must be protected against short circuits. This includes protection against contact with electrically conductive material within the same packaging that could lead to a short circuit. • “Sodium ion batteries in compliance with Section II of PI977” must be written on the Air Waybill
	≤ 100 Wh Batteries ≤ 20 Wh Cells	 5 kg net per package	 5 kg net per package	Minimum required to power equipment plus 2 spare sets per package	



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Sodium Ion · With Equipment · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 977 Section II



ACME Corporation
123 Package Ave.
Bangor, ME 04401



ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001

SHIPPER AIR WAYBILL

“Sodium ion batteries,
in compliance with
Section II of PI977” must
be written on this
document when an
airway bill is used.



Back

Sodium Ion · Example · Packing Instruction

Restart Track



This document is for guidance and does not replace the regulations, and is not considered training or instruction.



What is the watt-hour (Wh) rating?

LESS THAN OR EQUAL TO

$\leq$ 100 Wh Batteries

or

$\leq$ 20 Wh Cells

GREATER THAN

$>$ 100 Wh Batteries

or

$>$ 20 Wh Cells



Back

Sodium Ion · In Equipment · Step 2

Wh Calculator

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How many are in the package?

LESS THAN OR EQUAL TO

$\leq$ 2 for Batteries

or

$\leq$ 4 for Cells

GREATER THAN

$>$ 2 for Batteries

or

$>$ 4 for Cells



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Sodium Ion · In Equipment · Step 3

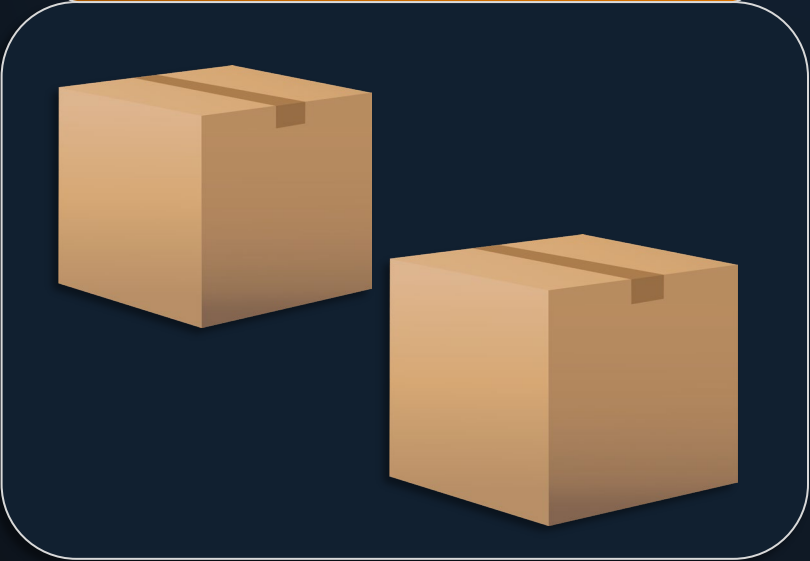
This document is for guidance and does not replace the regulations, and is not considered training or instruction.



How many packages are in the shipment?

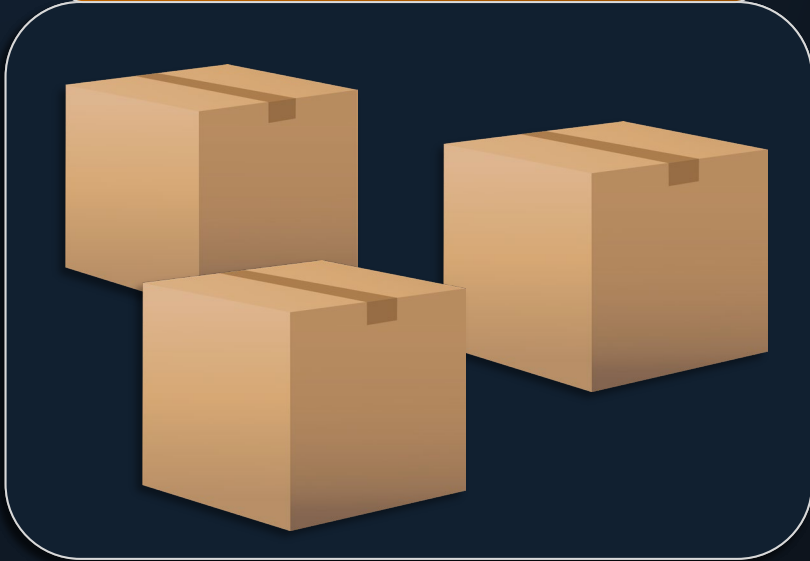
Use the number of packages you list on your shipping paperwork

LESS THAN OR EQUAL TO 2



≤

GREATER THAN 2



>



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Follow Packing Instruction 978 Section I

Summary of Packing Instruction

 UN3552 Sodium Ion Batteries Contained in Equipment View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	• UN number, proper shipping name, shipper, and recipient name and address • Apply Class 9 Lithium Battery Label. If > 5 kg, also apply Cargo Aircraft Only Label • Packing: • Suitable material of adequate strength and design. • Strong, rigid outer packaging • Packed to prevent accidental activation and damage due to equipment contact • Include shipper's declaration
	> 100 Wh Batteries > 20 Wh Cells	 <i>5 kg net per package</i>	 <i>35 kg net per package</i>	



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Sodium Ion · In Equipment · Final

This document is for guidance and does not replace the regulations, and is not considered training or instruction.



Example Packing Instruction 978 Section I



ACME Corporation
123 Package Ave.
Bangor, ME 04401

ACME Corporation
321 Hollywood St.
Los Angeles, CA 90001



UN3552
Sodium Ion Batteries
Contained in
Equipment



★

**SHIPPERS DECLARATION
FOR DANGEROUS GOODS**

Helpful Tip: This document is prepared in accordance with 49 CFR Part 172 Subpart C.

** The CAO label is only required for packages over 5 kg*



Follow Packing Instruction 978 Section II



Summary of Packing Instruction

 UN3552 Sodium Ion Batteries Contained in Equipment View Example	Watt Hour	Passenger Aircraft	Cargo Aircraft	• Include shipper and recipient name and address • Apply Lithium Battery Mark* • Packing**: • Suitable material of adequate strength and design. • Strong, rigid outer packaging • Packed to prevent accidental activation and damage due to equipment contact • “Sodium ion batteries in compliance with Section II of PI978” must be written on the Air Waybill
	≤ 100 Wh Batteries ≤ 20 Wh Cells	 <i>5 kg net per package</i>	 <i>5 kg net per package</i>	

* The lithium battery mark is not applicable in certain situations. View the information page for more

** See PI 978 for information on radio frequency ID tags



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Example Packing Instruction 978 Section II



**SHIPPER
AIR WAYBILL**

“Sodium ion batteries,
in compliance with
Section II of PI978” must
be written on this
document when an
airway bill is used.

** Not applicable in certain situations;
go to the information page for details*



Information Page

Select Next to Continue



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Note on In and With Equipment Shipments

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Summary: You must meet all requirements for both packaging instructions and annotate accompanying documentation accordingly.

Details: Where a package contains a combination of batteries contained in equipment and batteries packed with equipment that meet the limits for cells or batteries of Section II, the following additional requirements apply:

1. The shipper must ensure that all applicable parts of both packing instructions are met.
2. The total mass of batteries contained in any package may not exceed 5 kg.
3. The words “[cite the proper name] batteries, in compliance with Section II of [cite the packing instruction number]” must be placed on the air waybill when an air waybill is used.



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Lithium Battery Mark Exception

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The requirement to apply the lithium battery mark **does not apply** to:

1. Packages containing only button cell batteries installed in equipment (including circuit boards);
2. Packages containing no more than four cells or two batteries installed in equipment, where there are not more than two packages in the shipment.



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Packaging Restrictions

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Outer Packages

PI965, PI968, & PI976 UN 3090, Lithium metal batteries (PI 968), UN 3480, Lithium ion batteries (PI 965), and UN 3551, Sodium ion batteries (PI 976) **must not be packed in the same outer packaging** with dangerous goods classified in Class 1 (explosives) other than Division 1.4S, Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) or Division 5.1 (oxidizers).

Overpacks

PI965 & PI968 Section IA, IB, and II
Packages containing cells or batteries **must not be placed in an overpack** with packages containing dangerous goods classified in Class 1 other than Division 1.4S, Division 2.1, Class 3, Division 4.1 or Division 5.1.



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