

LITHIUM BATTERIES AND SODIUM ION BATTERIES GUIDANCE

IN ACCORDANCE WITH

IATA DANGEROUS GOODS REGULATIONS 66TH EDITION 2025



Next

2025 Lithium Batteries and Sodium Ion Batteries Regulations

Defective / Damaged Batteries:

DHL will **NOT** accept any cells or batteries identified by the manufacturer as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit (e.g. those being returned to the manufacturer for safety reasons).

DHL will **NOT** accept any waste batteries meant for recycling or disposal purposes (regardless of condition).

→ *A defective battery may not exhibit any damage at all!*

Any equipment packed with or containing lithium batteries (in particular equipment returned for repair purposes as part of reverse logistics/service parts program) exhibiting above mentioned condition, must have the **batteries removed** from the equipment in order to be accepted for carriage with DHL.

Important Disclaimer:

Please note that the information contained in this Guide is purely illustrative and does not replace the study of the Dangerous Goods Regulations to perform any tasks related to the preparation of shipments containing Lithium / Sodium Batteries.

DHL will not be held responsible for any inaccuracy, error or omission, regardless of cause.

[Previous](#)[Next](#)

2025 Sodium Ion Batteries Regulations

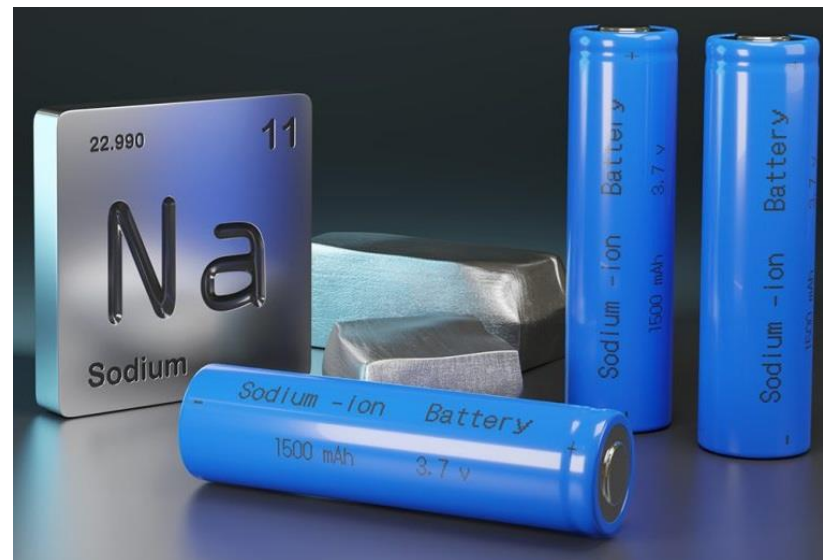
Sodium ion battery, is a rechargeable electrochemical system where the positive and negative electrode are both intercalation or insertion compounds, constructed with no metallic sodium (or sodium alloy) in either electrode and with an organic non aqueous compound as an electrolyte.

Sodium ion batteries are classified in Class 9 – Miscellaneous Dangerous Goods as:

- UN3551 **Sodium ion batteries**
- UN3552 **Sodium ion batteries contained in equipment**
- UN3552 **Sodium ion batteries packed with equipment**

Sodium ion cells and batteries **with organic electrolyte must** be transported as UN3551 or UN3552 as appropriate.

Note: Sodium ion batteries **with aqueous alkali electrolyte** must be transported as **UN 2795 Batteries, wet, filled with alkali**.

[Previous](#)[Next](#)

2025 Lithium Batteries and Sodium Ion Batteries Regulations: Battery Types

Step 1 – What type of battery are you shipping?

Sodium Ion Batteries or Cells



Rechargeable (secondary) sodium ion cells or batteries
Commonly found in grid energy storage, electric vehicles.

Lithium Ion Batteries or Cells



Rechargeable (secondary) lithium ion or lithium polymer cells or batteries.
Very commonly found in portable consumer electronics such as laptops, mobile phones, tablets, MP3 players, camcorders, cordless power tools, etc.

Lithium Metal Batteries or Cells



Non-rechargeable (primary) lithium metal or lithium alloy cells or batteries
Longer life than standard alkaline batteries/cells, and commonly used in cameras, smoke detectors, etc.

[Previous](#)



2025 Lithium Batteries Regulations: Lithium Ion Batteries

Step 2 – How are you shipping them?

Batteries / cells only



Batteries / cells
packed with
equipment
(separately in the
same package)



Batteries / cells
contained in
equipment





2025 Lithium Batteries Regulations: Lithium Metal Batteries

Step 2 – How are you shipping them?

Batteries / cells only



Batteries / cells
packed with
equipment
(separately in the
same package)



Batteries / cells
contained in
equipment





2025 Sodium Ion Batteries Regulations: Sodium Ion Batteries

Step 2 – How are you shipping them?

Batteries / cells only

Batteries / cells
packed with
equipment
(separately in the
same package)

Batteries / cells
contained in
equipment



2025 Lithium Batteries Regulations: Watt Hour Rating

Step 3 – What is the capacity (Watt Hour¹ rating) of your battery?

Cells
 $\leq 20 \text{ Wh}$
or Batteries
 $\leq 100 \text{ Wh}$

Cells
 $> 20 \text{ Wh}$
or Batteries
 $> 100 \text{ Wh}$

¹The Watt Hours must be indicated on the outside of the battery, for batteries manufactured as of January 2009. Laptops, mobile phones and other small consumer electronics have batteries with less than 100 Watt Hours (except perhaps some extra duration batteries). Use the formula **Ampere Hours x Voltage** in case the Watt Hour rating is not marked on the battery).

→ **Cell**
a single encased electrochemical unit

→ **Battery**
a number of cells electrically connected to each other and packed together in a common housing



2025 Lithium Batteries Regulations: Watt Hour Rating

Step 3 – What is the capacity (Watt Hour¹ rating) of your battery?

Cells
 $\leq 20 \text{ Wh}$
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 $\leq 100 \text{ Wh}$

Cells
 $> 20 \text{ Wh}$
or Batteries
 $> 100 \text{ Wh}$

¹The Watt Hours must be indicated on the outside of the battery, for batteries manufactured as of January 2009. Laptops, mobile phones and other small consumer electronics have batteries with less than 100 Watt Hours (except perhaps some extra duration batteries). Use the formula **Ampere Hours x Voltage** in case the Watt Hour rating is not marked on the battery).

→ **Cell**
a single encased electrochemical unit

→ **Battery**
a number of cells electrically connected to each other and packed together in a common housing



2025 Lithium Batteries Regulations: Watt Hour Rating

Step 3 – What is the capacity (Watt Hour¹ rating) of your battery?

Cells
 $\leq 20 \text{ Wh}$
or Batteries
 $\leq 100 \text{ Wh}$

Cells
 $> 20 \text{ Wh}$
or Batteries
 $> 100 \text{ Wh}$

¹The Watt Hours must be indicated on the outside of the battery, for batteries manufactured as of January 2009. Laptops, mobile phones and other small consumer electronics have batteries with less than 100 Watt Hours (except perhaps some extra duration batteries). Use the formula **Ampere Hours x Voltage** in case the Watt Hour rating is not marked on the battery).

→ **Cell**
a single encased electrochemical unit

→ **Battery**
a number of cells electrically connected to each other and packed together in a common housing



2025 Lithium Batteries Regulations: Lithium Content

Step 3 – How much lithium does your battery / cell contain?

Cells
 $\leq 1 \text{ g}$
or Batteries
 $\leq 2 \text{ g}$

Cells
 $> 1 \text{ g}$
or Batteries
 $> 2 \text{ g}$



2025 Lithium Batteries Regulations: Lithium Content

Step 3 – How much lithium does your battery / cell contain?

Cells
 $\leq 1 \text{ g}$
or Batteries
 $\leq 2 \text{ g}$

Cells
 $> 1 \text{ g}$
or Batteries
 $> 2 \text{ g}$



2025 Lithium Batteries Regulations: Lithium Content

Step 3 – How much lithium does your battery / cell contain?

Cells
 $\leq 1 \text{ g}$
or Batteries
 $\leq 2 \text{ g}$

Cells
 $> 1 \text{ g}$
or Batteries
 $> 2 \text{ g}$



2025 Lithium Batteries Regulations: Lithium Ion Batteries

Step 4 – How many cells or batteries does your package contain in total?

≤ 4 Cells
or
 ≤ 2 Batteries

> 4 Cells
or
 > 2 Batteries

Please note:

Do not confuse package with overpack. The above refers to the number of cells or batteries per individual package regardless of whether the package is contained in an overpack.



2025 Lithium Batteries Regulations: Lithium Ion Batteries

Step 4 – How many packages are in the consignment?

≤ 2 packages

> 2 packages



2025 Lithium Batteries Regulations: Lithium Metal Batteries

Step 4 – How many cells or batteries does your package contain in total?

≤ 4 Cells
or
 ≤ 2 Batteries

> 4 Cells
or
 > 2 Batteries

Please note:

Do not confuse package with overpack. The above refers to the number of cells or batteries per individual package regardless of whether the package is contained in an overpack.



2025 Lithium Batteries Regulations: Lithium Metal Batteries

Step 4 – How many packages are in the consignment?

≤ 2 packages

> 2 packages



2025 Sodium Ion Batteries Regulations: Watt Hour Rating

Step 3 – What is the capacity (Watt Hour¹ rating) of your battery?

Cells
 $\leq 20 \text{ Wh}$
or Batteries
 $\leq 100 \text{ Wh}$

Cells
 $> 20 \text{ Wh}$
or Batteries
 $> 100 \text{ Wh}$

¹The Watt Hours must be indicated on the outside of the battery, for batteries manufactured as of January 2009. Laptops, mobile phones and other small consumer electronics have batteries with less than 100 Watt Hours (except perhaps some extra duration batteries). Use the formula **Ampere Hours x Voltage** in case the Watt Hour rating is not marked on the battery).

→ **Cell**
a single encased electrochemical unit

→ **Battery**
a number of cells electrically connected to each other and packed together in a common housing



2025 Sodium Ion Batteries Regulations: Watt Hour Rating

Step 3 – What is the capacity (Watt Hour¹ rating) of your battery?

Cells
 $\leq 20 \text{ Wh}$
or Batteries
 $\leq 100 \text{ Wh}$

Cells
 $> 20 \text{ Wh}$
or Batteries
 $> 100 \text{ Wh}$

¹The Watt Hours must be indicated on the outside of the battery, for batteries manufactured as of January 2009. Laptops, mobile phones and other small consumer electronics have batteries with less than 100 Watt Hours (except perhaps some extra duration batteries). Use the formula **Ampere Hours x Voltage** in case the Watt Hour rating is not marked on the battery).

→ **Cell**
a single encased electrochemical unit

→ **Battery**
a number of cells electrically connected to each other and packed together in a common housing



2025 Sodium Ion Batteries Regulations: Sodium Ion Batteries

Step 4 – How many cells or batteries does your package contain in total?

≤ 4 Cells
or
 ≤ 2 Batteries

> 4 Cells
or
 > 2 Batteries

Please note:

Do not confuse package with overpack. The above refers to the number of cells or batteries per individual package regardless of whether the package is contained in an overpack.



2025 Sodium Ion Batteries Regulations: Sodium Ion Batteries

Step 4 – How many packages are in the consignment?

≤ 2 packages

> 2 packages



UN3480, Lithium Ion Batteries / Cells – PI965 Section IA

Packaging:

Each battery /cell must be protected against a short circuit and placed in an inner packaging that completely encloses the battery /cell, then placed in a strong rigid outer packaging.

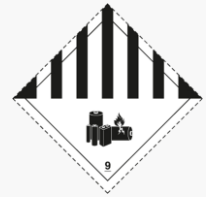
State of Charge (SoC) of the battery or cell must not exceed 30%.

Cells and batteries must not be packed in the same outer packaging, or placed in an overpack with, dangerous goods classified in Class 1 (except 1.4S), Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) and Division 5.1 (oxidizers).

Maximum **35 kg** net quantity of lithium batteries or cells per package. **Cargo Aircraft Only (CAO)**

Package test: Packing Group II performance standards. **UN specification packaging is required.**

Labeling / Marking:



Documentation:

Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:

☐ “**Dangerous Goods as per associated DGD**” or “**Dangerous Goods as per associated Shipper's Declaration**”

☐ “**Cargo Aircraft Only**” or “**CAO**”

DHL Services: (TDI = Time Definite International , ACS = Air Capacity Sales)




TDI - Account must be approved. **Lithium ion batteries/cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state.** Service Code **HE**

ACS - Select **DG** and mention **CAO** in the restricted commodity type

ADR




UN3480, Lithium Ion Batteries / Cells – PI965 Section IB

<p><u>Packaging:</u></p> <p>Each battery /cell must be protected against a short circuit and placed in an inner packaging that completely encloses the battery /cell, then placed in a strong rigid outer packaging.</p> <p>Cells and batteries must not be packed in the same outer packaging, or placed in an overpack with, dangerous goods classified in Class 1 (except 1.4S), Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) and Division 5.1 (oxidizers).</p> <p>State of Charge (SoC) of the battery or cell must not exceed 30%.</p> <p>Maximum 10 kg net quantity of lithium batteries or cells per package Cargo Aircraft Only (CAO).</p> <p>Package test: 1.2 m drop test.</p>	<p><u>Labeling / Marking:</u></p>   
<p><u>Documentation:</u></p> <p>Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> “Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</p> <p><input type="checkbox"/> “Cargo Aircraft Only” or “CAO”</p> <p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. The service is limited due to CAO restrictions. Service Code HE</p> <p>ACS - Select DG and mention CAO in the restricted commodity type</p>	



UN3481, Lithium Ion Batteries / Cells – PI966 Section II

<p><u>Packaging:</u></p> <p>Cells and/or batteries must be completely enclosed in inner packaging then placed in a strong rigid outer packaging; or must be completely enclosed in inner packaging then placed with equipment in a strong rigid outer packaging. The equipment must be secured against any movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.</p> <p>Maximum number of batteries or cells per package = those necessary to power the equipment plus 2 spares sets. (A set of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment) Maximum net quantity of lithium batteries or cells per package is 5 kg for either Passenger and Cargo Aircraft or Cargo Aircraft Only shipments.</p> <p>Package test: 1.2 m drop test.</p>	<p><u>Labeling / Marking:</u></p> <div><p>UN3481</p></div>
<p><u>Documentation:</u></p> <p>Shipper’s Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> “Lithium ion batteries in compliance with Section II of PI966”</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. Service Code HD</p> <p>ACS - Select LB and mention Section II in the restricted commodity type</p>	



UN3481, Lithium Ion Batteries / Cells – PI966 Section I

Packaging:

Cells and/or batteries must be completely enclosed in inner packaging then placed in a strong rigid outer packaging; or must be completely enclosed in inner packaging then placed with equipment in a strong rigid outer packaging. The equipment must be secured against any movement within the outer packaging and must be equipped with an effective means of preventing accidental activation. Maximum number of batteries /cells per package = **those necessary to power the equipment plus 2 spares sets.** (A set of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment). Maximum net quantity of lithium batteries or cells per package is **5 kg** for **Passenger and Cargo Aircraft (PAX)** and **35 kg** for **Cargo Aircraft Only (CAO)** shipments.

As a DHL requirement cells and batteries must not be packed in the same outer packaging, or placed in an overpack, with dangerous goods classified in Class 1 (except 1.4S), Division 2.1, Class 3, Division 4.1 and Division 5.1.

Package test: Packing Group II performance standards. **UN specification packaging is required.**

Labeling / Marking:



When CAO used:



Documentation:

Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:

- ☐ **“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”**
- ☐ **“Cargo Aircraft Only” or „CAO”** (only when CAO was chosen)

DHL Services: (TDI = Time Definite International , ACS = Air Capacity Sales)

TDI - Account must be approved. **Lithium ion batteries / cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state.** Service Code **HE**

ACS - Select **DG** and mention **PAX** or **CAO** as applicable, in the restricted commodity type

ADR




UN3481, Lithium Ion Batteries / Cells – PI967 Section II

<p><u>Packaging:</u></p> <p>The equipment must be packed in strong rigid outer packaging. Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.</p> <p>Where multiple pieces of equipment are packed in the same outer packaging, each piece of equipment must be packed to prevent contact with other equipment.</p> <p>Maximum 5 kg net qty of lithium batteries or cells per package (excluding the equipment).</p> <p>Maximum 2 packages per shipment (consignment).</p> <p>Package test: No requirements.</p>	<p><u>Labeling / Marking:</u></p> <p>No requirements.</p>
<p><u>Documentation:</u></p> <p>No requirements</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - No requirements</p> <p>ACS - No requirements</p>	





UN3481, Lithium Ion Batteries / Cells – PI967 Section II

<p><u>Packaging:</u></p> <p>The equipment must be packed in strong rigid outer packaging. Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.</p> <p>Where multiple pieces of equipment are packed in the same outer packaging, each piece of equipment must be packed to prevent contact with other equipment.</p> <p>Maximum net quantity of lithium batteries or cells per package is 5 kg (excluding the equipment) for either Passenger and Cargo Aircraft or Cargo Aircraft Only shipments.</p> <p>Package test: Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p><u>Labeling / Marking:</u></p> <div></div> <p>Note:</p> <p>The mark is not required for packages containing only button cell batteries installed in equipment (including circuit boards).</p>
<p><u>Documentation:</u></p> <p>Shipper’s Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> “Lithium ion batteries in compliance with Section II of PI967”</p> <p>Note: The statement is not required for packages containing only button cell batteries installed in equipment (including circuit boards).</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. Service Code HV</p> <p>ACS - Select LB and mention Section II in the restricted commodity type</p>	



UN3481, Lithium Ion Batteries / Cells – PI967 Section I

<p>Packaging:</p> <p>The equipment must be packed in strong rigid outer packaging constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the cell or battery is afforded equivalent protection by the equipment in which it is contained.</p> <p>Maximum net quantity of lithium batteries or cells per package (excluding the equipment) is 5 kg for Passenger and Cargo Aircraft (PAX) and 35 kg for Cargo Aircraft Only (CAO) shipments.</p> <p>As a DHL requirement cells and batteries must not be packed in the same outer packaging, or placed in an overpack, with dangerous goods classified in Class 1 (except 1.4S), Division 2.1, Class 3, Division 4.1 and Division 5.1.</p> <p>Package test: Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p>Labeling / Marking:</p>  <p>When CAO used:</p> 
<p>Documentation:</p> <p>Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> "Dangerous Goods as per associated DGD" or "Dangerous Goods as per associated Shipper's Declaration"</p> <p><input type="checkbox"/> "Cargo Aircraft Only" or "CAO" (only when CAO was chosen)</p>	
<p>DHL Services (TDI = Time Definite International , ACS = Air Capacity Sales):</p> <p>TDI - Account must be approved. Lithium ion batteries / cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state. Service Code HE</p> <p>ACS - Select DG and mention PAX or CAO as applicable, in the restricted commodity type</p>	





UN3090, Lithium Metal Batteries / Cells – PI968 Section IA

Packaging:

Each battery /cell must be protected against a short circuit and placed in an inner packaging that completely encloses the battery /cell, then placed in a strong rigid outer packaging.

Cells and batteries must not be packed in the same outer packaging, or placed in an overpack with, dangerous goods classified in Class 1 (except 1.4S), Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) and Division 5.1 (oxidizers).

Maximum **35 kg** net quantity of lithium batteries or cells per package. **Cargo Aircraft Only (CAO)**

Package test: Packing Group II performance standards. **UN specification packaging is required.**

Labeling / Marking:



Documentation:

Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:

☐ **“Dangerous Goods as per associated DGD”** or **“Dangerous Goods as per associated Shipper's Declaration”**

☐ **“Cargo Aircraft Only”** or **“CAO”**

DHL Services: (TDI = Time Definite International , ACS = Air Capacity Sales)

TDI - Account must be approved. **Lithium metal batteries/cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state.** Service Code **HE**




ACS - Select **DG** and mention **CAO** in the restricted commodity type.

Shipping ACS consignments to, from or within the Asia Pacific region is possible for RCG approved shipments on approved routings only.

ADR




UN3090, Lithium Metal Batteries / Cells – PI968 Section IB

<p><u>Packaging:</u></p> <p>Each battery /cell must be protected against a short circuit and placed in an inner packaging that completely encloses the battery /cell, then placed in a strong rigid outer packaging.</p> <p>Cells and batteries must not be packed in the same outer packaging, or placed in an overpack with, dangerous goods classified in Class 1 (except 1.4S), Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) and Division 5.1 (oxidizers).</p> <p>Maximum 2.5 kg net quantity of lithium batteries or cells per package Cargo Aircraft Only (CAO).</p> <p>Package test: 1.2 m drop test.</p>	<p><u>Labeling / Marking:</u></p> <div></div>
<p><u>Documentation:</u></p> <p>Shipper’s Declaration is required. The following statement must be mentioned on the (air)waybill:</p> <div><input type="checkbox"/> “Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</div> <div><input type="checkbox"/> “Cargo Aircraft Only” or “CAO”</div>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. Forbidden in TDI Express to, from or within the Asia Pacific region due to air carriers restrictions. Service Code HE</p> <p>ACS - Select DG and mention CAO in the restricted commodity type. Shipping ACS consignments to, from or within the Asia Pacific region is possible for RCG approved shipments on approved routings only</p>	



UN3091, Lithium Metal Batteries / Cells – PI969 Section II

<p><u>Packaging:</u></p> <p>Cells and/or batteries must be completely enclosed in inner packaging then placed in a strong rigid outer packaging; or must be completely enclosed in inner packaging then placed with equipment in a strong rigid outer packaging. The equipment must be secured against any movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.</p> <p>Maximum number of batteries /cells per package = those necessary to power the equipment plus 2 spares sets. (A set of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment)</p> <p>Maximum net quantity of lithium batteries or cells per package is 5 kg for either Passenger and Cargo Aircraft or Cargo Aircraft Only shipments.</p> <p>Package test: 1.2 m drop test.</p>	<p><u>Labeling / Marking:</u></p> <div data-bbox="2165 375 2318 518">  </div>
<p><u>Documentation:</u></p> <p>Shipper's Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> “Lithium metal batteries in compliance with Section II of PI969”</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. Service Code HM</p> <p>ACS - Select LB and mention Section II in the restricted commodity type</p>	



UN3091, Lithium Metal Batteries / Cells – PI969 Section I

Packaging:

Cells and/or batteries must be completely enclosed in inner packaging then placed in a strong rigid outer packaging; or must be completely enclosed in inner packaging then placed with equipment in a strong rigid outer packaging. The equipment must be secured against any movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.

Maximum number of batteries /cells per package = **those necessary to power the equipment plus 2 spares sets.** (A set of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment)

Maximum net quantity of lithium batteries or cells per package is **5 kg** for **Passenger and Cargo Aircraft (PAX)** and **35 kg** for **Cargo Aircraft Only (CAO)** shipments.

As a DHL requirement cells and batteries must not be packed in the same outer packaging, or placed in an overpack, with dangerous goods classified in Class 1 (except 1.4S), Division 2.1, Class 3, Division 4.1 and Division 5.1.

Package test: Packing Group II performance standards. **UN specification packaging is required.**

Labeling / Marking:



When CAO used:



Documentation:

Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:

- ☐ **"Dangerous Goods as per associated DGD" or "Dangerous Goods as per associated Shipper's Declaration"**
- ☐ **"Cargo Aircraft Only" or "CAO"** (only when CAO was chosen)

DHL Services: (TDI = Time Definite International , ACS = Air Capacity Sales)

TDI - Account must be approved. **Lithium metal batteries / cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state.** Service Code **HE**

ACS - Select **DG** and mention **PAX** or **CAO** as applicable in the restricted commodity type

ADR




UN3091, Lithium Metal Batteries / Cells – PI970 Section II

<p><u>Packaging:</u></p> <p>The equipment must be packed in strong rigid outer packaging. Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.</p> <p>Where multiple pieces of equipment are packed in the same outer packaging, each piece of equipment must be packed to prevent contact with other equipment.</p> <p>Maximum net quantity of of lithium batteries or cells per package (excluding the equipment) is 5 kg.</p> <p>Maximum 2 packages per shipment (consignment).</p> <p>Package test: No requirements.</p>	<p><u>Labeling / Marking:</u></p> <p>No requirements.</p>
<p><u>Documentation:</u></p> <p>No requirements</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - No requirements</p> <p>ACS - No requirements</p>	

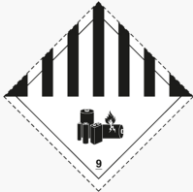



UN3091, Lithium Metal Batteries / Cells – PI970 Section II

<p><u>Packaging:</u></p> <p>The equipment must be packed in strong rigid outer packaging. Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.</p> <p>Where multiple pieces of equipment are packed in the same outer packaging, each piece of equipment must be packed to prevent contact with other equipment.</p> <p>Maximum net quantity of lithium batteries or cells per package is 5 kg (excluding the equipment) for either Passenger and Cargo Aircraft or Cargo Aircraft Only shipments.</p> <p>Package test: Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p><u>Labeling / Marking:</u></p> <div></div> <p>Note:</p> <p>The mark is not required for packages containing only button cell batteries installed in equipment (including circuit boards).</p>
<p><u>Documentation:</u></p> <p>Shipper’s Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> “Lithium metal batteries in compliance with Section II of PI970”</p> <p>Note: The statement is not required for packages containing only button cell batteries installed in equipment (including circuit boards).</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. Service Code HW</p> <p>ACS - Select LB and mention Section II in the restricted commodity type</p>	





UN3091, Lithium Metal Batteries / Cells – PI970 Section I

<p><u>Packaging:</u></p> <p>The equipment must be packed in strong rigid outer packaging constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the cell or battery is afforded equivalent protection by the equipment in which it is contained.</p> <p>The quantity of lithium metal contained in any piece of equipment must not exceed 500 g per battery and 12 g per cell.</p> <p>Maximum net quantity of lithium batteries or cells per package (excluding the equipment) is 5 kg for Passenger and Cargo Aircraft (PAX) and 35 kg for Cargo Aircraft Only (CAO) shipments.</p> <p>As a DHL requirement cells and batteries must not be packed in the same outer packaging, or placed in an overpack, with dangerous goods classified in Class 1 (except 1.4S), Division 2.1, Class 3, Division 4.1 and Division 5.1.</p> <p>Package test: Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p><u>Labeling / Marking:</u></p> <div></div> <p>When CAO used:</p> <div></div>
<p><u>Documentation:</u></p> <p>Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:</p> <div><input type="checkbox"/> "Dangerous Goods as per associated DGD" or "Dangerous Goods as per associated Shipper's Declaration"</div> <div><input type="checkbox"/> "Cargo Aircraft Only" or "CAO" (only when CAO was chosen)</div>	
<p><u>DHL Services</u> (TDI = Time Definite International , ACS = Air Capacity Sales):</p> <p>TDI - Account must be approved. Lithium metal batteries / cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state. Service Code HE</p> <p>ACS - Select DG and mention PAX or CAO as applicable in the restricted commodity type</p> <div>ADR</div>	




UN3551, Sodium Ion Batteries / Cells – PI976

<p><u>Packaging:</u></p> <p>Each battery /cell must be protected against a short circuit and placed in an inner packaging that completely encloses the battery /cell, then placed in a outer packaging.</p> <p>State of Charge (SoC) of the battery or cell must not exceed 30%.</p> <p>Cells and batteries must not be packed in the same outer packaging, or placed in an overpack with, dangerous goods classified in Class 1 (except 1.4S), Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids) and Division 5.1 (oxidizers).</p> <p>Maximum 35 kg net quantity of lithium batteries or cells per package. Cargo Aircraft Only (CAO)</p> <p>Package test: Packing Group II performance standards. UN specification packaging is required.</p>	<p><u>Labeling / Marking:</u></p> <div></div>
<p><u>Documentation:</u></p> <p>Shipper’s Declaration is required. The following statement must be mentioned on the (air)waybill:</p> <div><input type="checkbox"/> “Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</div> <div><input type="checkbox"/> “Cargo Aircraft Only” or “CAO”</div>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. Sodium ion batteries/cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state. Service Code HE</p> <p>ACS - Select DG and mention CAO in the restricted commodity type</p>	





UN3552, Sodium Ion Batteries / Cells – PI977 Section II

<p><u>Packaging:</u></p> <p>Cells and/or batteries must:</p> <ul style="list-style-type: none"> - be completely enclosed in inner packaging then placed in a strong rigid outer packaging, then placed with equipment in a strong ridged outer packaging or - must be completely enclosed in inner packaging then placed with equipment in a strong rigid outer packaging. <p>The equipment must be secured against any movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.</p> <p>Maximum number of batteries or cells per package = those necessary to power the equipment plus 2 spare sets. (A set of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment)</p> <p>Maximum net quantity of lithium batteries or cells per package is 5 kg for either Passenger and Cargo Aircraft or Cargo Aircraft Only shipments.</p> <p>Package test: 1.2 m drop test.</p>	<p><u>Labeling / Marking:</u></p> <div data-bbox="2165 376 2318 519">  </div>
<p><u>Documentation:</u></p> <p>Shipper's Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> “Sodium ion batteries in compliance with Section II of PI977”</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. Service Code HB</p> <p>ACS - Select LB and mention Section II in the restricted commodity type</p>	



UN3552, Sodium Ion Batteries / Cells – PI977 Section I

Packaging:

Cells and/or batteries must:

- be completely enclosed in inner packaging then placed in a strong rigid outer packaging, then placed with equipment in a strong ridged outer packaging or
- must be completely enclosed in inner packaging then placed with equipment in a strong rigid outer packaging.

The equipment must be secured against any movement within the outer packaging and must be equipped with an effective means of preventing accidental activation.

Maximum number of batteries /cells per package = **those necessary to power the equipment plus 2 spare sets.** (A **set** of cells or batteries is the number of individual cells or batteries that are required to power each piece of equipment).

Maximum net quantity of lithium batteries or cells per package is **5 kg** for **Passenger and Cargo Aircraft (PAX)** and **35 kg** for **Cargo Aircraft Only (CAO)** shipments.

As a DHL requirement cells and batteries must not be packed in the same outer packaging, or placed in an overpack, with dangerous goods classified in Class 1 (except 1.4S), Division 2.1, Class 3, Division 4.1 and Division 5.1.

Package test: Packing Group II performance standards. **UN specification packaging is required.**

Labeling / Marking:



When CAO used:



Documentation:

Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:

- ☐ **“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”**
- ☐ **“Cargo Aircraft Only” or „CAO”** (only when CAO was chosen)

DHL Services: (TDI = Time Definite International , ACS = Air Capacity Sales)


TDI - Account must be approved. **Sodium ion batteries / cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state.** Service Code **HE**

ACS - Select **DG** and mention **PAX** or **CAO** as applicable, in the restricted commodity type

ADR



UN3552, Sodium Ion Batteries / Cells – PI978 Section II

<p><u>Packaging:</u></p> <p>The equipment must be packed in strong rigid outer packaging. Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.</p> <p>Where multiple pieces of equipment are packed in the same outer packaging, each piece of equipment must be packed to prevent contact with other equipment.</p> <p>Maximum net quantity of lithium batteries or cells per package is 5 kg (excluding the equipment) for either Passenger and Cargo Aircraft or Cargo Aircraft Only shipments.</p> <p>Package test: Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p><u>Labeling / Marking:</u></p> <div></div> <p>Note:</p> <p>The mark is not required for packages containing only button cell batteries installed in equipment (including circuit boards).</p>
<p><u>Documentation:</u></p> <p>Shipper’s Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> “Sodium ion batteries in compliance with Section II of PI978”</p> <p>Note: The statement is not required for packages containing only button cell batteries installed in equipment (including circuit boards) or for consignments of two packages or less where each package contains no more than four cells or two batteries installed in equipment).</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - Account must be approved. Service Code HA</p> <p>ACS - Select LB and mention Section II in the restricted commodity type</p>	



UN3552, Sodium Ion Batteries / Cells – PI978 Section I

<p>Packaging:</p> <p>The equipment must be packed in strong rigid outer packaging constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the cell or battery is afforded equivalent protection by the equipment in which it is contained.</p> <p>Maximum net quantity of lithium batteries or cells per package (excluding the equipment) is 5 kg for Passenger and Cargo Aircraft (PAX) and 35 kg for Cargo Aircraft Only (CAO) shipments.</p> <p>As a DHL requirement cells and batteries must not be packed in the same outer packaging, or placed in an overpack, with dangerous goods classified in Class 1 (except 1.4S), Division 2.1, Class 3, Division 4.1 and Division 5.1.</p> <p>Package test: Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p>Labeling / Marking:</p> <div data-bbox="2135 297 2321 486"></div> <p>When CAO used:</p> <div data-bbox="2153 554 2303 694"></div>
<p>Documentation:</p> <p>Shipper's Declaration is required. The following statement must be mentioned on the (air)waybill:</p> <div data-bbox="147 896 1666 989"><p><input type="checkbox"/> "Dangerous Goods as per associated DGD" or "Dangerous Goods as per associated Shipper's Declaration"</p><p><input type="checkbox"/> "Cargo Aircraft Only" or "CAO" (only when CAO was chosen)</p></div> <p>DHL Services (TDI = Time Definite International , ACS = Air Capacity Sales):</p> <p>TDI - Account must be approved. Sodium ion batteries / cells packed according to this section are not accepted in TDI Express when transported via road to/from an ADR member state. Service Code HE</p> <p>ACS - Select DG and mention PAX or CAO as applicable, in the restricted commodity type</p> <div data-bbox="2252 1139 2395 1205">ADR</div>	



UN3552, Sodium Ion Batteries / Cells – PI978 Section II

<p><u>Packaging:</u></p> <p>The equipment must be packed in strong rigid outer packaging. Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.</p> <p>Where multiple pieces of equipment are packed in the same outer packaging, each piece of equipment must be packed to prevent contact with other equipment.</p> <p>Maximum 5 kg net qty of lithium batteries or cells per package (excluding the equipment).</p> <p>Maximum 2 packages per shipment (consignment).</p> <p>Package test: No requirements.</p>	<p><u>Labeling / Marking:</u></p> <p>No requirements.</p>
<p><u>Documentation:</u></p> <p>No requirements</p>	
<p><u>DHL Services:</u> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p>TDI - No requirements</p> <p>ACS - No requirements</p>	



ADR Member States

A – Albania, Andorra, Armenia, Austria, Azerbaijan
B – Belarus, Belgium, Bosnia and Herzegovina, Bulgaria
C – Croatia, Cyprus, Czechia
D – Denmark
E – Estonia
F – Finland, France
G – Georgia, Germany, Greece
H – Hungary
I – Iceland, Ireland, Italy
K – Kazakhstan
L – Latvia, Liechtenstein, Lithuania, Luxembourg
M – Malta, Montenegro, Morocco
N – Netherlands, Nigeria, North Macedonia, Norway
P – Poland, Portugal
R – Republic of Moldova, Romania, Russian Federation
S – San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland
T – Tajikistan, Tunisia, Türkiye
U – Uganda, Ukraine, United Kingdom, Uzbekistan