

# LITHIUM BATTERIES GUIDANCE

IN ACCORDANCE WITH THE

IATA DANGEROUS GOODS REGULATIONS 63<sup>RD</sup> EDITION 2022

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January 2022

# Lithium Batteries Section II PI965/PI968 – 2022 Update

## **PI965 & PI968**

Have been revised to remove Section II from these two packing instructions.

To provide shippers with time to adapt their logistics processes to ship lithium cells and batteries in accordance with Section IB of Packing Instruction 965 and Packing Instruction 968, as applicable, there is a 3-month transition period until 31 March 2022, during which time shippers may continue to use Section II.

The Section II provisions of **PI965/PI968** as shown in the 62nd edition (2021) of IATA DGR may continue to be used until **31 March 2022**.

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# 2022 Lithium 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 Batteries.

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

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# 2022 Lithium Batteries Regulations: Battery Types

## Step 1 – What type of battery are you shipping?

**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, 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.

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# 2022 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





# 2022 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





# 2022 Lithium Batteries Regulations: Watt Hour Rating

## Step 3 – What is the capacity (Watt Hour\* rating) of your battery?

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

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

\*The 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



# 2022 Lithium Batteries Regulations: Watt Hour Rating

## Step 3 – What is the capacity (Watt Hour\* rating) of your battery?

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

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

\*The 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





# 2022 Lithium Batteries Regulations: Watt Hour Rating

## Step 3 – What is the capacity (Watt Hour\* rating) of your battery?

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

\*The 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



# 2022 Lithium Batteries Regulations: Lithium Content

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

Cells  
 $\leq 1$  g  
or Batteries  
 $\leq 2$  g

Cells  
 $> 1$  g  
or Batteries  
 $> 2$  g



# 2022 Lithium Batteries Regulations: Lithium Content

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

Cells  
 $\leq 1$  g  
or Batteries  
 $\leq 2$  g

Cells  
 $> 1$  g  
or Batteries  
 $> 2$  g



# 2022 Lithium Batteries Regulations: Lithium Content

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

Cells  
 $\leq 1$  g  
or Batteries  
 $\leq 2$  g

Cells  
 $> 1$  g  
or Batteries  
 $> 2$  g

# 2022 Lithium Batteries Regulations: Lithium Ion Batteries



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

$\leq 4$  Cells  
or  
 $\leq 2$  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.

# 2022 Lithium Batteries Regulations: Lithium Ion Batteries



## Step 4 – How many packages are in the consignment?

$\leq 2$  packages

$> 2$  packages

# 2022 Lithium Batteries Regulations: Lithium Metal Batteries



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

$\leq 4$  Cells  
or  
 $\leq 2$  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.

# 2022 Lithium Batteries Regulations: Lithium Metal Batteries



## Step 4 – How many packages are in the consignment?



$\leq 2$  packages

$> 2$  packages



# UN3480, Lithium Ion Batteries / Cells – PI965 Section IA






<p><b><u>Packaging:</u></b></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><b>State of Charge (SoC) of the battery or cell must not exceed 30%.</b></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 <b>35 kg</b> net quantity of lithium batteries or cells per package. <b>Cargo Aircraft Only (CAO)</b></p> <p><b>Package test:</b> Packing Group II performance standards. <b>UN specification packaging is required.</b></p>	<p><b><u>Labeling / Marking:</u></b></p>  
<p><b><u>Documentation:</u></b></p> <p><b>Shipper's Declaration is required.</b> The following statement must be mentioned on the (air)waybill:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</b></li><li><input type="checkbox"/> <b>“Cargo Aircraft Only” or “CAO”</b></li></ul>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - Account must be approved. <b>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.</b> Service Code <b>HE</b></p> <p><b>ACS</b> - Select <b>DG</b> and mention <b>CAO</b> in the restricted commodity type</p>	




# UN3480, Lithium Ion Batteries / Cells – PI965 Section IB



<p><b><u>Packaging:</u></b></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. 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><b>State of Charge (SoC) of the battery or cell must not exceed 30%.</b></p> <p>Maximum <b>10 kg</b> net quantity of lithium batteries or cells per package <b>Cargo Aircraft Only (CAO)</b>.</p> <p><b>Package test:</b> 1.2 m drop test.</p>	<p><b><u>Labeling / Marking:</u></b></p>   
<p><b><u>Documentation:</u></b></p> <p><b>Shipper's Declaration is required.</b> The following statement must be mentioned on the (air)waybill:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</b></li><li><input type="checkbox"/> <b>“Cargo Aircraft Only” or “CAO”</b></li></ul>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - Account must be approved. The service is limited due to CAO restrictions. Service Code <b>HE</b></p> <p><b>ACS</b> - Select <b>DG</b> and mention <b>CAO</b> in the restricted commodity type</p>	



# UN3481, Lithium Ion Batteries / Cells – PI966 Section II



<p><b><u>Packaging:</u></b></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.</p> <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 = <b>those necessary to power the equipment plus 2 spares sets.</b> (A <b>set</b> 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 <b>5 kg</b> for either <b>Passenger and Cargo Aircraft</b> or <b>Cargo Aircraft Only</b> shipments.</p> <p><b>Package test:</b> 1.2 m drop test.</p>	<p><b><u>Labeling / Marking:</u></b></p>  <p>The image shows a rectangular hazard label with a red border and diagonal red lines. Inside the border, there is a black silhouette of a battery with a flame above it, and the text "UN3481" below the illustration.</p>
<p><b><u>Documentation:</u></b></p> <p>Shipper's Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> <b>"Lithium ion batteries in compliance with Section II of PI966"</b></p>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - Account must be approved. Service Code <b>HD</b></p> <p><b>ACS</b> - Select <b>LB</b> and mention <b>Section II</b> in the restricted commodity type</p>	

# UN3481, Lithium Ion Batteries / Cells – PI966 Section I



<p><b>Packaging:</b> 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 = <b>those necessary to power the equipment plus 2 spares sets.</b> (A <b>set</b> 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 <b>5 kg</b> for <b>Passenger and Cargo Aircraft (PAX)</b> and <b>35 kg</b> for <b>Cargo Aircraft Only (CAO)</b> shipments.</p> <p><b>As a DHL requirement</b> 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><b>Package test:</b> Packing Group II performance standards. <b>UN specification packaging is required.</b></p>	<p><b>Labeling / Marking:</b></p>  <p>When CAO used:</p> 
<p><b>Documentation:</b> <b>Shipper's Declaration is required.</b> The following statement must be mentioned on the (air)waybill:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</b></li><li><input type="checkbox"/> <b>“Cargo Aircraft Only” or „CAO”</b> (only when CAO was chosen)</li></ul>	
<p><b>DHL Services:</b> (TDI = Time Definite International , ACS = Air Capacity Sales) <b>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.</b> Service Code <b>HE</b> <b>ACS - Select DG and mention PAX or CAO as applicable, in the restricted commodity type</b></p> <div data-bbox="1690 1035 1825 1099" style="text-align: right;"><b>ADR</b></div>	


# UN3481, Lithium Ion Batteries / Cells – PI967 Section II



<p><b><u>Packaging:</u></b></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 <b>5 kg</b> net qty of lithium batteries or cells per package (excluding the equipment).</p> <p><b>Maximum 2 packages per shipment (consignment).</b></p> <p><b>Package test:</b> No requirements.</p>	<p><b><u>Labeling / Marking:</u></b></p> <p>No requirements.</p>
<p><b><u>Documentation:</u></b></p> <p>No requirements</p>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - No requirements</p> <p><b>ACS</b> - No requirements</p>	



# UN3481, Lithium Ion Batteries / Cells – PI967 Section II



<p><b><u>Packaging:</u></b></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 is <b>5 kg</b> (excluding the equipment) for either <b>Passenger and Cargo Aircraft</b> or <b>Cargo Aircraft Only</b> shipments.</p> <p><b>Package test:</b> Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p><b><u>Labeling / Marking:</u></b></p>  <p><b>Note:</b></p> <p>The mark is not required for packages containing only <b>button cell batteries</b> installed in equipment (including circuit boards).</p>
<p><b><u>Documentation:</u></b></p> <p>Shipper's Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> <b>"Lithium ion batteries in compliance with Section II of PI967"</b></p> <p><b>Note:</b> The statement is not required for packages containing only <b>button cell batteries</b> installed in equipment (including circuit boards).</p>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - Account must be approved. Service Code <b>HV</b></p> <p><b>ACS</b> - Select <b>LB</b> and mention <b>Section II</b> in the restricted commodity type</p>	

# UN3481, Lithium Ion Batteries / Cells – PI967 Section I





<p><b><u>Packaging:</u></b></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. Maximum net quantity of lithium batteries or cells per package (excluding the equipment) is <b>5 kg</b> for <b>Passenger and Cargo Aircraft (PAX)</b> and <b>35 kg</b> for <b>Cargo Aircraft Only (CAO)</b> shipments.</p> <p><b>As a DHL requirement</b> 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><b>Package test:</b> Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p><b><u>Labeling / Marking:</u></b></p>  <p>When CAO used:</p> 
<p><b><u>Documentation:</u></b></p> <p><b>Shipper's Declaration is required.</b> The following statement must be mentioned on the (air)waybill:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</b></li><li><input type="checkbox"/> <b>“Cargo Aircraft Only” or “CAO”</b> (only when CAO was chosen)</li></ul>	
<p><b><u>DHL Services</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales):</p> <p><b>TDI</b> - Account must be approved. <b>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.</b> Service Code <b>HE</b></p> <p><b>ACS</b> - Select <b>DG</b> and mention <b>PAX</b> or <b>CAO</b> as applicable, in the restricted commodity type</p>	



# UN3090, Lithium Metal Batteries / Cells – PI968 Section IA






<p><b><u>Packaging:</u></b></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. 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 <b>35 kg</b> net quantity of lithium batteries or cells per package. <b>Cargo Aircraft Only (CAO)</b></p> <p><b>Package test:</b> Packing Group II performance standards. <b>UN specification packaging is required.</b></p>	<p><b><u>Labeling / Marking:</u></b></p>  
<p><b><u>Documentation:</u></b></p> <p><b>Shipper's Declaration is required.</b> The following statement must be mentioned on the (air)waybill:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</b></li><li><input type="checkbox"/> <b>“Cargo Aircraft Only” or “CAO”</b></li></ul>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - Account must be approved. <b>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.</b> Service Code <b>HE</b></p> <p><b>ACS</b> - Select <b>DG</b> and mention <b>CAO</b> in the restricted commodity type. <b>Shipping ACS consignments to, from or within the Asia Pacific region is possible for RCG approved shipments on approved routings only</b></p> <div data-bbox="1688 965 1827 1029" style="text-align: right;"><b>ADR</b></div>	




# UN3090, Lithium Metal Batteries / Cells – PI968 Section IB



<p><b><u>Packaging:</u></b></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 <b>2.5 kg</b> net quantity of lithium batteries or cells per package <b>Cargo Aircraft Only (CAO)</b>.</p> <p><b>Package test:</b> 1.2 m drop test.</p>	<p><b><u>Labeling / Marking:</u></b></p>   
<p><b><u>Documentation:</u></b></p> <p><b>Shipper's Declaration is required.</b> The following statement must be mentioned on the (air)waybill:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</b></li><li><input type="checkbox"/> <b>“Cargo Aircraft Only” or “CAO”</b></li></ul>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - Account must be approved. <b>Forbidden in TDI Express to, from or within the Asia Pacific region due to air carriers restrictions.</b> Service Code <b>HE</b></p> <p><b>ACS</b> - Select <b>DG</b> and mention <b>CAO</b> in the restricted commodity type. <b>Shipping ACS consignments to, from or within the Asia Pacific region is possible for RCG approved shipments on approved routings only</b></p>	



# UN3091, Lithium Metal Batteries / Cells – PI969 Section II



<p><b><u>Packaging:</u></b></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.</p> <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 /cells per package = <b>those necessary to power the equipment plus 2 spares sets.</b> (A <b>set</b> 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 <b>5 kg</b> for either <b>Passenger and Cargo Aircraft</b> or <b>Cargo Aircraft Only</b> shipments.</p> <p><b>Package test:</b> 1.2 m drop test.</p>	<p><b><u>Labeling / Marking:</u></b></p>  <p>The image shows a rectangular hazard label with a red border and diagonal red lines. Inside the border, there is an illustration of three lithium metal batteries, one of which is on fire. Below the illustration, the text "UN3091" is printed in bold black letters. At the bottom of the label, there is a small line of text that reads "For more information visit".</p>
<p><b><u>Documentation:</u></b></p> <p>Shipper's Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> <b>"Lithium metal batteries in compliance with Section II of PI969"</b></p>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - Account must be approved. Service Code <b>HM</b></p> <p><b>ACS</b> - Select <b>LB</b> and mention <b>Section II</b> in the restricted commodity type</p>	

# UN3091, Lithium Metal Batteries / Cells – PI969 Section I



<p><b>Packaging:</b> 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 = <b>those necessary to power the equipment plus 2 spares sets.</b> (A <b>set</b> 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 <b>5 kg</b> for <b>Passenger and Cargo Aircraft (PAX)</b> and <b>35 kg</b> for <b>Cargo Aircraft Only (CAO)</b> shipments.</p> <p><b>As a DHL requirement</b> 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><b>Package test:</b> Packing Group II performance standards. <b>UN specification packaging is required.</b></p>	<p><b>Labeling / Marking:</b></p>  <p>When CAO used:</p> 
<p><b>Documentation:</b> <b>Shipper's Declaration is required.</b> The following statement must be mentioned on the (air)waybill:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</b></li><li><input type="checkbox"/> <b>“Cargo Aircraft Only” or “CAO”</b> (only when CAO was chosen)</li></ul>	
<p><b>DHL Services:</b> (TDI = Time Definite International , ACS = Air Capacity Sales) <b>TDI</b> - Account must be approved. <b>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.</b> Service Code <b>HE</b> <b>ACS</b> - Select <b>DG</b> and mention <b>PAX</b> or <b>CAO</b> as applicable in the restricted commodity type</p>	




# UN3091, Lithium Metal Batteries / Cells – PI970 Section II



<p><b><u>Packaging:</u></b></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 <b>5 kg</b>.</p> <p><b>Maximum 2 packages per shipment (consignment).</b></p> <p><b>Package test:</b> No requirements.</p>	<p><b><u>Labeling / Marking:</u></b></p> <p>No requirements.</p>
<p><b><u>Documentation:</u></b></p> <p>No requirements</p>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - No requirements</p> <p><b>ACS</b> - No requirements</p>	



# UN3091, Lithium Metal Batteries / Cells – PI970 Section II



<p><b><u>Packaging:</u></b></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 is <b>5 kg</b> (excluding the equipment) for either <b>Passenger and Cargo Aircraft</b> or <b>Cargo Aircraft Only</b> shipments.</p> <p><b>Package test:</b> Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p><b><u>Labeling / Marking:</u></b></p>  <p><b>Note:</b></p> <p>The mark is not required for packages containing only <b>button cell batteries</b> installed in equipment (including circuit boards).</p>
<p><b><u>Documentation:</u></b></p> <p>Shipper's Declaration is not required. The following statement must be mentioned on the (air)waybill:</p> <p><input type="checkbox"/> <b>“Lithium metal batteries in compliance with Section II of PI970”</b></p> <p><b>Note:</b> The statement is not required for packages containing only <b>button cell batteries</b> installed in equipment (including circuit boards).</p>	
<p><b><u>DHL Services:</u></b> (TDI = Time Definite International , ACS = Air Capacity Sales)</p> <p><b>TDI</b> - Account must be approved. Service Code <b>HW</b></p> <p><b>ACS</b> - Select <b>LB</b> and mention <b>Section II</b> in the restricted commodity type</p>	

# UN3091, Lithium Metal Batteries / Cells – PI970 Section I



<p><b><u>Packaging:</u></b></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 <b>5 kg</b> for <b>Passenger and Cargo Aircraft (PAX)</b> and <b>35 kg</b> for <b>Cargo Aircraft Only (CAO)</b> shipments.</p> <p><b>As a DHL requirement</b> 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><b>Package test:</b> Strong rigid outer packaging equivalent to its capacity and intended use.</p>	<p><b><u>Labeling / Marking:</u></b></p>  <p>When CAO used:</p> 
<p><b><u>Documentation:</u></b></p> <p><b>Shipper's Declaration is required.</b> The following statement must be mentioned on the (air)waybill:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>“Dangerous Goods as per associated DGD” or “Dangerous Goods as per associated Shipper's Declaration”</b></li><li><input type="checkbox"/> <b>“Cargo Aircraft Only” or “CAO”</b> (only when CAO was chosen)</li></ul>	
<p><b><u>DHL Services (TDI = Time Definite International , ACS = Air Capacity Sales):</u></b></p> <p><b>TDI</b> - Account must be approved. <b>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.</b> Service Code <b>HE</b></p> <p><b>ACS</b> - Select <b>DG</b> and mention <b>PAX</b> or <b>CAO</b> as applicable in the restricted commodity type</p>	





## ADR Member States

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