

# Lithium Batteries by Air Compliance Summary 2024

## ADVISORY DOCUMENT

**Reference: IATA Dangerous Goods Regulations 65th Edition 2024**

- Packing Instruction 965 - Lithium Ion Batteries UN3480 (Page 2)
- Packing Instruction 966 - Lithium Ion Batteries packed with equipment UN3481 (Page 3)
- Packing Instruction 967 - Lithium Ion Batteries contained in equipment UN3481 (Page 4)
- Packing Instruction 968 - Lithium Metal Batteries UN3090 (Page 5)
- Packing Instruction 969 - Lithium Metal Batteries packed with equipment UN3091 (Page 6)
- Packing Instruction 970 - Lithium Metal Batteries contained in equipment UN3091 (Page 7)
- Declaration completion example and miscellaneous information (Page 8)
- Lithium batteries installed in cargo transport unit (UN3536) - **FORBIDDEN**

Refer to Appendix A of the IATA DGR for definitions of Lithium Ion & Metal Batteries

**Note:** *Manufacturers and distributors of cells or batteries manufactured after 30 June 2003 must make available the test summary as specified in the UN Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5. Reference documents obtained from distributors should show watt hour ratings or lithium content in grams.*

Please remember: Commercial shippers of lithium batteries are required to be trained under the IATA and Australian Civil Aviation Safety Authority (CASA) legislation.

Disclaimer: The intention of this document is not replace the IATA or CASA regulations, merely to aid with the interpretation of the applicable Lithium battery requirements. No user should act on such information without reference to applicable Regulations. Every effort has been made to present accurate, current information but **AIRSAFE** shall not be held responsible for loss, damage or legal action due to errors or omissions, misprints or misinterpretation of the contents.

<b>Lithium Ion Batteries</b> (Rechargeable) <b>UN3480 - PI 965</b>	<b>Section IA</b> <b>FULLY DECLARED DG</b> <b>FORBIDDEN on Passenger Aircraft</b>	<b>Section IB</b> <b>FULLY DECLARED DG</b> <b>FORBIDDEN on Passenger Aircraft</b>
	<p align="center"><i>Note: UN 3480 lithium ion batteries are restricted to no more than 30% state of charge (SoC).</i></p>	
<b>Applicable to:</b>  <i>Note: Includes battery packs, modules and rechargers having the purpose of providing a source of power to other equipment.</i>	Batteries over 100 Watt hour (W/h), Cells over 20 W/h  <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">               Cell (Single unit)           </div> <div style="text-align: center;">               Battery (Multiple cells connected)           </div> </div>	Batteries no more than 100 W/h,  Cells no more than 20 W/h.
<b>Packaging and marking requirements</b>	<b>UN Specification packages to PG II Standard</b> (See PI for types) <ul style="list-style-type: none"> <li>• Protection against short circuit or arching. Inner packages must completely enclose Cell/Battery</li> <li>• UN Number - <b>"UN3480"</b></li> <li>• Proper shipping name - <b>"Lithium ion batteries"</b></li> <li>• Shipper and Consignees details in full.</li> </ul>	<b>Strong Rigid Outer packaging</b> (See PI for types) <ul style="list-style-type: none"> <li>• Protection against short circuit or arching. Inner packages must completely enclose Cell/Battery</li> <li>• UN Number - <b>"UN3480"</b> (on handling label)</li> <li>• Proper shipping name - <b>"Lithium ion batteries"</b></li> <li>• Shipper and Consignees details in full.</li> </ul>
<b>Label required</b>	Class 9 + Cargo Aircraft Only  <div style="display: flex; justify-content: space-around; align-items: center;">   </div>	Class 9 + Li battery handling label + CAO  <div style="display: flex; justify-content: space-around; align-items: center;">    </div>
<b>Quantity allowed</b>	FORBIDDEN - Passenger Aircraft 35 Kg Net per package - Cargo Aircraft only	FORBIDDEN - Passenger Aircraft 10 Kg Net per package - Cargo Aircraft only
<b>Shippers Declaration required</b>	YES, see example on last page	YES, see example on last page (IB in Packing Instruction column after number or in Authorisation column)
<b>AWB/Con-note or Transport Document statement requirements</b>	"Dangerous Goods as per associated DGD - CAO"	"Dangerous Goods as per associated DGD - CAO"
<b>Airline Requirements</b>	<b>RBI</b> - (Restricted Battery ion) Full Acceptance check list required Required on NOTOC	<b>RBI</b> - (Restricted Battery ion) Full Acceptance check list required Required on NOTOC

<b>Lithium Ion Batteries packed with equipment UN3481 - PI 966</b>	<p style="text-align: center;"><b>Section I FULLY DECLARED DG</b></p>	<p style="text-align: center;"><b>Section II Not subject to all aspects of the DGR</b></p>
<b>Applicable to:</b>	<p style="text-align: center;">Batteries over 100 Watt hour (W/h) Cells over 20 W/h</p> <p><i>Note: The maximum number of batteries allowed in the package is the appropriate number required to power the equipment plus two spare sets (set = number of cells or batteries required to power each piece of equipment).</i></p>	<p style="text-align: center;">Batteries no more than 100 W/h Cells no more than 20 W/h</p> <p><i>Note: The maximum number of batteries allowed in the package is the appropriate number required to power the equipment plus two spare sets (set = number of cells or batteries required to power each piece of equipment).</i></p>
<b>Packaging and marking requirements</b>	<p><b>UN Specification package must meet PG II Standard</b> (See PI for types)</p> <ul style="list-style-type: none"> <li>• Cells / Batteries may be packed in UN spec package then placed with equipment into strong rigid <b>outer</b> packaging, or</li> <li>• Cells / Batteries and equipment all packed in UN spec packaging.</li> <li>• Cells / Batteries must be individually protected and be completely enclosed by <b>inner</b> packaging.</li> <li>• UN Number - <b>“UN3481”</b></li> <li>• Proper shipping name - <b>“Lithium ion batteries packed with equipment”</b></li> <li>• Shippers and consignee details in full.</li> </ul>	<p><b>Strong Rigid Outer packaging</b> (See PI for Types)</p> <ul style="list-style-type: none"> <li>• Inner packages must completely enclose Cells /Battery,</li> <li>• Protected against short circuit or arcing,</li> <li>• Cells / Batteries can be placed in separate <b>inner</b> packages to the equipment,</li> <li>• The equipment and batteries must all be packed in the same <b>outer</b> package.</li> </ul>
<b>Label required</b>	Class 9 Lithium battery hazard label 	Lithium battery handling label. (UN 3481 on label) 
<b>Quantity allowed</b>	Maximum net quantity (batteries within package): 5 Kg Net - Passenger Aircraft 35 Kg Net - Cargo Aircraft Only	Maximum net quantity (batteries within package): 5 Kg Net - Passenger Aircraft 5 Kg Net - Cargo Aircraft Only
<b>Shippers Declaration required</b>	<p style="text-align: center;">YES, see example on last page</p>	<p style="text-align: center;">NO</p>
<b>AWB/Con-note or Transport Document statement requirements</b>	<p>“Dangerous Goods as per associated DGD”</p> <p>Include <b>“CAO”</b> after the above statement if applicable</p>	<p>The words “Lithium ion batteries in compliance with Section II of PI966”</p>
<b>Airline Requirements</b>	<b>RLI</b> - (Restricted Lithium ion) Full Acceptance check list required. <b>Required on NOTOC</b>	<b>ELI</b> - (Exempt Lithium ion) No check list required. <b>NOT required on NOTOC</b>

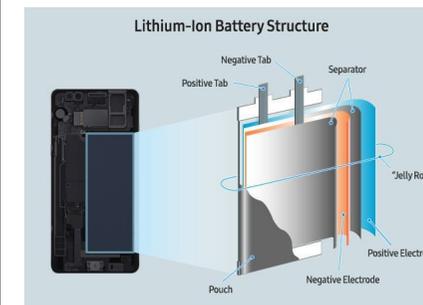


Cells



Inside a lap top battery

<b>Lithium Ion Batteries contained in equipment</b> <b>UN3481 - PI 967</b>	<p style="text-align: center;"><b>Section I</b>  <b>FULLY DECLARED DG</b></p>	<p style="text-align: center;"><b>Section II</b>  <b>Not subject to all aspects of the DGR</b></p>
<b>Applicable to:</b>	<p style="text-align: center;">Batteries over 100 Watt hour (W/h)  Cells over 20 W/h</p>	<p style="text-align: center;">Batteries no more than 100 W/h  Cells no more than 20 W/h</p>
<b>Packaging and marking requirements</b>	<p><b>Strong Rigid Outer packaging</b> (See PI for types, UN Specification packaging not required)</p> <ul style="list-style-type: none"> <li>• Protection against short circuit or arcing and accidental activation.</li> <li>• UN Number - <b>"UN3481"</b></li> <li>• Proper shipping name - <b>"Lithium ion batteries contained in equipment"</b></li> <li>• Shippers and consignee details in full.</li> </ul>	<p><b>Strong Rigid Outer packaging</b> (See PI for Types)</p> <ul style="list-style-type: none"> <li>• Protection against short circuit or arcing and accidental activation.</li> </ul>
<b>Label required</b>	<p style="text-align: center;">Class 9 Lithium battery hazard label</p> <div style="text-align: center;">  </div>	<p style="text-align: center;">Lithium battery handling label (UN3481 on label)</p> <div style="text-align: center;">  </div> <p><b>Note:</b> The label and AWB statement, does not apply to:  - Button cell batteries and circuit boards in equipment; OR  - Consignments of no more than 2 packages where each package contains no more than 4 cells or 2 batteries installed in equipment.</p>
<b>Quantity allowed</b>	<p>Maximum net quantity (batteries within package):  5 Kg Net (batteries ) - Passenger Aircraft  35 Kg Net (batteries) - Cargo Aircraft only</p>	<p>Maximum net quantity (batteries within package):  5 Kg Net - Passenger Aircraft  5 Kg Net - Cargo Aircraft Only</p>
<b>Shippers Declaration required</b>	<p style="text-align: center;">YES, see example on last page.</p>	<p style="text-align: center;">NO</p>
<b>AWB/Con-note or Transport Document statement requirements</b>	<p>"Dangerous Goods as per associated DGD"  Include <b>"CAO"</b> after the above statement if applicable.</p>	<p>The words "Lithium ion batteries in compliance with Section II of PI967"</p>
<b>Airline Requirements</b>	<p><b>RLI</b> - (Restricted Lithium ion)  Full Acceptance check list required  Required on NOTOC</p>	<p><b>ELI</b> - (Exempt Lithium ion)  No check list required  NOT required on NOTOC</p>



Inside the lithium cell inside a telephone

<b>Lithium Metal Batteries</b> (Non- Rechargeable) <b>UN3090 - PI 968</b>	<b>Section IA</b> <b>FULLY DECLARED DG</b> <b>FORBIDDEN on Passenger Aircraft</b>	<b>Section IB</b> <b>FULLY DECLARED DG</b> <b>FORBIDDEN on Passenger Aircraft</b>
<b>Applicable to:</b>	Batteries over 2 grams (g) aggregate of Lithium metal Cells over 1 g of Lithium metal.	Batteries no more than 2 g aggregate of lithium metal. Cells no more than 1 g of lithium metal.
<b>Packaging and marking requirements</b> 	<b>UN Specification packages to PG II Standard</b> (See PI for types) <ul style="list-style-type: none"> <li>• Protection against short circuit or arching. Inner packages must completely enclose Cell/Battery</li> <li>• UN Number - <b>“UN3090”</b></li> <li>• Proper shipping name - <b>“Lithium metal batteries”</b></li> <li>• Shipper and Consignees details in full.</li> </ul>	<b>Strong Rigid Outer packaging</b> (See PI for types) <ul style="list-style-type: none"> <li>• Protection against short circuit or arching. Inner packages must completely enclose Cell/Battery</li> <li>• UN Number - <b>“UN3090”</b> (on handling label)</li> <li>• Proper shipping name - <b>“Lithium metal batteries”</b></li> <li>• Shipper and Consignees details in full.</li> </ul>
<b>Label required</b>	Class 9 + Cargo Aircraft Only 	Class 9 + Li battery handling label + CAO 
<b>Quantity allowed</b>	FORBIDDEN - Passenger Aircraft 35 Kg Net per package - Cargo Aircraft only	FORBIDDEN - Passenger Aircraft 2.5 Kg Net per package - Cargo Aircraft only
<b>Shippers Declaration required</b>	YES, see example on last page	YES, see example on last page (IB in Packing Instruction column after number or in Authorisation Column)
<b>AWB/Con-note or Transport Document statement requirements</b>	“Dangerous Goods as per associated DGD - CAO”	“Dangerous Goods as per associated DGD - CAO”
<b>Airline Requirements</b>	<b>RBM</b> - (Restricted Battery Metal) Full Acceptance check list required Required on NOTOC	<b>RBM</b> - (Restricted Battery Metal) Full Acceptance check list required Required on NOTOC

Lithium Metal Batteries packed with equipment UN3091 - PI 969	Section I FULLY DECLARED DG	Section II Not subject to all aspects of the DGR
<b>Applicable to:</b>	Batteries over 2 grams (g) aggregate of Lithium metal Cells over 1 g of Lithium metal  <b>Note: The maximum number of batteries allowed in the package is the appropriate number required to power the equipment plus two spare sets</b> (set = number of cells or batteries required to power each piece of equipment).	Batteries no more than 2 g aggregate of Lithium metal Cells no more than 1 g of Lithium metal  <b>Note: The maximum number of batteries allowed in the package is the appropriate number required to power the equipment plus two spare sets</b> (set = number of cells or batteries required to power each piece of equipment).
<b>Packaging and marking requirements</b>	<b>UN Specification package must meet PG II Standard</b> (See PI for types)  <ul style="list-style-type: none"> <li>Cells / Batteries may be packed in UN spec package then placed with equipment into strong rigid <b>outer</b> packaging, or</li> <li>Cells / Batteries and equipment all packed in UN spec packaging.</li> <li>Cells / Batteries must be individually protected and be completely enclosed by <b>inner</b> packaging.</li> <li>UN Number - “<b>UN3091</b>”</li> <li>Proper shipping name - “<b>Lithium metal batteries packed with equipment</b>”</li> <li>Shippers and consignee details in full.</li> </ul>	<b>Strong Rigid Outer packaging</b> (See PI for Types)  <ul style="list-style-type: none"> <li>Inner packages must completely enclose Cells /Battery,</li> <li>Protected against short circuit or arcing,</li> <li>Cells / Batteries can be placed in separate <b>inner</b> packages to the equipment,</li> <li>The equipment and batteries must all be packed in the same <b>outer</b> package.</li> </ul>
<b>Label required</b>	Class 9 Lithium battery hazard label 	Lithium battery handling label (UN 3091 on label) 
<b>Quantity allowed</b>	Maximum net quantity (batteries within package): 5 Kg Net - Passenger Aircraft 35 Kg Net - Cargo Aircraft only	Maximum net quantity (batteries within package): 5 Kg Net - Passenger Aircraft 5 Kg Net - Cargo Aircraft only
<b>Shippers Declaration required</b>	YES, see example on last page	NO
<b>AWB/Con-note or Transport Document statement requirements</b>	“Dangerous Goods as per associated DGD” Include “ <b>CAO</b> ” after the above statement if applicable	The words “Lithium metal batteries in compliance with Section II of PI969”
<b>Airline Requirements</b>	<b>RLM</b> - (Restricted Lithium metal) Full Acceptance check list required, NOTOC required	<b>ELM</b> - (Exempt Lithium metal) No check list required, Not Required on NOTOC



Inside a lithium metal cell

<b>Lithium Metal Batteries contained in equipment</b> <b>UN3091 - PI 970</b>	<p style="text-align: center;"><b>Section I</b> <b>FULLY DECLARED DG</b></p>	<p style="text-align: center;"><b>Section II</b> <b>Not subject to all aspects of the DGR</b></p>
<b>Applicable to:</b>	Batteries over 2 grams (g) aggregate of Lithium metal  Cells over 1 g of Lithium metal	Batteries no more than 2 grams (g) aggregate of Lithium metal  Cells no more than 1 g of Lithium metal
<b>Packaging and marking requirements</b>	<b>Strong Outer packaging</b> (See PI for Types, UN Specification packaging not required) <ul style="list-style-type: none"> <li>• Protection against short circuit or arching</li> <li>• UN Number - <b>"UN3091"</b></li> <li>• Proper shipping name - <b>"Lithium metal batteries contained in equipment"</b></li> </ul>	<b>Strong Rigid Outer packaging.</b> (See PI for Types) <ul style="list-style-type: none"> <li>• Protection against short circuit or arching and accidental activation.</li> </ul>
<b>Label required</b>	Class 9 	Lithium battery handling label (UN 3091 on label)   <i>Note: The label and AWB statement, does not apply to:</i> <ul style="list-style-type: none"> <li>- Button cell batteries and circuit boards in equipment; OR</li> <li>- Consignments of no more than 2 packages where each package contains no more than 4 cells or 2 batteries installed in equipment.</li> </ul>
<b>Quantity allowed</b>	Maximum net quantity (batteries within package): 5 Kg Net - Passenger Aircraft 35 Kg Net - Cargo Aircraft only	Maximum net quantity (batteries within package): 5 Kg Net - Passenger Aircraft 5 Kg Net - Cargo Aircraft only
<b>Shippers Declaration required</b>	YES, see example last page	NO
<b>AWB/Con-note or Transport Document statement requirements</b>	"Dangerous Goods as per associated DGD" Include <b>"CAO"</b> after the above statement if applicable	The words "Lithium metal batteries in compliance with Section II of PI970"
<b>Airline Requirements</b>	<b>RLM</b> - (Restricted Lithium metal) Full Acceptance check list required Required on NOTOC	<b>ELM</b> - (Exempt Lithium metal) No check list required Not Required on NOTOC



## Additional Information

NATURE AND QUANTITY OF DANGEROUS GOODS						
Dangerous Goods Identification						
UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Pack-ing Group	Quantity and Type of Packing	Pack Inst.	Author-ization
UN3481	Lithium Ion batteries packed with equipment	9		2 Fibreboard boxes x 5Kg	966	
UN3481	Lithium Ion batteries contained in equipment	9		2 Fibreboard boxes x 5Kg	967	
UN3091	Lithium metal batteries packed with equipment	9		2 Fibreboard boxes x 5Kg	969	
UN3091	Lithium metal batteries contained in equipment	9		1 Fibreboard boxes x 5Kg	970	

### To calculate watt hour for Lithium ion

$$\text{Ah (Amperes per hour)} \times \text{V (Volt)} = \text{Wh}$$

Examples of the DGD information required for Li Batteries in compliance with Section I or IA of the Packing Instructions shown

Maximum net per package for Passenger Aircraft = 5 Kg  
Maximum net per package for Cargo Aircraft Only = 35 Kg

To assist in aligning the labelling requirements of all modes of transport, the Hazard and Handling label used must be as shown below:

Hazard label:



Handling label:

Requires:  
**UN number**  
  
Optional  
Tel Number



As at 01 January 2023 the handling label no longer requires a telephone number to be included. The label with a telephone number can be used until 31 December 2026.

Lithium batteries packed without equipment must be separated from classes 1 (other than 1.4S), 2.1, 3, 4.1 and 5.1.

<del>PASSENGER AND CARGO AIRCRAFT</del>	<b>CARGO AIRCRAFT ONLY</b>
Airport of Destination	Shipment Type ( <i>Delete non-applicable</i> )
	<b>NON-RADIOACTIVE</b> <del>RADIOACTIVE</del>

NATURE AND QUANTITY OF DANGEROUS GOODS						
Dangerous Goods Identification						
UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Pack-ing Group	Quantity and Type of Packing	Pack Inst.	Author-ization
UN3480	Lithium Ion batteries	9		1 Fibreboard box x 5Kg	965	
UN3090	Lithium metal batteries	9		1 Fibreboard box x 35Kg	968	
UN3480	Lithium Ion batteries	9		1 Fibreboard box x 10Kg	965	1B
UN3090	Lithium metal batteries	9		1 Fibreboard box x 2.5Kg	968	1B

Example of the DGD information required for Li Ion Batteries and Li Metal Batteries in compliance with Section IA of the Packing Instructions 965 and 968 respectively.

Maximum net per package for Cargo Aircraft = 35 Kg  
**FORBIDDEN on PAX aircraft**

Example of the DGD information required for Li Ion Batteries and Li Metal Batteries in compliance with Section IB of the Packing Instructions 965 and 968 respectively.

Li Ion Batteries: Maximum net per package for Cargo Aircraft = 10kg  
Li Metal Batteries: Maximum net per package for Cargo Aircraft = 2.5kg

**FORBIDDEN on PAX aircraft.**