



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)**

**TWENTY-FOURTH MEETING**

**Montréal, 28 October to 8 November 2013**

**Agenda Item 5: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel:**

**5.1: Review of provisions for the transport of lithium batteries**

**5.2: Dangerous goods incident and accident data collection**

**LITHIUM BATTERIES – SECTION IB DOCUMENTATION REQUIREMENTS**

(Presented by D. Brennan)

**SUMMARY**

This working paper proposes that the allowance for lithium batteries shipped under Section IB of Packing Instruction 965 and Packing Instruction 968 to have the required information provided on an air waybill, or other alternative documentation, be removed and these shipments be required to be described on a dangerous goods transport document.

**Action by the DGP:** The DGP-WG is invited to revise Packing Instruction 965 and Packing Instruction 968 as shown in the appendix to this working paper. Should this proposal be accepted, a consequential amendment (also shown in the appendix to this working paper) would be required in Part 5;4.1.5.8.1 to make specific reference to the addition of the “IB” on the dangerous goods transport document.

**1. INTRODUCTION**

1.1 At the DGP Working Group Meeting of the Whole on Lithium Batteries that was held in February 2012, the DGP-WG/LB developed new provisions to address “bulk” shipments of lithium ion and lithium metal batteries that were adopted into the Technical Instructions as Section IB in Packing Instructions 965 and 968.

1.2 The development of these new provisions were seen as a balance between making these lithium batteries fully regulated in Class 9 and the provisions existing at the time which allowed for large

accumulations of Section II lithium batteries without any information being provided to the pilot-in-command that these batteries were in the cargo.

1.3 In striking this balance, the provision for non-UN specification packagings for these shipments was retained, as was the exception from the dangerous goods transport document, although there was an increase in the amount of information that was required to be provided by the shipper to describe the consignment, but this information was permitted on alternative documentation to that provided for in Part 5;4, such an air waybill.

1.4 In addition to requiring additional information on the document so that the operators could perform an acceptance check and provide information to the pilot-in-command, it was also seen that this information could assist States in being able to inspect shippers of Section IB lithium battery shipments.

1.5 Since the start of this year when the provisions for Section IB in Packing Instructions 965 and 968 became applicable, it has become apparent that the use of “alternative documentation”, typically the air waybill, is both not suitable for the information that is required to be provided by the shipper, and not meeting the objective of being able to be used by States to identify shippers of Section IB lithium battery shipments.

1.6 The issue here is with the design and purpose of the air waybill. The air waybill is the document which evidences the contract between the shipper and operator(s) for carriage of goods over routes of the operator(s). In almost all cases the air waybill is completed by the freight forwarder on behalf of the shipper(s) and the name and address of the shipper and consignee shown on the air waybill will be that of the forwarder at origin and the forwarder at destination. The name and address of the “true” shipper will not be identified on the air waybill; consequently the documentation retained by the operator at origin will be of no value to States looking to inspect shippers.

1.7 As a commercial transport document, the format of the air waybill is designed to capture information relevant to the customs authorities and rates and charges applicable to the consignment. As such, the air waybill also has limited “real estate” on which to describe the dangerous goods information required by Section IB of Packing Instructions 965 and 968. This is particularly the case with large shipments that may include multiple overpacks.

1.8 For these reasons it is proposed to revise Section IB in Packing Instruction 965 and Packing Instruction 968 to remove reference to the use of alternative documentation and instead to simply require that the applicable provisions of Part 5;4 apply, with the addition of “IB” following the packing instruction number on the dangerous goods transport document. Associated with the changes proposed to the packing instructions, a consequential amendment would be required in Part 5;4.1.5.8.1 to make specific reference to the addition of the “IB” on the dangerous goods transport document.

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**APPENDIX**

**PROPOSED AMENDMENT TO PART 4 OF THE TECHNICAL INSTRUCTIONS**

**Part 4**

**PACKING INSTRUCTIONS**

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**Chapter 11**

**CLASS 9 — MISCELLANEOUS DANGEROUS GOODS**

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**Packing Instruction 965**

Passenger and cargo aircraft for UN 3480

**1. Introduction**

This entry applies to lithium ion or lithium polymer batteries. This packing instruction is structured as follows:

- Section IA applies to lithium ion cells with a Watt-hour rating in excess of 20 Wh and lithium ion batteries with a Watt-hour rating in excess of 100 Wh, which must be assigned to Class 9 and are subject to all of the applicable requirements of these Instructions;
- Section IB applies to lithium ion cells with a Watt-hour rating not exceeding 20 Wh and lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities that exceed the allowance permitted in Section II, Table 965-II; and
- Section II applies to lithium ion cells with a Watt-hour rating not exceeding 20 Wh and lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities not exceeding the allowance permitted in Section II, Table 965-II.

**2. Lithium batteries forbidden from transport**

The following applies to all lithium ion cells and batteries in this packing instruction:

Cells and 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 are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons).

Waste lithium batteries and lithium batteries being shipped for recycling or disposal are forbidden from air transport unless approved by the appropriate national authority of the State of Origin and the State of the Operator.

**IA. SECTION IA**

Section IA requirements apply to lithium ion cells with a Watt-hour rating in excess of 20 Wh and lithium ion batteries with a Watt-hour rating in excess of 100 Wh that have been determined to meet the criteria for assignment to Class 9.

Each cell or battery must:

- 1) be of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, subsection 38.3;

*Note 1.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.*

*Note 2.— Batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN Manual of Tests and Criteria, Part III, subsection 38.3 may continue to be transported.*

- 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits; and
- 3) be manufactured under a quality management programme as described in 2;9.3.1 e).

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

#### 1A.1 General requirements

Part 4;1 requirements must be met.

**Table 965-IA**

UN number and proper shipping name	Net quantity per package	
	Passenger	Cargo
UN 3480 <b>Lithium ion batteries</b>	5 kg	35 kg

#### 1A.2 Additional requirements

- Lithium ion cells and batteries must be protected against short circuits.
- Lithium ion cells and batteries must be placed in inner packagings that completely enclose the cell or battery then placed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance requirements.
- Lithium ion batteries with a mass of 12 kg or greater and having a strong, impact-resistant outer casing, or assemblies of such batteries, may be transported when packed in strong outer packagings or protective enclosures (e.g. in fully enclosed or wooden slatted crates) not subject to the requirements of Part 6 of these Instructions, if approved by the appropriate authority of the State of Origin. A copy of the document of approval must accompany the consignment.
- Batteries manufactured after 31 December 2011 must be marked with the Watt-hour rating on the outside case.

#### 1A.3 Outer packagings

##### *Boxes*

Aluminium (4B)  
Fibreboard (4G)  
Natural wood (4C1, 4C2)  
Other metal (4N)  
Plastics (4H1, 4H2)  
Plywood (4D)  
Reconstituted wood (4F)  
Steel (4A)

##### *Drums*

Aluminium (1B2)  
Fibre (1G)  
Other metal (1N2)  
Plastics (1H2)  
Plywood (1D)  
Steel (1A2)

##### *Jerricans*

Aluminium (3B2)  
Plastics (3H2)  
Steel (3A2)

#### IB. SECTION IB

Section IB requirements apply to lithium ion cells with a Watt-hour rating not exceeding 20 Wh and lithium ion batteries with a Watt-hour rating not exceeding 100 Wh packed in quantities that exceed the allowance permitted in Section II, Table 965-II.

Quantities of lithium ion cells or batteries that exceed the allowance permitted in Section II, Table 965-II must be assigned to Class 9 and are subject to all of the applicable provisions of these Instructions (including the requirements in paragraph 2 of this packing instruction and of this section) except for ~~the following:~~ the provisions of Part 6.

Lithium ion cells or batteries shipped in accordance with the provisions of Section IB must be described on a dangerous goods transport document as set in Part 5;4. The packing instruction number "965" required by 5;4.1.5.8.1 a) must be supplement with "IB". All other applicable provisions of Part 5;4 apply.

- ~~the provisions of Part 6; and~~
- ~~the dangerous goods transport document requirements of 5;4, provided alternative written documentation is provided by the shipper describing the contents of the consignment. Where an agreement exists with the~~

~~operator, the shipper may provide the information by electronic data processing (EDP) or electronic data interchange (EDI) techniques. The information required is as follows and should be shown in the following order:~~

- ~~1) the name and address of the shipper and consignee;~~
- ~~2) UN 3480;~~
- ~~3) Lithium ion batteries PI 965 IB;~~
- ~~4) the number of packages and the gross mass of each package.~~

Lithium ion cells and batteries may be offered for transport if they meet all of the following:

- 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;
- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;  
— the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the *UN Manual of Tests and Criteria*, Part III, subsection 38.3;

*Note 1.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.*

*Note 2.— Batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN Manual of Tests and Criteria, Part III, subsection 38.3 may continue to be transported;*

- 4) cells and batteries must be manufactured under a quality management programme as described in 2;9.3.1 e).

**Packing Instruction 965**

**IB.1 General requirements**

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

**Table 965-IB**

Contents	Package quantity	
	Passenger	Cargo
Lithium ion cells and batteries	10 kg G	10 kg G

**IB.2 Additional requirements**

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
  - damage to cells or batteries contained therein;
  - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
  - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31) in addition to the Class 9 hazard label.
- Each consignment must be accompanied with a document with an indication that:
  - the package contains lithium ion cells or batteries;
  - the package must be handled with care and that a flammability hazard exists if the package is damaged;
  - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and
  - a telephone number for additional information.

**IB.3 Outer packagings**

*Boxes*

*Drums*

*Jerricans*

Strong outer packagings

**II. SECTION II**

With the exception of Part 1;2.3 (Transport of dangerous goods by post), 7;4.4 (Reporting of dangerous goods accidents and incidents), 8;1.1 (Dangerous goods carried by passengers or crew) and paragraph 2 of this packing instruction, lithium ion cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

Lithium ion cells and batteries may be offered for transport if they meet all of the following:

- 1) for lithium ion cells, the Watt-hour rating (see the Glossary of Terms in Attachment 2) is not more than 20 Wh;
- 2) for lithium ion batteries, the Watt-hour rating is not more than 100 Wh;
  - the Watt-hour rating must be marked on the outside of the battery case except for those batteries manufactured before 1 January 2009;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the *UN Manual of Tests and Criteria*, Part III, subsection 38.3;

*Note 1.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.*

*Note 2.— Batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN Manual of Tests and Criteria, Part III, subsection 38.3 may continue to be transported.*

- 4) cells and batteries must be manufactured under a quality management programme as described in 2;9.3.1 e).

## Packing Instruction 965

### II.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

**Table 965-II**

<i>Contents</i>	<i>Lithium ion cells and/or batteries with a Watt-hour rating not more than 2.7 Wh</i>	<i>Lithium ion cells with a Watt-hour rating more than 2.7 Wh, but not more than 20 Wh</i>	<i>Lithium ion batteries with a Watt-hour rating more than 2.7 Wh, but not more than 100 Wh</i>
1	2	3	4
Maximum number of cells / batteries per package	No limit	8 cells	2 batteries
Maximum net quantity (mass) per package	2.5 kg	n/a	n/a

The limits specified in columns 2, 3 and 4 of Table 965-II must not be combined in the same package.

### II.2 Additional requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
  - damage to cells or batteries contained therein;
  - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
  - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31).
- Each consignment must be accompanied with a document with an indication that:
  - the package contains lithium ion cells or batteries;
  - the package must be handled with care and that a flammability hazard exists if the package is damaged;
  - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and
  - a telephone number for additional information.
- The words "lithium ion batteries, in compliance with Section II of PI965" must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

### II.3 Outer packagings

*Boxes*

*Drums*

*Jerricans*

Strong outer packagings

### II.4 Overpacks

When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word "Overpack".

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## Packing Instruction 968

Passenger and cargo aircraft for UN 3090

### 1. Introduction

This entry applies to lithium metal or lithium alloy batteries. This packing instruction is structured as follows:

- Section IA applies to lithium metal cells with a lithium metal content in excess of 1 g and lithium metal batteries with a lithium metal content in excess of 2 g, which must be assigned to Class 9 and are subject to all of the applicable requirements of these Instructions;
- Section IB applies to lithium metal cells with a lithium metal content not exceeding 1 g and lithium metal batteries with a lithium metal content not exceeding 2 g packed in quantities that exceed the allowance permitted in Section II, Table 968-II; and
- Section II applies to lithium metal cells with a lithium metal content not exceeding 1 g and lithium metal batteries with a lithium metal content not exceeding 2 g packed in quantities not exceeding the allowance permitted in Section II, Table 968-II.

### 2. Lithium batteries forbidden from transport

The following applies to all lithium metal cells and batteries in this packing instruction:

Cells and 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 are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons).

Waste lithium batteries and lithium batteries being shipped for recycling or disposal are forbidden from air transport unless approved by the appropriate national authority of the State of Origin and the State of the Operator.

### IA. SECTION IA

Section IA requirements apply to lithium metal cells with a lithium metal content in excess of 1 g and lithium metal batteries with a lithium metal content in excess of 2 g that have been determined to meet the criteria for assignment to Class 9.

Each cell or battery must:

- 1) be of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, subsection 38.3;

*Note 1.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.*

*Note 2.— Batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN Manual of Tests and Criteria, Part III, subsection 38.3 may continue to be transported.*

- 2) incorporate a safety venting device or be designed to preclude a violent rupture under conditions normally incident to transport and be equipped with an effective means of preventing external short circuits; and
- 3) be manufactured under a quality management programme as described in 2;9.3.1 e).

Each battery containing cells or a series of cells connected in parallel must be equipped with an effective means, as necessary, to prevent dangerous reverse current flow (e.g. diodes, fuses).

#### IA.1 General requirements

Part 4;1 requirements must be met.

**Table 968-IA**

<i>UN number and proper shipping name</i>	<i>Net quantity per package</i>	
	<i>Passenger</i>	<i>Cargo</i>
UN 3090 <b>Lithium metal batteries</b>	2.5 kg	35 kg



## Packing Instruction 968

### IA.2 Additional requirements

- Lithium metal cells and batteries must be protected against short circuits.
- Lithium metal cells and batteries must be placed in inner packagings that completely enclose the cell or battery, then placed in an outer packaging. The completed package for the cells or batteries must meet the Packing Group II performance requirements.
- Lithium metal batteries with a mass of 12 kg or greater and having a strong, impact-resistant outer casing, or assemblies of such batteries, may be transported when packed in strong outer packagings or protective enclosures (e.g. in fully enclosed or wooden slatted crates) not subject to the requirements of Part 6 of these Instructions, if approved by the appropriate authority of the State of Origin. A copy of the document of approval must accompany the consignment.
- For lithium metal cells and batteries prepared for transport on passenger aircraft as Class 9:
  - cells and batteries offered for transport on passenger aircraft must be packed in intermediate or outer rigid metal packaging; and
  - cells and batteries must be surrounded by cushioning material that is non-combustible and non-conductive, and placed inside an outer packaging.

### IA.3 Outer packagings

<i>Boxes</i>	<i>Drums</i>	<i>Jerricans</i>
Aluminium (4B)	Aluminium (1B2)	Aluminium (3B2)
Fibreboard (4G)	Fibre (1G)	Plastics (3H2)
Natural wood (4C1, 4C2)	Other metal (1N2)	Steel (3A2)
Other metal (4N)	Plastics (1H2)	
Plastics (4H1, 4H2)	Plywood (1D)	
Plywood (4D)	Steel (1A2)	
Reconstituted wood (4F)		
Steel (4A)		

### IB. SECTION IB

Section IB requirements apply to lithium metal cells with a lithium metal content not exceeding 1 g and lithium metal batteries with a lithium metal content not exceeding 2 g packed in quantities that exceed the allowance permitted in Section II, Table 968-II.

Quantities of lithium metal cells or batteries that exceed the allowance permitted in Section II, Table 968-II, must be assigned to Class 9 and are subject to all of the applicable provisions of these Instructions (including the requirements in paragraph 2 of this packing instruction and of this section) except for ~~the following:~~ the provisions of Part 6.

Lithium ion cells or batteries shipped in accordance with the provisions of Section IB must be described on a dangerous goods transport document as set in Part 5:4. The packing instruction number "968" required by 5:4.1.5.8.1 a) must be supplement with "IB". All other applicable provisions of Part 5:4 apply.

- ~~the provisions of Part 6; and~~
- ~~the dangerous goods transport document requirements of 5:4, provided alternative written documentation is provided by the shipper describing the contents of the consignment. Where an agreement exists with the operator, the shipper may provide the information by electronic data processing (EDP) or electronic data interchange (EDI) techniques. The information required is as follows and should be shown in the following order:~~

- 1) ~~the name and address of the shipper and consignee;~~
- 2) ~~UN 3090;~~
- 3) ~~Lithium metal batteries PI 968-IB;~~
- 4) ~~the number of packages and the gross mass of each package.~~

Lithium metal or lithium alloy cells and batteries may be offered for transport if they meet all of the following:

- 1) for lithium metal cells, the lithium content is not more than 1 g;
- 2) for lithium metal or lithium alloy batteries, the aggregate lithium content is not more than 2 g;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the *UN Manual of Tests and Criteria*, Part III, subsection 38.3;

*Note 1.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.*

*Note 2.— Batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN Manual of Tests and Criteria, Part III, subsection 38.3 may continue to be transported.*

- 4) cells and batteries must be manufactured under a quality management programme as described in 2:9.3.1 e).

## Packing Instruction 968

### IB.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

**Table 968-IB**

Contents	Package quantity	
	Passenger	Cargo
Lithium metal cells and batteries	2.5 kg G	2.5 kg G

### IB.2 Additional requirements

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
  - damage to cells or batteries contained therein;
  - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
  - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31) in addition to the Class 9 hazard label.
- Each consignment must be accompanied with a document with an indication that:
  - the package contains lithium metal cells or batteries;
  - the package must be handled with care and that a flammability hazard exists if the package is damaged;
  - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and
  - a telephone number for additional information.

### IB.3 Outer packagings

*Boxes*

*Drums*

*Jerricans*

Strong outer packagings

## II. SECTION II

With the exception of Part 1;2.3 (Transport of dangerous goods by post), 7;4.4 (Reporting of dangerous goods accidents and incidents), 8;1.1 (Dangerous goods carried by passengers or crew) and paragraph 2 of this packing instruction, lithium metal or lithium alloy cells and batteries offered for transport are not subject to other additional requirements of these Instructions if they meet the requirements of this section.

Lithium metal or lithium alloy cells and batteries may be offered for transport if they meet all of the following:

- 1) for a lithium metal cell, the lithium content is not more than 1 g;
- 2) for a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g;
- 3) each cell or battery is of the type proven to meet the requirements of each test in the UN *Manual of Tests and Criteria*, Part III, subsection 38.3;

*Note 1.— Batteries are subject to these tests irrespective of whether the cells of which they are composed have been so tested.*

*Note 2.— Batteries and cells manufactured before 1 January 2014 conforming to a design type tested according to the requirements of the fifth revised edition of the UN Manual of Tests and Criteria, Part III, subsection 38.3 may continue to be transported.*

- 4) cells and batteries must be manufactured under a quality management programme as described in 2;9.3.1 e).

### II.1 General requirements

Cells and batteries must be packed in strong outer packagings that conform to Part 4;1.1.1, 1.1.3.1 and 1.1.10 (except 1.1.10.1).

## Packing Instruction 968

Table 968-II

<i>Contents</i>	<i>Lithium metal cells and/or batteries with a lithium content not more than 0.3 g</i>	<i>Lithium metal cells with a lithium content more than 0.3 g but not more than 1 g</i>	<i>Lithium metal batteries with a lithium content more than 0.3 g but not more than 2 g</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Maximum number of cells / batteries per package	No limit	8 cells	2 batteries
Maximum net quantity (mass) per package	2.5 kg	n/a	n/a

The limits specified in columns 2, 3 and 4 of Table 968-II must not be combined in the same package.

**II.2 Additional requirements**

- Cells and batteries must be packed in inner packagings that completely enclose the cell or battery, then placed in a strong outer packaging.
- Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.
- Each package must be capable of withstanding a 1.2 m drop test in any orientation without:
  - damage to cells or batteries contained therein;
  - shifting of the contents so as to allow battery to battery (or cell to cell) contact;
  - release of contents.
- Each package must be labelled with a lithium battery handling label (Figure 5-31).
- Each consignment must be accompanied with a document with an indication that:
  - the package contains lithium metal cells or batteries;
  - the package must be handled with care and that a flammability hazard exists if the package is damaged;
  - special procedures must be followed in the event the package is damaged, to include inspection and repacking if necessary; and
  - a telephone number for additional information.
- The words “lithium metal batteries, in compliance with Section II of PI968” must be placed on the air waybill, when an air waybill is used.
- Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

**II.3 Outer packagings***Boxes**Drums**Jerricans*

Strong outer packagings

**II.4 Overpacks**

When packages are placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word “Overpack”.

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## Part 5

### SHIPPER'S RESPONSIBILITIES

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#### 4.1.5.8 Additional requirements

4.1.5.8.1 The dangerous goods transport document must also contain:

a) ~~except for radioactive material,~~ the packing instruction applied ~~and,~~ For shipments of lithium batteries prepared in accordance with Section IB of Packing Instruction 965 or Packing Instruction 968, the letters "IB" must be added following the packing instruction number;

~~b)~~ when applicable, reference to Special Provision A1 or A2, ~~except for radioactive material;~~

~~b~~c) a statement indicating that the shipment is within the limitations prescribed for either passenger and cargo aircraft or cargo-only aircraft, as appropriate;

*Note.— To qualify as acceptable for transport aboard passenger aircraft, passenger aircraft packing instruction number(s) must be used, and the package must not bear the "Cargo aircraft only" label. To qualify as acceptable for transport aboard cargo-only aircraft, cargo aircraft packing instruction number(s) must be used, and the package must bear the "Cargo aircraft only" label; or passenger aircraft instruction number(s) must be shown and no "Cargo aircraft only" label applied. However, where the packing instruction number(s) and the permitted quantity per package are identical for passenger and cargo aircraft, the "Cargo aircraft only" label should not be used.*

~~e~~d) special handling information, when appropriate;

~~e~~e) an indication that an overpack has been used, when appropriate; and

~~e~~f) the "Q" value rounded up to the first decimal place, if substances are packed in accordance with 3;4.3.3 or 4;1.1.9 e).

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— END —