

# Lithium Batteries Section II 2012

## Lithium Batteries Section II 2012

Lithium Ion Batteries	Lithium Metal Batteries
general requirement: Cells ≤ 20 watt per hour / Batteries ≤ 100 watt per hour	general requirement: Cells ≤ 1g / Batteries ≤ 2g
<b>Packing Instruction 965</b> <b>Bulk (loose) Batteries</b> Max quantity per package 10 kg gross weight	<b>Packing Instruction 968</b> <b>Bulk (loose) Batteries</b> Max quantity per package 2.5 kg gross weight
<b>Packing Instruction 966</b> <b>Separately packed with equipment</b> No weight limit per package	<b>Packing Instruction 969</b> <b>Separately packed with equipment</b> No weight limit per package
<b>Packing Instruction 967*</b> <b>Contained in equipment</b> No weight limit per package	<b>Packing Instruction 970</b> <b>Contained in equipment</b> No weight limit per package

\* Equipment not containing more than 4 Cells or 2 Batteries does not require label, documents or any statement on waybill

### Shipment Example:

**PI = Packing Instruction**

**PI 965 /PI 968** – single Batteries or Cells up to the limits above

**PI 966 /PI 969** – PC, laptop, PDA etc. shipped and Batteries attached separately within the package

**PI 967 /PI 970** – PC, laptop, PDA etc. shipped and Batteries contained within the equipment

# Lithium Batteries Section II 2013

## Lithium Ion

Packing Instruction **965** – Bulk (loose) batteries / cells

≤ 2.7 watt /hour | no limit of cells and /or batteries | max weight 2.5kg net of batteries and /or cells

> 2.7 ≤ 20 watt /hour | max 8 cells | no weight limit

> 2.7 ≤ 100 watt /hour | max 2 batteries | no weight limit

Waybill: "Lithium Ion Batteries in compliance with Section II of PI 965"

Document: Safety measures in the event of fire or damages; phone number available during normal office hours

Label: Battery handling label



Notebook Li-Ion



Prismatic



CR series

Packing Instruction **966** – Separately packed with equipment

cells ≤ 20 watt /hour / batteries ≤ 100 watt /hour

The max number of batteries in each package must be limited to max number required to power the equipment + 2 spares

Quantity max 5 kg net of batteries and /or cells

Waybill: "Lithium Ion Batteries in compliance with Section II of PI 966"

Document: Safety measures in the event of fire or damages; phone number available during normal office hours

Label: Battery handling label



Packing Instruction **967** – Contained in equipment

cells ≤ 20 watt /hour / batteries ≤ 100 watt /hour

Quantity max 5 kg net of batteries and/or cells

Waybill\*: "Lithium Ion Batteries in compliance with Section II of PI 967"

Document \*: Safety advice in the event of fire or damage; phone number available during normal office hours

Label\*: Battery handling label



Note: \* **Only required when containing more than 4 cells or 2 batteries**

# Lithium Batteries Section II 2013

## Lithium Metal

Packing Instruction **968** – Bulk (loose) batteries / cells

≤ 0.3g | no limit of cells and/or batteries | max weight 2.5kg net of batteries and/or cells

> 0.3 ≤ 1g | max 8 cells | no weight limit

> 0.3 ≤ 2g | max 2 batteries | no weight limit

Waybill: "Lithium Metal Batteries in compliance with Section II of PI 968"

Document: Safety measures in the event of fire or damages; phone number available during normal office hours

Label: Battery handling label



Packing Instruction **969** – Separately packed with equipment

cells ≤ 1g / batteries ≤ 2g

The max number of batteries in each package must be limited to max number required to power the equipment + 2 spares

Quantity max 5 kg net of batteries and/or cells

Waybill: "Lithium Ion Batteries in compliance with Section II of PI 969"

Document: Safety measures in the event of fire or damages; phone number available during normal office hours

Label: Battery handling label



Packing Instruction **970** – Contained in equipment

cells ≤ 1g watt /hour / batteries ≤ 2g

Quantity max 5 kg net of batteries and/or cells

Waybill\*: "Lithium Ion Batteries in compliance with Section II of PI 970"

Document\*: Safety advice in the event of fire or damage; phone number available during normal office hours

Label\*: Battery handling label



Temperature Gauge

Laser Pointer

Note: \* **Only required when containing more than 4 cells or 2 batteries**

# Lithium Batteries Section IB 2013

## Lithium Ion

Packing Instruction **965** – Bulk (loose) batteries / cells

cells ≤ 20 watt /hour / batteries ≤ 100 watt /hour

**When exceeding the limitations of Section II**

## Lithium Metal

Packing Instruction **968** – Bulk (loose) batteries / cells

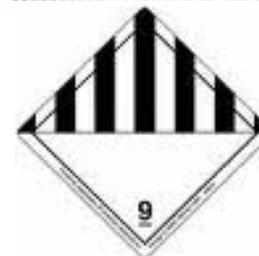
cells ≤ 1g watt /hour / batteries ≤ 2g

**When exceeding the limitations of Section II**

Requires documentation covering following contents:

- Name + address of shipper and receiver
- UN 3480 | Lithium Ion Batteries PI 965, 1B | Number of packages | max gross mass per package  
**Note: the gross weight of each package must not exceed 10 kg.**
- or
- UN 3090 | Lithium Metal Batteries PI 968, 1B | Number of packages | max gross mass per package  
**Note: the gross weight of each package must not exceed 2.5 kg**
- Label: Battery handling label + Class 9 label
- 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.
- Shipper Training Requirements => Must be DG certified (Cat 1 and 2) to process section IB

**Must be shown on NOTOC similar to dry ice (total quantity per Loading Device)**



# Illustration of change 2012 versus 2013 – Prismatic Li-Ion Cells

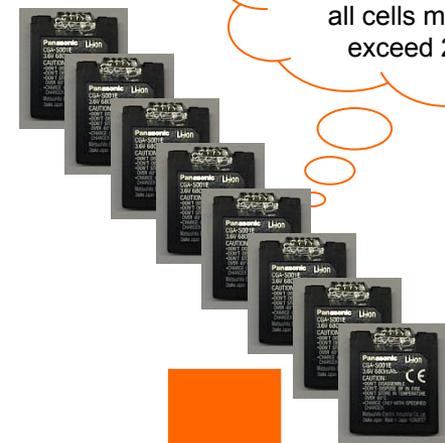


(each equal or less than 2.7 watt /hour)

Prismatic Li-Ion  
Cells for Portable Camera  
Per cell: 3.6V x 680mAh  
= 2.448 watt/hour

To keep within  
section II limit,  
total net weight of  
all cells must not  
exceed 2.5kg

CL9 label +  
shipper must be  
DG certified



24x Prismatic Li-ion  
cells packed into 1 box  
IATA limit per box: 10kg  
gross weight  
(no quantity limit)

8x Prismatic Li-ion  
cells packed into 1 box  
IATA limit per box: 2.5kg  
net quantity  
(no quantity limit)

24x Prismatic Li-ion  
cells packed into 1 box  
IATA limit per box: 10kg  
gross weight  
(no quantity limit)

Section II PI-965  
Year 2012

Section II PI-965  
Year 2013

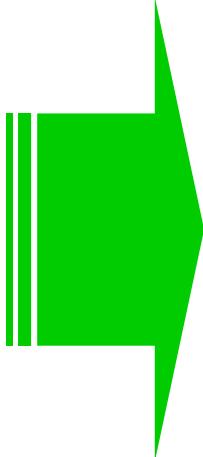
Section IB PI-965  
Year 2013

# Illustration of change 2012 versus 2013 – Tablet Li-Ion Cells (each >2.7 watt /hour but equal to or less than 20 watt /hour)

3.7V x 1,800mAh =  
6.66 watt /hour per  
cell



+

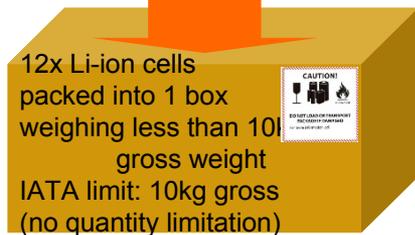


To keep within  
section II limits,  
Max 8 Batteries  
allowed per box



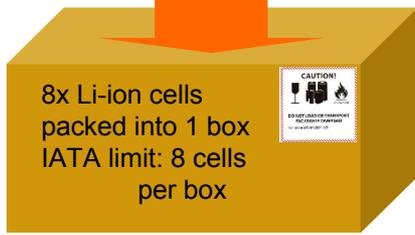
+

CL9 label +  
shipper must be  
DG certified



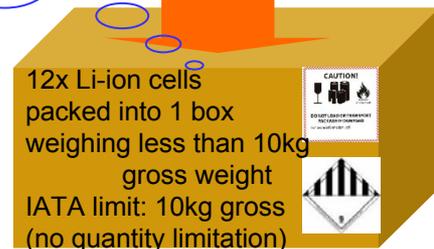
12x Li-ion cells  
packed into 1 box  
weighing less than 10kg  
gross weight  
IATA limit: 10kg gross  
(no quantity limitation)

Section II PI-965  
Year 2012



8x Li-ion cells  
packed into 1 box  
IATA limit: 8 cells  
per box

Section II PI-965  
Year 2013



12x Li-ion cells  
packed into 1 box  
weighing less than 10kg  
gross weight  
IATA limit: 10kg gross  
(no quantity limitation)

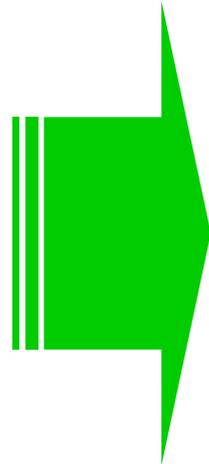
Section IB PI-965  
Year 2013

# Illustration of change 2012 versus 2013 – Notebook Li-Ion Battery (each more than 2.7 watt/hour but equal to or less than 100 watt/hour)



Section II PI-965

Year 2012



Section II PI-965

Year 2013



Section IB PI-965

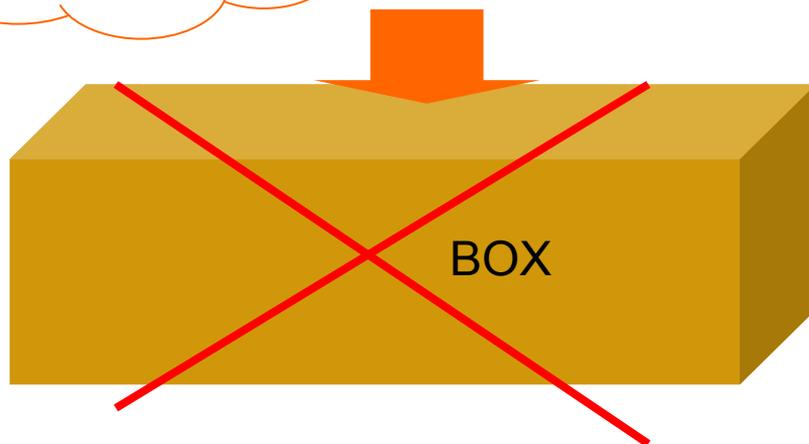
Year 2013

# Illustration on attempted mixed packing



8 Li-Ion cells for Tablet  
within section II limit. (watt  
/hour ratings per piece: >  
2.7watt /hour but equal to or  
< 20 watt /hour)

2 Li-Ion batteries for  
Notebook within section II limit  
(watt /hour ratings per piece:  
> 2.7 watt /hour but equal to  
or < 100 watt /hour)



### Question:

Can shipper pack into the same box 8 x Li-Ion cells (per piece >2.7 watt /hour but equal to or <20 watt /hour and 2 x Li-Ion batteries (per piece: 2.7 watt /hour but equal to or <100 watt /hour, both of which are within 2013 IATA DGR section II limit , and declare this under the section II limit?

### Answer:

No. Even with each battery types are kept within the IATA DGR 2013 section II limit, both types of batteries are NOT allowed to be packed into the same box. They must be packed into their own individual box to be acceptable for carriage by air.

## **Important Disclaimer:**

Please note that the information mentioned 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 of Lithium Batteries.

DHL will not be held responsible for any lack of accuracy of the information contained herewith.