

航空公司貨



運聯絡小組

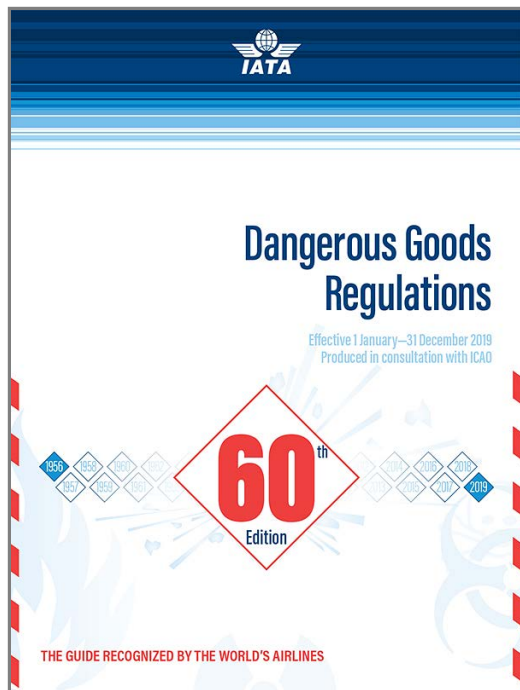
AIR CARGO

# 2018 DG Awareness Seminar

CLG – DGWG

19 December 2018

# HIGHLIGHT OF CHANGES IN IATA DANGEROUS GOODS REGULATIONS



# Significant Changes in DGR – Marking & Labelling

- The 2 mm line has been removed.



# Significant Changes in DGR – Document

- Format of the Shipper’s Declaration is slightly revised.
- All the samples in the DGR have been updated.
- The word “Risk” is changed to “Hazard”.
- The Title of Signatory and Place of Signing are removed.
- Transition period until 31 December 2024.

Class  
or Division  
(Subsidiary  
~~Risk~~)  
Hazard

~~Name/Title of Signatory~~

~~Place and Date~~

# Significant Changes in DGR – Handling

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- Segregation Requirement
  - UN 3528, engines and machines powered by a flammable liquid, are excepted from the segregation requirements that apply to Class 3 and Div 5.1 dangerous goods.
- Loading Restriction
  - UN 3528 and UN 3529 are exempted from the loading restriction for packages of dangerous goods bearing the “Cargo Aircraft Only” label.

# **LATEST CHANGES ON LITHIUM BATTERY PROVISIONS**

# Classification – Hybrid Lithium Battery

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- Lithium batteries, containing both lithium metal cells and lithium ion cells.
- The lithium ion cells can only be charged from the lithium metal cells.
- Overcharge of the lithium ion cells is precluded by design.
- The battery has been tested as a lithium metal battery.
- All component cells must have passed the UN 38.3 test.

# Classification – Hybrid Lithium Battery

- Not widely used
- Benefits:
  - High capacity
  - Perform well in wide operating temperature range
  - Long operating life
- Usual application:
  - Cargo tracking device
  - RFID device
  - Emergency and medical device





# Classification – Test Summary

- Effective from 1 January 2020, manufacturers and subsequent distributors of cells and batteries manufactured after 30 June 2003 must make available a test summary.

## Lithium cell or battery test summary in accordance with sub-section 38.3 of Manual of Tests and Criteria

The following information shall be provided in this test summary:

- (a) Name of cell, battery, or product manufacturer, as applicable;
- (b) Cell, battery, or product manufacturer's contact information to include address, phone number, email address and website for more information;
- (c) Name of the test laboratory to include address, phone number, email address and website for more information;
- (d) A unique test report identification number;
- (e) Date of test report;
- (f) Description of cell or battery to include at a minimum:
  - (i) Lithium ion or lithium metal cell or battery;
  - (ii) Mass;
  - (iii) Watt-hour rating, or lithium content;
  - (iv) Physical description of the cell/battery; and
  - (v) Model numbers.
- (g) List of tests conducted and results (i.e., pass/fail);
- (h) Reference to assembled battery testing requirements, if applicable (i.e., 38.3.3 (f) and 38.3.3 (g));
- (i) Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto, if any; and
- (j) Signature with name and title of signatory as an indication of the validity of information provided.

# Special Provision – A201

- With prior approval, UN 3480 and UN 3090 may be transported on passenger aircraft with the prior approval from the State of Origin, the State of the Operator and the State of Destination.

**Only when other forms of transport is impractical!!**

**(a)** for lithium metal cells or batteries:

1. up to 2 batteries with a lithium content more than 0.3 g but not more than 2 g per battery; or
2. up to 8 cells with a lithium content more than 0.3 g but not more than 1 g per cell; or
3. up to 2.5 kg of cells and/or batteries with a lithium content not more than 0.3 g per cell or battery; or

**(b)** for lithium ion cells or batteries:

1. up to 2 batteries with a Watt-hour (Wh) rating more than 2.7 Wh but not more than 100 Wh per battery; or
2. up to 8 cells with a Watt-hour rating more than 2.7 Wh but not more than 20 Wh per cell; or
3. up to 2.5 kg of cells and/or batteries with a Watt-hour rating not more than 2.7 Wh per cell or battery.

SP A334 sets out the conditions of the package for issue of approval

# Special Provision – A213

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- Specifically for Hybrid Lithium Batteries.
- Must be assigned to UN 3090 or UN 3091, as appropriate.
- When transported in accordance with Section II of PI 968, PI 969 or PI 970,
  - Total lithium content of all lithium metal cells contained must not exceed 1.5 g
  - Total capacity of all lithium ion cells must not exceed 10 Wh.

# Changes in Lithium Battery Packing Instructions

Category	Applicable PI	Applicable Section	Changes
Marking Requirement	PI 965, PI 966, PI 967, PI 968, PI 969, PI 970	Section II	The word “Overpack” must be at least 12 mm high (for all overpacks)
Packing Requirement	PI 966, PI 969	Section I, Section II	The number of cells or batteries in each package must not exceed the number required for the equipment’s operation, plus two spare sets. “Set” is the number of individual cells or batteries that are required to power each piece of equipment.

# **HIGHLIGHTS OF LITHIUM BATTERY PACKING INSTRUCTIONS**

# Lithium Ion & Metal Cells & Batteries (UN 3480, UN 3090)



UN 3480, PI 965

Section IA, IB, II

- ✧ State of Charge (SoC)
  - Not exceeding 30%
- ✧ Cargo Aircraft ONLY

UN 3480, PI 965, UN 3090, PI 968, Section II

- ✧ No more than ONE PACKAGE in a single consignment
- ✧ Packages must be offered to airlines separately from other cargo
- ✧ Must not be loaded into a ULD
- ✧ Overpack, no more than ONE PACKAGE of Section II lithium batteries in an overpack



# Lithium Ion & Metal Cells & Batteries (UN 3480, UN 3090)



UN 3480, PI 965

Section IA, IB, II

✧ State of Charge (SoC)

Not exceeding 30%

ONLY

**NO BUP  
NO CONSOL  
ONLY 1 PACKAGE per  
Consignment**

UN 3090, PI

ONE PACKAGE

per Consignment

Must be offered to

separately from other

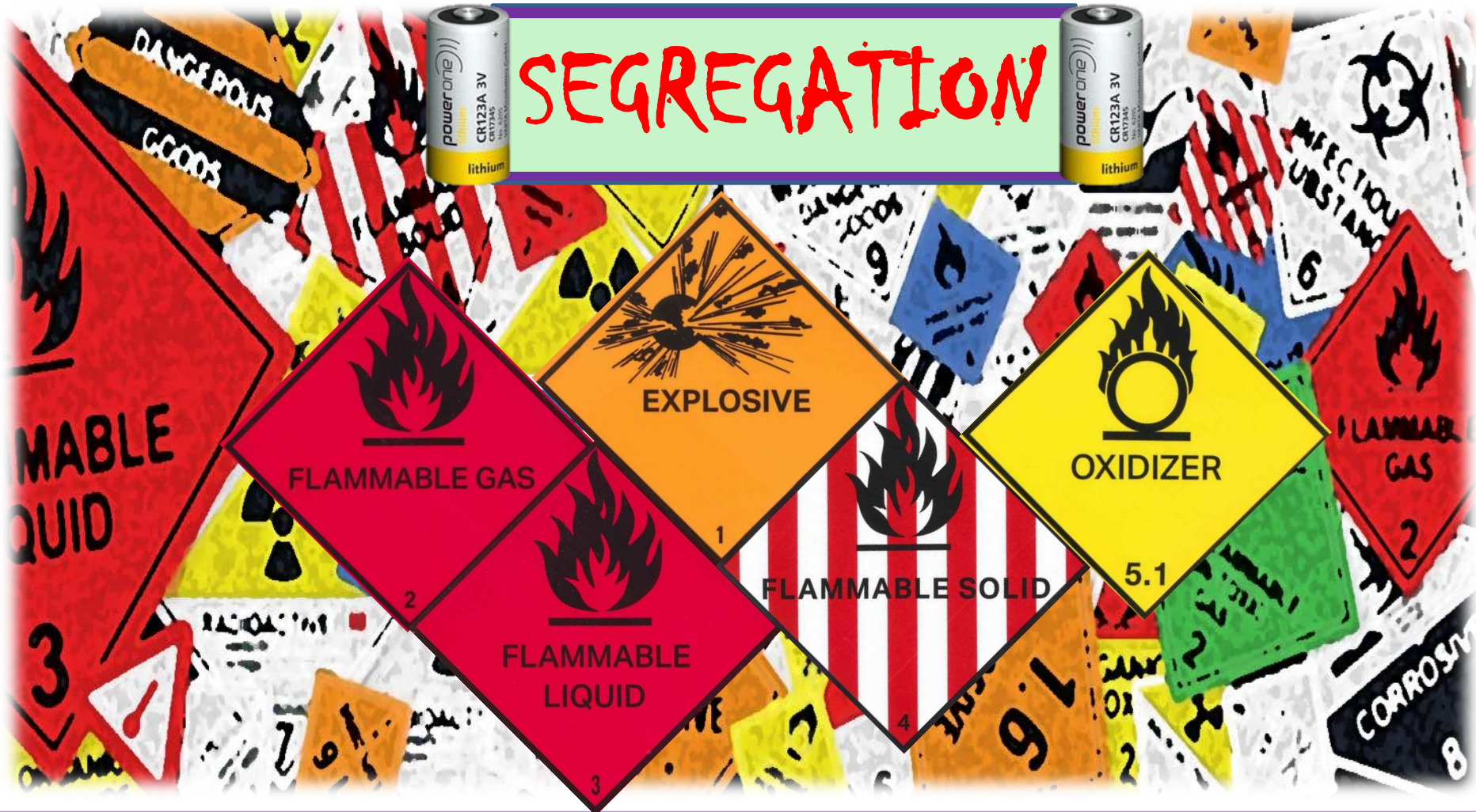
as cargo

✧ Must not be loaded into a ULD

✧ Overpack, no more than ONE PACKAGE of Section II lithium batteries in an overpack



# Lithium Ion & Metal Cells & Batteries (UN 3480, UN 3090)





# Lithium Cells & Batteries Packed with Equipment (UN 3481, UN 3091)



UN 3481, PI 966,  
UN 3091, PI 969  
Section I, II

## ✧ Definition of Equipment

- The device for which the lithium cells or batteries will provide electrical power for its operation



# Lithium Cells & Batteries Packed with Equipment (UN 3481, UN 3091)



**2 SPARE SETS**

**SET is...**

**the number of individual cells or batteries that are required to power each piece of equipment**

with the  
series  
al  
tion

# Lithium Cells & Batteries Contained in Equipment (UN 3481, UN 3091)

UN 3481, PI 967,  
UN 3091, PI 970  
Section I, II

## ✧ Definition of Equipment

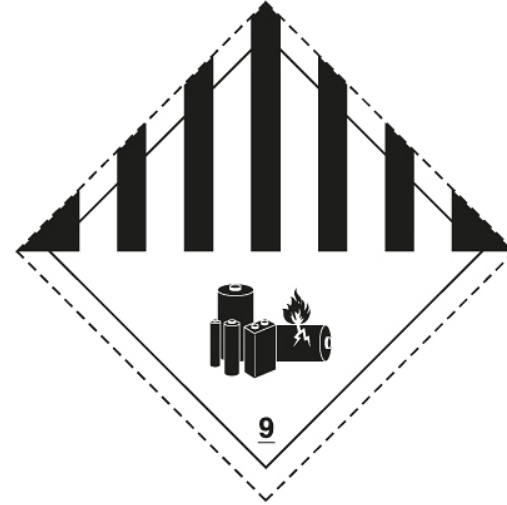
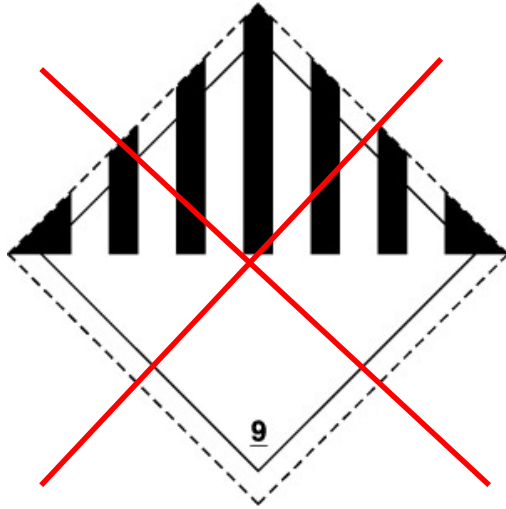
- The device for which the lithium cells or batteries will provide electrical power for its operation

## ✧ Marking Exception

- Consignments containing two packages or less where each package contains no more than four cells or two batteries installed in equipment do not require the lithium battery handling label
- Packages containing only button cells in equipment



# Marking & Labelling Requirements



**REVIEW OF  
“LITHIUM BATTERIES BP 016”**

# CLG – HAFFA Lithium Battery Best Practice

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- 5 Parts
  - Lithium Ion / Metal Batteries (UN 3480 / UN 3090)
  - Lithium Ion / Metal Batteries Packed with & Contained in Equipment (UN 3481 / UN 3091)
  - Lithium Battery Label & Mark
  - “Adequate Instruction”
  - Shipper’s Letter of Instruction

# Introduction

## Important Notes for All Lithium Cells / Batteries of All Sections:

- Each cell and battery must have completed the UN38.3 test.
- **Manufacturers and subsequent distributors of cells / batteries manufactured after 30 June 2003 must make available the test summary as specified in the UN38.3 test from 1 January 2020.**
- Section IA / I batteries manufactured after 31 December 2011 and Section IB / Section II batteries manufactured after 1 January 2009 must be marked with the watt-hour rating on the outside case.
- Cells and batteries must be manufactured under a quality management programme.
- Waste cells and batteries, cells and batteries identified by the manufacturer as being defective for safety reasons, or that have been damaged, having the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for air transport.
- Cells and batteries must be protected so as to prevent short circuits, and equipment must be equipped with an effective means of preventing accidental activation.
- Subject to the decision of individual carriers, relevant supporting documents of the shipment could be requested from shippers / forwarders. Supporting documents can be in the form of UN38.3 test report, UN38.3 test summary or SDS, or others, such as Product Data Sheet (PDS), and Product Information Sheet (PIS) that meet the acceptance needs of individual carriers.

# Hybrid Lithium Battery

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## **E. Additional Requirements (Hybrid Lithium Battery and SP A213)**

Contains both lithium metal cells and lithium ion cells that is not designed to be charged externally. They must meet the following conditions:

- The lithium ion cells can only be charged from the lithium metal cells;
- Overcharge of the lithium ion cells is precluded by design;
- The battery has been tested as a lithium metal battery;
- Component cells must have passed the respective UN 38.3 test;
- Must be assigned to UN 3090 or UN 3091, as appropriate.



# **HIGHLIGHT OF DANGEROUS GOODS CARRIED BY PASSENGERS**

# Passenger Provisions

For personal use:

Item	Approval from operator	Permitted in or as checked baggage	Permitted in or as carry-on baggage
Baggage with installed lithium batteries – non-removable batteries exceeding 0.3 g lithium metal / 2.7 Wh	FORBIDDEN		
Baggage with installed lithium batteries – removable	NO	YES	YES
Baggage with installed lithium batteries – non-removable batteries, no more than 0.3 g lithium metal / 2.7 Wh	NO	YES	YES
Spare / loose batteries, for PEDs (including power bank and lithium batteries)	NO	NO	No more than 20 pieces per person

# Passenger Provisions

Item	Approval from operator	Permitted in or as checked baggage	Permitted in or as carry-on baggage
Lithium metal batteries, no more than 2 g lithium content	NO	NO	Spare batteries' quantity limit
Lithium ion batteries, no more than 100 Wh			
Lithium ion batteries, exceeding 100 Wh but no more than 160 Wh	YES	NO	No more than 2 pieces per person
Lithium battery PED, no more than 2 g lithium content or 100 Wh	NO	No more than 15 PED per person YES	
Lithium battery PED, exceeding 100 Wh but no more than 160 Wh	YES	YES	YES

# Safety Comes First

Ship safely



# Safety Comes First

Travel safely



**THANK YOU**