

Class 9 Dangerous Goods Shipping Guidelines:

**Reference Instructions For Shipping Primary Lithium
Ion Batteries and Dukane Seacom Underwater
Locator Beacons Containing Those Batteries Per
Dangerous Good Regulations**

This document was last updated 5/10/2017

Air Shipping Requirements

	UN #, Packing Instruction # Section # & Training	PRODUCTS/CODES	INDIVIDUAL LABEL REQUIREMENTS	ACCOMPANYING DOCUMENTATION	BOX TYPE	PACKAGE WEIGHT/ QTY RESTRICTION
1.	UN3091 PI970 Section II	Locator Beacon Code C DK100, DK120, DK130, DK140, DKM504, DKM502, DKM102	Lithium Metal Label Fig. 1	Lithium Battery Safety Document (ref Attachment 1)	Standard	5 kg (11.02 lb) of batteries or 250 Locators
2.	UN3091 PI970 Section I DG Training Req.	Locator Beacon Code B/F DK100/90, DK120/90(-1), DK180, DK470, DK485, DK228, DKM502/90, N15B217B	CLASS 9 Label Fig. 2 , UN3091 Fig. 3	Full Shipper's Declaration for Dangerous Goods FedEx – (DG Contract required , Shipper's Dec. (3 Color Copies)) UPS – (DG Contract required , Shipper's Dec. (3 Copies))	UN SPEC. REQ.	5 kg (11.02 lb) of batteries or 110 Locators
3.	UN3090 PI968 Section IB DG Training Req.	AA Lithium Metal Cell(s) (9 or more cells or 3 or more batteries) 810- 2008/K, 810-2013/K, 810-2016/K, 810-2019/K, 3-136-0005, B362- 06192-2(Bat), B362-06192-1(Bat)	Lithium Metal Label Fig. 1 , CLASS 9 Label Fig. 2 , CARGO Label Fig. 4 , UN3090 Fig. 5	Lithium Battery Safety Document See Section 9.0, Full Shipper's Declaration for Dangerous Goods FedEx – (DG Contract required , Shipper's Dec. (3 Color Copies)) UPS – (DG Contract required , Shipper's Dec. (3 Copies))	1.2m drop test	2.5 kg (5.52 lb) of batteries or 125 Cells/Kits
4.	UN3090 PI968 Section IA DG Training Req.	C Lithium Metal Cell(s) 810-2007/K, 810-2042/K, 810-2018/K, 810-2017/K, 810-2020/K, 810-2010/K, 3-136-0003	CLASS 9 Label Fig. 2 , CARGO Label Fig. 4 , UN3090 Fig. 5	Full Shipper's Declaration for Dangerous Goods FedEx – (DG Contract required , Shipper's Dec. (3 Color Copies)) UPS – (DG Contract required , Shipper's Dec. (3 Copies))	UN SPEC. REQ.	35 kg (77.16 lb) of batteries or 750 Cells/Kits

Ground Shipping Requirements

	UN #, Packing Instruction #, Section # & Training	PRODUCTS/CODES	INDIVIDUAL LABEL REQUIREMENTS	ACCOMPANYING DOCUMENTATION	BOX TYPE	PACKAGE WEIGHT/ QTY RESTRICTION
1.	UN3091 §173.185 (c)(1)(ii) and (c)(3)	Locator Beacon Code C DK100, DK120, DK130, DK140, DKM504, DKM502, DKM102			Standard	5 kg (11.02 lb) of batteries or 250 Locators
2.	UN3091 §173.185 (c)(1)(iv) and (c)(3)	Locator Beacon Code B/F DK100/90, DK120/90(-1), DK180, DK470, DK485, DK228, DKM502/90, N15B217B	Forbidden on Aircraft & Vessel, Fig. 6		Standard	5 kg (11.02 lb) of batteries or 110 Locators
3.	UN3090 §173.185 (c)(1)(ii)	AA Lithium Metal Cell(s) 810- 2008/K, 810-2013/K, 810- 2016/K, 810-2019/K, 3-136- 0005, B362-06192-2(Bat), B362-06192-1(Bat)	Lithium Metal Label Fig. 1 , Forbidden on Passenger Aircraft, Fig. 7	Ground Lithium Battery Safety Document (ref Attachment 2)	1.2m drop test	30 kg (66 lb) of batteries or 1500 Cells/Kits
4.	UN3090 §173.185 (c)(1)(iv)	C Lithium Metal Cell(s) 810-2007/K, 810-2042/K, 810- 2018/K, 810-2017/K, 810- 2020/K, 810-2010/K, 3-136- 0003	Lithium Metal Label Fig. 1 , Forbidden on Aircraft & Vessel, Fig. 6	Ground Lithium Battery Safety Document (ref Attachment 2)	1.2m drop test	30 kg (66 lb) of batteries or 650 Cells/Kits



Figure 1 (Lithium Metal Battery Label) **Use till 1/1/2019**

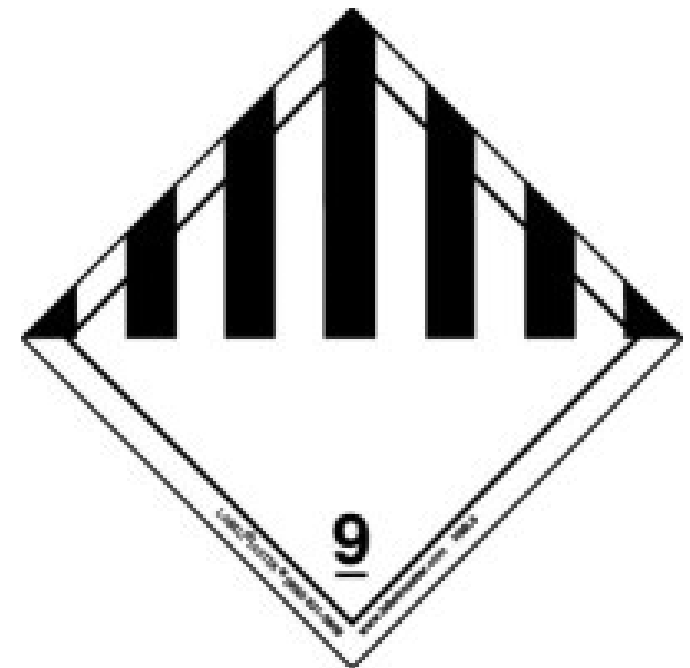


Figure 2 (CLASS 9 Label) **Use till 1/1/2019**



Figure 3 (UN3091 Box Label)



Figure 4 (CARGO AIRCRAFT ONLY Label)



Figure 5 (UN3090 Box Label)



Figure 6 (Forbidden on Aircraft & Vessel)

LITHIUM METAL BATTERIES - FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT

**If package is damaged follow included
procedures**

Figure 7 (Forbidden on Passenger Aircraft)

Attachment 1: AIR LITHIUM BATTERY SAFETY DOCUMENT

WARNING: LITHIUM BATTERIES THAT HAVE BEEN RECALLED BY THE MANUFACTURER FOR SAFETY REASONS **MUST NOT** BE SHIPPED BY AIR.

Terminology:

- Cell – *electrochemical unit, consisting of an anode and a cathode, capable of generating electrical current*
- Battery – *assembly of cells*
- Lithium ion cells/batteries – *rechargeable – includes lithium polymer cells/batteries*
- Lithium metal cells/batteries – *generally non-rechargeable*

This package contains lithium cells or batteries in the following configuration (tick applicable box):

- This package must be handled with care. A flammability hazard exists if the package is damaged.
- If this package is damaged in transportation, it must not be loaded until the condition of the contents can be verified. The batteries contained in this package must be inspected for damage and may only be repacked if they are intact and protected against short circuits.
- For more information about the batteries contained in this package, call the following telephone number: (shippers phone number)

Lithium Ion - <i>Maximum of</i>	Lithium Metal – <i>Maximum of</i>
• 20 Watt-hours per cell; and • 100 Watt-hours per battery	• 1 gram of lithium metal per cell; and • 2 grams of lithium per battery
☐ Cells or batteries only (ICAO/IATA Packing Instruction 965, Section II) – <i>Cells or batteries in a package, without electronic equipment</i> Package Limit: $\leq 2.7\text{Wh} = 2.5\text{kg}$; or $> 2.7\text{Wh}$ but $\leq 20\text{Wh} = 8$ cells; or $> 2.7\text{Wh}$ but $\leq 100\text{Wh} = 2$ batteries	☐ Cells or batteries only (ICAO/IATA Packing Instruction 968, Section II) – <i>Cells or batteries in a package, without electronic equipment</i> Package Limit: $\leq 0.3\text{g} = 2.5\text{kg}$; or $> 0.3\text{g}$ but $\leq 1\text{g} = 8$ cells; or $> 0.3\text{g}$ but $\leq 2\text{g} = 2$ batteries
☐ Cells or batteries only (ICAO/IATA Packing Instruction 965, Section IB) – <i>Cells or batteries in a package, without electronic equipment</i>	☐ Cells or batteries only (ICAO/IATA Packing Instruction 968, Section IB) – <i>Cells or batteries in a package, without electronic equipment</i>
☐ Packed with equipment (ICAO/IATA Packing Instruction 966, Section II) – <i>Cells or batteries contained in a package with associated electronic equipment</i>	☐ Packed with equipment (ICAO/IATA Packing Instruction 969, Section II) – <i>Cells or batteries contained in a package with associated battery-powered equipment – with the batteries not installed in the equipment</i>
☐ Contained in equipment (ICAO/IATA Packing Instruction 967, Section II) – <i>> 4 Cells or 2 batteries installed in equipment</i>	☐ Contained in equipment (ICAO/IATA Packing Instruction 970, Section II) – <i>> 4 Cells or 2 batteries installed in equipment</i>

Attachment 2: GROUND LITHIUM BATTERY SAFETY DOCUMENT

WARNING: LITHIUM BATTERIES THAT HAVE BEEN RECALLED BY THE MANUFACTURER FOR SAFETY REASONS **MUST NOT BE SHIPPED BY AIR.**

Terminology: This package contains:

☐ Lithium Ion Batteries/Cells	☐ Lithium Metal Batteries/Cells
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- This package must be handled with care. A flammability hazard exists if the package is damaged.
- If this package is damaged in transportation, it must not be loaded until the condition of the contents can be verified. The batteries contained in this package must be inspected for damage and may only be repacked if they are intact and protected against short circuits.
- For more information about the batteries contained in this package, call the following telephone number:
- (shippers phone number)

Additional References:

http://images.fedex.com/us/services/pdf/LithiumBattery_Overview_2017.pdf

https://www.ups.com/media/news/en/us_lithium_battery_regulations.pdf

<https://www.iata.org/whatwedo/cargo/dgr/Documents/lithium-battery-guidance-document-2017-en.pdf>