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

<table>
<thead>
<tr>
<th>UN #, Packing Instruction # Section # &amp; Training</th>
<th>PRODUCTS/CODES</th>
<th>INDIVIDUAL LABEL REQUIREMENTS</th>
<th>ACCOMPANYING DOCUMENTATION</th>
<th>BOX TYPE</th>
<th>PACKAGE WEIGHT/ QTY RESTRICTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. UN3091 PI970 Section II</td>
<td>Locator Beacon Code C DK100, DK120, DK130, DK140, DKM504, DKM502, DKM102</td>
<td>Lithium Metal Label Fig. 1</td>
<td>Lithium Battery Safety Document (ref Attachment 1)</td>
<td>Standard</td>
<td>5 kg (11.02 lb) of batteries or 250 Locators</td>
</tr>
<tr>
<td>2. UN3091 PI970 Section I DG Training Req.</td>
<td>Locator Beacon Code B/F DK100/90, DK120/90(-1), DK180, DK470, DK485, DK228, DKM502/90, N15B217B</td>
<td>CLASS 9 Label Fig. 2, UN3091 Fig. 3</td>
<td>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))</td>
<td>UN SPEC. REQ.</td>
<td>5 kg (11.02 lb) of batteries or 110 Locators</td>
</tr>
<tr>
<td>3. UN3090 PI968 Section IB DG Training Req.</td>
<td>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)</td>
<td>Lithium Metal Label Fig. 1, CLASS 9 Label Fig. 2, CARGO Label Fig. 4, UN3090 Fig. 5</td>
<td>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))</td>
<td>1.2m drop test</td>
<td>2.5 kg (5.52 lb) of batteries or 125 Cells/Kits</td>
</tr>
<tr>
<td>4. UN3090 PI968 Section IA DG Training Req.</td>
<td>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</td>
<td>CLASS 9 Label Fig. 2, CARGO Label Fig. 4, UN3090 Fig. 5</td>
<td>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))</td>
<td>UN SPEC. REQ.</td>
<td>35 kg (77.16 lb) of batteries or 750 Cells/Kits</td>
</tr>
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## Ground Shipping Requirements

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</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>UN3091 §173.185 (c)(1)(ii) and (c)(3)</strong></td>
<td>Locator Beacon Code C DK100, DK120, DK130, DK140, DKM504, DKM502, DKM102</td>
<td></td>
<td></td>
<td>Standard</td>
<td>5 kg (11.02 lb) of batteries or 250 Locators</td>
</tr>
<tr>
<td>2. <strong>UN3091 §173.185 (c)(3)(iv) and (c)(3)</strong></td>
<td>Locator Beacon Code B/F DK100/90, DK120/90(-1), DK180, DK470, DK485, DK228, DKM502/90, N15B217B</td>
<td>Forbidden on Aircraft &amp; Vessel, Fig. 6</td>
<td></td>
<td>Standard</td>
<td>5 kg (11.02 lb) of batteries or 110 Locators</td>
</tr>
<tr>
<td>3. <strong>UN3090 §173.185 (c)(1)(ii)</strong></td>
<td>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)</td>
<td>Lithium Metal Label Fig. 1, Forbidden on Passenger Aircraft, Fig. 7</td>
<td>Ground Lithium Battery Safety Document (ref Attachment 2)</td>
<td>1.2m drop test</td>
<td>30 kg (66 lb) of batteries or 1500 Cells/Kits</td>
</tr>
<tr>
<td>4. <strong>UN3090 §173.185 (c)(1)(iv)</strong></td>
<td>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</td>
<td>Lithium Metal Label Fig. 1, Forbidden on Aircraft &amp; Vessel, Fig. 6</td>
<td>Ground Lithium Battery Safety Document (ref Attachment 2)</td>
<td>1.2m drop test</td>
<td>30 kg (66 lb) of batteries or 650 Cells/Kits</td>
</tr>
</tbody>
</table>
Figure 1 (Lithium Metal Battery Label) Use till 1/1/2019

Figure 2 (CLASS 9 Label) Use till 1/1/2019
UN3091
Lithium Metal Batteries Contained in Equipment

Figure 3 (UN3091 Box Label)

Figure 4 (CARGO AIRCRAFT ONLY Label)
UN3090
Lithium Metal Batteries

LITHIUM BATTERIES - FORBIDDEN FOR TRANSPORT ABOARD AIRCRAFT AND VESSEL

Shipper’s Address Here

If package is damaged follow included procedures

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)

<table>
<thead>
<tr>
<th>Lithium Ion - Maximum of</th>
<th>Lithium Metal – Maximum of</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 20 Watt-hours per cell; and</td>
<td>• 1 gram of lithium metal per cell; and</td>
</tr>
<tr>
<td>• 100 Watt-hours per battery</td>
<td>• 2 grams of lithium per battery</td>
</tr>
</tbody>
</table>

□ Cells or batteries only (ICAO/IATA Packing Instruction 965, Section II) – Cells or batteries in a package, without electronic equipment

Package Limit:
- ≤2.7Wh = 2.5kg; or
- >2.7Wh but ≤ 20Wh = 8 cells; or
- >2.7Wh but ≤ 100Wh = 2 batteries

□ Cells or batteries only (ICAO/IATA Packing Instruction 968, Section II) – Cells or batteries in a package, without electronic equipment

Package Limit:
- ≤0.3g = 2.5kg; or
- >0.3g but ≤ 1g = 8 cells; or
- >0.3g but ≤ 2g = 2 batteries

□ Cells or batteries only (ICAO/IATA Packing Instruction 965, Section IB) – Cells or batteries in a package, without electronic equipment

□ Cells or batteries only (ICAO/IATA Packing Instruction 968, Section IB) – Cells or batteries in a package, without electronic equipment

□ Packed with equipment (ICAO/IATA Packing Instruction 966, Section II) – Cells or batteries contained in a package with associated electronic equipment

□ Packed with equipment (ICAO/IATA Packing Instruction 969, Section II) – Cells or batteries contained in a package with associated battery-powered equipment – with the batteries not installed in the equipment

□ Contained in equipment (ICAO/IATA Packing Instruction 967, Section II) – > 4 Cells or 2 batteries installed in equipment

□ Contained in equipment (ICAO/IATA Packing Instruction 970, Section II) – > 4 Cells or 2 batteries installed in equipment

For Reference Only; Review CFR Title 49 (2016) & IATA Dangerous Good Regulations 57th Edition
Consult Your Freight Handling Company For Their Specific Requirements
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

- 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:

