Shipment of Li-ion cells and batteries with protection against external short –circuit

Battery Association of Japan

August 31, 2010
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### General Requirements for shipping

**[For cells and batteries]**

- Each cell and 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.

**[For packing]**

- Cells and batteries shall be packed in inner packaging that completely enclose the cell or battery.
- Cells and batteries shall be protected so as to **prevent short circuits**.
  
  **NOTE:** This includes protection against contact with conductive materials within the same packaging that could lead to a short circuits.
- The inner packaging shall be packed in strong outer packagings.

UN Recommendation on the Transport of Dangerous Goods: Model Regulations 16\textsuperscript{th} revised Edition – Special provision 188 (snippet)
Example of packing specifications (Prismatic cell)

1. **CELL (ICP463450AR)**
   - Rust proofed film
   - Partition
   - Inner pad

2. **INNER CARTON PACKING**
   - 5 lines
   - 20 Pcs./line

3. **MASTER CARTON PACKING**
   - Desiccant Poly bag
   - Master carton
   - 2 cartons
   - 2 layers
   - Adhesive tape
   - Document of Handling Instruction
   - Indication for the ICAO
   - Information of the products

**Total quantity:** 400pcs.
**Total weight:** 8kg(approx.)
Example of packing specifications (Cylindrical cell)

Total quantity: 150pcs.
Total weight: 8kg(approx.)
Example of packing specifications (Battery pack)

Total quantity: 20pcs.
Total weight: 9kg(approx.)
Safe transportation of used batteries

Direction for safe transport of used batteries

⇒ Ensure prevention external short circuit!

- Ensure protection terminals of used batteries with suitable insulation.
- Do not disassemble the used batteries.
- Use strong outer packaging.
- Fix contents in place do not move around inside the outer packaging during transportation.
- Limit the total weight of items in one package.