



Instructions for Packing HV Battery Modules in UN Barrels Model S and Model X

CD-21-16-001

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⚠ WARNING: Only staff trained on both “ADR Dangerous Goods Transportation” and “High Voltage Awareness” are permitted to perform the procedure outlined in this document.

⚠ WARNING: The HV battery is classified by the ADR as UN3480, Class 9 and must be transported in line with the Transportation instructions as defined in the ADR.

⚠ WARNING: Proper personal protective equipment (PPE) including insulating HV gloves with a minimum rating of class 00 (500V) must be worn at any time when an HV battery module is handled.

⚠ WARNING: Make sure that salt bath neutralized HV battery modules have been submerged for at least 2 weeks, and that no bubbles are rising to the surface. Bubbles indicate that the discharging process is still ongoing, and the battery is not ready for packing.

⚠ WARNING: When handling salt bathed HV battery modules, appropriate PPE including a face shield, chemical resistant gloves, and an apron must be worn.

⚠ WARNING: Always keep the barrel away from ignition sources since flammable gasses are emitted during the salt bathing process and may still be emitted during the packing process.

⚠ WARNING: Move the HV battery module only via a stable platform to prevent the module from falling. Make sure that you always wear safety shoes to prevent injury in case a battery module is accidentally dropped.

Procedure

1. Remove the lid from a UN approved 200 liter barrel.
2. Put one large liner bag into the empty barrel (Figure 1).



Figure 1

3. Add a 10 cm deep layer of vermiculite to the bottom of the liner bag (Figure 2).



Figure 2

- Put each HV battery module into a module bag, and then close the bag with a cable tie. Make sure that the bag is closed correctly (Figure 3).



Figure 3

- Put the bag with the HV battery module into the barrel (Figure 4).

⚠ CAUTION: Do not put more than 4 HV battery modules into a barrel.

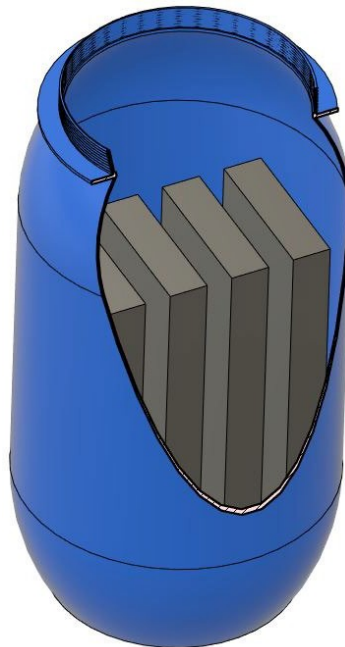


Figure 4

- Use vermiculite to fill the empty spaces in the barrel, and then add 10 cm of vermiculite on top of the HV battery modules (Figure 5).

⚠ CAUTION: Make sure that the HV battery modules do not touch each other or the barrel wall.

- 1 = 10 cm layer of vermiculite on bottom
- 2 = HV battery modules (x4)
- 3 = Empty spaces to be filled with vermiculite
- 4 = 10 cm layer of vermiculite on top of modules

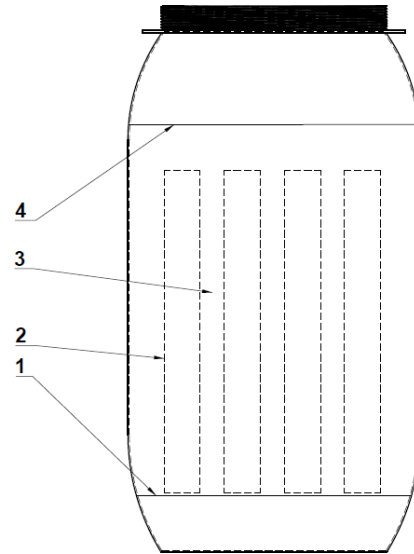


Figure 5 - Barrel with 4 HV battery modules

- Remove excess air from the liner bag, close the bag, and then close the bag with a cable tie (Figure 6).



Figure 6

8. Put the lid onto the barrel, and then attach the clamping ring (Figure 7).



Figure 7

9. Apply the “UN3480” and the “UN3480 DAMAGED / DEFECTIVE LITHIUM-ION BATTERIES” labels to the barrel (Figure 8).



Figure 8

10. For storage of the barrels, following guidelines apply:
 - a. Store the barrels in an isolated and fenced off area.
 - b. Do not stack the barrels.
 - c. Store the barrels upright.
 - d. Do not store the barrels near chemical products.