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**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Thirty-seventh session**

Geneva, 21–30 June 2010

Item 4 of the provisional agenda

**Electric storage systems****Transport of used cells or batteries for disposal or recycling****Transmitted by The Portable Rechargeable Battery Association  
(PRBA) and RECHARGE<sup>1</sup>****Introduction**

1. During the thirty-third session of the Sub-Committee, the expert from Germany submitted informal document INF.51 referencing the need for provisions in the United Nations Model Regulations for used lithium batteries being shipped for disposal or recycling. PRBA and RECHARGE agree that new packaging and special provisions should be included in the United Nations Model Regulations for shipments of these batteries. This is particularly important in light of the following developments in the shipment of batteries:

- (a) Large quantities of used lithium ion batteries and lithium metal batteries are being collected and shipped for recycling;
- (b) Many of these used batteries may be mixed with other battery technologies in the same packaging;
- (c) The Sub-Committee has recently classified nickel metal hydride batteries as Class 9 dangerous goods;
- (d) The unique packaging needed for large lithium ion batteries.

2. The expert from Germany suggested in informal document INF.51 that packing provisions for used batteries in the Model Regulations be aligned with the ADR/RID or the

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<sup>1</sup> In accordance with the programme of work of the Sub-Committee for 2009-2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.3/68, para. 118 (a) and ST/SG/AC.10/36, para. 14).

general requirements in §173.185(d) Title 49 of the US Code of Federal Regulations. PRBA and RECHARGE agree that the packaging provisions for used batteries in the ADR/RID are a good starting point for the Sub-Committee to consider developing similar provisions in the Model Regulations.

3. Below and on the following page, PRBA and RECHARGE have included Special Provision 636 and Packing Instructions 903a and 903b (with minor proposed changes) for used lithium batteries from the ADR/RID for the Sub-Committee’s consideration.

**Proposal**

4. The Sub-Committee is requested to consider adopting a special provision and packing instructions similar to Special Provision 636 and Packing Instruction 903a and 903b into the UN Model Regulations to facilitate the transport of used lithium ion and lithium metal batteries but also recognize additional provisions may be necessary for packing large used lithium ion batteries.

**Special Provision 636 from ADR/RID**

~~SP 636 (a) Cells contained in equipment shall not be capable of being discharged during carriage to the extent that the open circuit voltage falls below 2 volts or two thirds of the voltage of the undischarged cell, whichever is the lower.~~

(ab) Used lithium cells and batteries with a gross mass of not more than 500 g each collected and presented for carriage for disposal between the consumer collecting point and the intermediate processing facility, together with other non-lithium cells or batteries, are not subject to the other provisions of these Regulations if they meet the following conditions:

- (i) The provisions of packing instruction P903b are complied with;
- (ii) A quality assurance system is in place to ensure that the total amount of lithium cells or batteries per transport unit does not exceed 333 kg;
- (iii) Packages shall bear the inscription: "USED LITHIUM ~~CELLS~~ BATTERIES".

P 903a	PACKING INSTRUCTION	P 903a
This instruction applies to used cells and batteries of UN Nos. 3090, 3091, 3480 and 3481		
The following packagings are authorized, provided the general provisions of <b>4.1.1</b> , except 4.1.1.3, and <b>4.1.3</b> are met.		
Packaging conforming to the packing group II performance level.		
Non-approved packaging shall, however, be permitted provided that:		
<ul style="list-style-type: none"> <li>- they meet the general provisions of 4.1.1 and 4.1.3 are met;</li> <li>- the cells and batteries are <u>designed or</u> packed and stowed so as to prevent any risk of short circuits;</li> <li>- the package weighs not more than 30 kg.</li> </ul>		
<b>Additional requirement:</b>		
Batteries shall be <u>designed or packed in such a way to</u> <del>protected</del> from short circuits.		

P 903b	PACKING INSTRUCTION	P 903b
This instruction applies to used cells and batteries of UN Nos. 3090, 3091, 3480 and 3481		
Used lithium cells and batteries with a gross mass of not more than 500 g each, collected for disposal, may be carried together with other used non-lithium batteries or alone without being individually protected, under the following conditions:		
<p>(1) In 1H2 drums or 4H2 boxes conforming to the packing group II performance level for solids;</p> <p>(2) In 1A2 drums or 4A boxes fitted with a polyethylene bag and conforming to the packing group II performance level for solids. The polyethylene bag</p> <ul style="list-style-type: none"> <li>– shall have an impact resistance of at least 480 grams in both parallel and perpendicular planes with respect to the length of the bag;</li> <li>– shall have a minimum of 500 microns of thickness with an electrical resistivity of more than 10 Mohms and a water absorption rate over 24 hours at 25 °C lower than 0.01%;</li> <li>– shall be closed and</li> <li>– may only be used once;</li> </ul> <p>(3) In collecting trays with a gross mass of less than 30 kg made from non-conducting material meeting the general conditions of 4.1.1.1, 4.1.1.2 and 4.1.1.5 to 4.1.1.8.</p>		
<b>Additional requirements:</b>		
The empty space in the packaging shall be filled with cushioning material. The cushioning material may be dispensed with when the packaging is entirely fitted with a polyethylene bag and the bag is closed.		
Hermetically sealed packagings shall be fitted with a venting device according to 4.1.1.8. The venting device shall be so designed that an overpressure caused by gases does not exceed 10 kPa.		