

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

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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

Introduction

1. In ST/SG/AC.10/C.3/2010/36, PRBA and RECHARGE explain that the UN Model Regulations currently do not provide for shipments of used lithium cells and batteries. Such regulations are necessary to accommodate the large quantities of these cells and batteries that are being collected and shipped internationally for recycling, including shipments of mixed battery chemistries. In addition, there is a need to accommodate packaging for larger lithium ion batteries designed for use in hybrid and electric vehicles.

2. PRBA and RECHARGE's proposal in ST/SG/AC.10/C.3/2010/36 is generally consistent with the requirements in the ADR/RID. However, after discussions with several transport authorities, battery industry representatives and recyclers, PRBA and RECHARGE are proposing the special provision and packing instructions provided below instead of those contained in ST/SG/AC.10/C.3/2010/36. We believe they more accurately account for small lithium cells and batteries currently excepted from regulation pursuant to Special Provision 188, lithium cells and batteries that must be offered as Class 9 dangerous goods and large lithium ion batteries designed for use in hybrid and electric vehicles.

Proposal

~~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".

Special Provision XXX

(a) Used lithium ion or lithium metal cells and batteries that meet the Watt-hour or lithium metal content limitations in Special Provision 188(a) and 188(b) and offered for transport for recycling or disposal together with other consumer-type, non-lithium dry cells or batteries that are packaged in accordance with packing instruction P903a are not subject to other provisions of these Regulations. Packages shall be marked: "MAY CONTAIN USED LITHIUM BATTERIES".

(b) Used lithium ion or lithium metal cells and batteries offered for transport for recycling or disposal that meet the conditions of packing instruction 903b are not subject to the requirements of Special Provision 230 of these Regulations.

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 4.1.1, except 4.1.1.3, and 4.1.3 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"> — they meet the general provisions of 4.1.1 and 4.1.3 are met; — the cells and batteries are <u>designed or packed</u> and stowed so as to prevent any risk of short circuits; — the package weighs not more than 30 kg. 		
Additional requirement:		
Batteries shall be <u>designed or packed in such a way to protected</u> from short circuits.		

P 903a	PACKING INSTRUCTION	P 903a
<p>This instruction applies to used lithium ion and lithium metal cells and batteries of UN Nos. 3090, 3091, 3480 and 3481.</p>		
<p>(1) Used cells and batteries shall be packed in strong outer packagings which conform to the provisions of 4.1.1.1, 4.1.1.2, and 4.1.1.5 and, except when installed in or packed with equipment, not exceed 30 kg gross mass;</p> <p>(2) Used cell and batteries shall be packed in 1H2 drums or 4H2 boxes equivalent to the packing group II performance level for solids; or</p> <p>(3) Used cell and batteries shall be packed in 1A2 drums or 4A boxes fitted with a polyethylene bag and equivalent to the packing group II performance level for solids. The polyethylene bag</p> <ul style="list-style-type: none"> - shall have an impact resistance of at least 480 grams in both parallel and perpendicular planes with respect to the length of the bag; - 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%; - shall be closed and - may only be used once. 		
<p>Additional requirement:</p> <p>Cells and batteries shall be designed, discharged or packed in such a way to protect from short circuits that could lead to a dangerous evolution of heat or fire.</p>		

P 903b	PACKING INSTRUCTION	P 903b
<p>This instruction applies to used cells and batteries of UN Nos. 3090, 3091, 3480 and 3481</p>		
<p>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> <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"> — shall have an impact resistance of at least 480 grams in both parallel and perpendicular planes with respect to the length of the bag; — 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%; — shall be closed and — may only be used once; <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>		
<p>Additional requirements:</p> <p>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.</p> <p>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.</p>		

P 903b	PACKING INSTRUCTION	P 903b
<u>This instruction applies to used lithium ion and lithium metal cells and batteries of UN nos. 3090, 3091, 3480 and 3481</u>		
<u>The following packagings are authorized, provided the general provisions of 4.1.1, except 4.1.1.3, and 4.1.3 are met:</u>		
<ul style="list-style-type: none">- <u>Packaging equivalent to the packaging group II performance level for solids. When cells and batteries included in class 9 are contained in equipment, the equipment shall be packed in strong outer packagings in such a manner as to prevent accidental operation during carriage.</u>		
<u>In addition, undamaged cells and batteries with strong, impact resistant outer casings of a gross mass of 12 kg or more and assemblies of such batteries, may be packed in strong outer packagings, in protective enclosures (e.g. in fully enclosed or wooden slatted crates) unpackaged or on pallets. Batteries shall be secured to prevent inadvertent movement, and the terminals shall not support the weight of other superimposed elements.</u>		
<u>Additional requirement:</u>		
<u>Cells and batteries shall be designed, discharged or packed in such a way to protect from short circuits that could lead to a dangerous evolution of heat or fire.</u>		