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Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Safety Committee and the
Working Party on the Transport of Dangerous Goods

Geneva, 11-15 September 2006
Agenda item 5

PROPOSALS FOR AMENDMENTS TO RID/ADR/ADN*

Carriage of used lithium batteries

Proposal of the European Portable Battery Association (EBRA/EPBA)

SUMMARY

Executive summary:

The joint meeting adopted specific provisions establishing a number of exemptions for the transport of used lithium cells, with other cells or alone, for recycling.

After a few years of application, experience has shown that certain parts of these provisions pose some practical problems.

Decision to be taken: Amend special provision 636 and packing instruction P903b.

* Distributed by the Central Office for International Carriage by Rail (OCTI) under symbol OCTI/RID/GT-III/2006/35.

Introduction

1. To facilitate the transport of used cells, their packing has been subject to some exemptions. The cells may be transported in bulk, and need not be individually insulated, but may be carried in plastic drums or crates, which must include cushioning material.
2. In addition, there is an even more extensive exemption for collection and transport from the primary collection point to the first collection centre, provided the collection containers used do not hold more than 30 kg.
3. These provisions are applicable only to cells of less than 250 g gross mass.

Problems encountered

4. While these provisions do facilitate transport of used cells for recycling, our members still encounter practical problems in implementing them.
5. The use of exclusively plastic packaging has proved to be inadvisable. Experiments with metal drums have shown that they are both easier to use and safer. Conduction by the metal can be easily avoided through the use of plastic lining sacks.
6. The cushioning material has proved to be difficult to use. It is unnecessary, as the density of the cells limits their movement in relation to one another.
7. The unit weights of the cells and rechargeable batteries that we process in such collections can be as high as 500 g (laptop batteries).
8. Primary collection understandably benefits from broader RID/ADR exemptions, as the operators in question (shops, etc.) are not in a position to follow the rules. In practice, however, their collection bins are only exceptionally used for transport. Currently, the procedure is as follows: the collection bins are emptied into drums that are in conformity with instruction P903b at the collection site, and the drum is then transported to the collection centre.
9. Use of the drums ensures greater safety during both handling and transport.
10. We would like to benefit from the broader exemption set out in special provision 636 while being able to use drums, but for a limited total vehicle load.

Proposal

- 636 (a) Used lithium cells and batteries 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 or alone, are not subject to the other provisions of ADR if they meet the following conditions:
- (i) The gross mass of each lithium cell or battery does not exceed 500 g;

- (ii) The provisions of packing instruction P903b (2) are complied with;
- (iii) Cells and rechargeable batteries that are collected together with other cells not subject to RID/ADR may also benefit from the above exemptions, provided the conditions of instruction P903b (1) are complied with and their gross load mass does not exceed 10 tonnes;
- (b) 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;
- (c) Packages containing used cells or batteries in unmarked packagings shall bear the inscription: "Used lithium cells".

Recast the P903b packing instruction as follows:

P903b	PACKING INSTRUCTION	P903b
	This instruction applies to used cells and batteries of UN Nos. 3090 and 3091.	
	Used lithium cells and batteries, with a gross mass of not more than 500 g collected for disposal, together with other used non-lithium batteries or alone, may be carried, without being individually protected, under the following conditions: <ul style="list-style-type: none"> (1) In 1H2 drums or 4H2 boxes <u>or in 1A2 drums or 4A crates fitted with a plastic lining sack</u> conforming to the packing group II performance level for solids; (2) 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. 	
	Additional requirement: The empty space in the packaging shall be filled with appropriate cushioning material so as to restrict the relative movements of the batteries during carriage. 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.	

Justification - safety problems

The use of metal packing is safer, and the problem of conduction by the metal is avoided with the use of non-conductive plastic lining sacks.

The increase of the cells' mass to 500 g does not entail a significant added risk. In any case, consumers dump such rechargeable batteries in the collection bins, and it is not always possible to sort them out.

Collection bins generally contain an average of 0.2-1.5 per cent lithium cells. A high of 3 per cent may occasionally be observed.

A load of 10 tonnes thus contains a maximum of 300 kg of lithium cells. This quantity of cells is covered under exemption 1.1.3.6. In our view, by the same reasoning, only the packing and labelling requirements need apply to such loads, and these would ensure sufficient safety.
