



**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****Fifty-fifth session**

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Item 6 (b) of the provisional agenda

**Miscellaneous proposals for amendments to the Model Regulations
on the Transport of Dangerous Goods: Packagings****Applicability of packing instruction LP906****Transmitted by the European Association for Advanced Rechargeable Batteries (RECHARGE), International Organisation of Motor Vehicle Manufacturers (OICA), the Rechargeable Battery Association (PRBA), and the Council on Safe Transportation of Hazardous Articles (COSTHA)*****Introduction**

1. Packing instructions P911 and LP906 have been developed in order to provide a packaging solution for damaged and defective batteries of UN Nos. 3090, 3091, 3480 and 3481 liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport.
2. The qualification process of this packaging has to be approved by the competent authority, based on a number of criteria identified in note "a" to LP906. These criteria are defined in a way to ensure that the qualification process demonstrates the efficiency of the packaging protection in the worst foreseeable case scenario.
3. As a result, the industry is considering robust and quite massive packaging capable of containing the hazards of the large lithium batteries in case of thermal reaction. These packaging may also contain expensive specific devices for extinguishing or controlling the reactions hazards.

* In accordance with the programme of work of the Sub-Committee for 2019-2020 approved by the Committee at its ninth session (see ST/SG/AC.10/C.3/108, paragraph 141 and ST/SG/AC.10/46, paragraph 14).

4. The usage conditions of P911 and LP906 have to be described by the packaging supplier and provided to the packaging user, in order to verify that the packaging is used according to the conditions defined for the qualification process (type of batteries, quantities, configuration, etc...), as indicated in paragraph 2 of LP906. These conditions are specific to P911 and LP906 and prevent the concern that the usage of a large packaging for multiple batteries could be extended to other types of large packaging.
5. It is recognized in P911 that the packaging can be used for multiple batteries. For example, if the packaging qualification process is demonstrating that the hazards in case of reaction of several small batteries are not exceeding the hazards produced by the reaction of a larger battery, then this type of products can be transported in the qualified packaging (i.e. transport two batteries of 100 kg instead of one battery of 200kg).
6. Packing instruction LP906 has been created for the transport of batteries larger than 400 kg. Although the qualification process and the conditions of usage are exactly the same for LP906 and for P911, it is not possible to use the large packing instruction LP906 for more than a single battery, as it is explicitly specified in the text of the packing instruction. For example, a packaging qualified for the transport of a battery of 900 kg cannot be used for two batteries of 450 kg, where two large packaging would be needed. It is recognized that other large packing instructions for lithium batteries are also restricting the usage to a single battery (like LP903 and LP904). Nevertheless, the specific qualification process and the package properties (containing the hazards in the worst-case scenario) in the case of LP906 make this restriction superfluous. On the contrary, it may limit the usage of the existing packaging and require unjustified investment in multiple packaging solutions and multiple testing, thus reducing the application of this solution.
7. During the fifty-fourth session of the Sub-Committee several concerns were raised about the risk of misuse of this packaging, for example while having hundreds of small batteries loose in a large packaging and therefore having people misusing the packaging to transport small damaged batteries in vast amounts. To prevent this, it is suggested to introduce the need of an inner packaging per battery as soon as the packaging is intended to be used for more than one battery. This method would prevent the possibility to transport damaged batteries as bulk transport and make it very unpractical for multiple small batteries.
8. As an example: In automotive industry a hybrid battery weighs e.g. 120 kg and four of such batteries would not be allowed in a packaging that had been tested to pass a test (worst case scenario) of a 600kg (more kWh than four hybrid batteries in total) battery according to LP906. Tests with P911 packaging shows that most of the time, having e.g. 8x 20kg batteries inside such packaging there is very low likelihood of a reaction of one battery to affect others. Therefore, the hazard, the risk as well as the severity are much lower with batteries individually packed, not reacting all at once and more likely expecting only one part of the event of the content in the packaging.
9. Important to notice is also that batteries that could fall under special provision 188 should be excluded (as is the case e.g. in ADR anyway).
10. Another way to solve the concern raised could be that the large packaging has been tested with multiple batteries, in addition to the test with a single large battery, with a test method approved by the authority for the transport under these tested conditions.
11. In order to provide for the needed flexibility in the usage of the LP906 packaging, without reducing the control of the potential risk of transport of large damaged and defective lithium batteries, we propose to allow for the usage of the LP906 packaging for multiple batteries, if these batteries are individually packed in an inner packaging, or if these batteries have been tested with the packaging or if the test method approved by the authority allows for multiple batteries.

Proposal

12. In LP906, amend as follows the first sentence after the introductory paragraph, following one of the two options below:

Option 1:

“The following large packagings are authorized, provided that the general provisions 4.1.1 and 4.1.3 are met:

For a single battery and batteries contained in a single item of equipment or, when packed individually in an inner packaging, for batteries and batteries contained in a single item of equipment”.

Option 2:

“The following large packagings are authorized, provided that the general provisions 4.1.1 and 4.1.3 are met:

For a single battery and batteries contained in a single item of equipment or for multiple batteries, if approved otherwise for the test method by the competent authority, or as tested otherwise with the approved test method.”
