



**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****Forty-fourth session**

Geneva, 25 November – 4 December 2013

Item 3 (e) of the provisional agenda

Electric storage systems: miscellaneous**Amendments regarding lithium batteries****Transmitted by the expert from Germany¹****Introduction**

1. In the penultimate sentence of special provision 188 as well as in the definition of lithium content in 38.3.2.3 in the Manual of Tests and Criteria, fifth revised edition amendment 1; it is said that “lithium content” means the mass of lithium *in the anode* of a lithium metal or lithium alloy cell” respectively “Lithium content is applied to lithium metal and lithium alloy cells and batteries, and for a cell means the mass of lithium *in the anode* of a lithium metal or lithium alloy cell”.
2. With regard to the applicability of the provisions referred to, the question was raised whether lithium batteries whose lithium content is not located at the anode but at the cathode are at all subject to the provisions of the Model Regulations. Germany is of the opinion that all lithium batteries are subject to these provisions, irrespective of whether the lithium content is located at the anode or at the cathode.
3. The Model Regulations and the Manual of Tests and Criteria should be amended in order to accommodate the state of development of lithium batteries.
4. The Sub-Committee did not support the previous proposal to replace the specific term “anode” with the more general term “electrode” (ST/SG/AC.10/C.3/2013/13). The revised proposal below has been prepared on the basis of the comments received.

¹ In accordance with the programme of work of the Sub-Committee for 2013–2014 approved by the Committee at its sixth session (see ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

Proposal

5 The penultimate sentence of special provision 188 should be amended to read as follows:

“As used above and elsewhere in these Regulations, “lithium content” means the **aggregated lithium content** ~~mass of lithium in the anode~~ of a lithium metal or lithium alloy cell.”

6 The first sentence of the definition in 38.3.2.3 in the Manual of Tests and Criteria fifth revised edition amendment 1 should be worded as follows:

“*Lithium content* is applied to lithium metal and lithium alloy cells and batteries, and for a cell means the **aggregated lithium content** ~~mass of lithium in the anode~~ of a lithium metal or lithium alloy cell, which for a primary cell is measured when the cell is in an undischarged state and for a rechargeable cell is measured when the cell is fully charged.”

7 The first sentence of 38.3.3 (f) should be amended to read as follows:

“When testing a battery assembly in which the aggregate lithium content ~~of all anodes~~, when fully charged, is not more than 500 g, or in the case of a lithium ion battery, with a Watt-hour rating of not more than 6 200 Watt-hours, that is assembled from cells or batteries that have passed all applicable tests, one battery assembly in a fully charged state shall be tested under tests 3, 4 and 5, and, in addition, test 7 in the case of a rechargeable battery assembly.”

8 The last sentence of 38.3.3 should be amended to read as follows:

“When batteries that have passed all applicable tests are electrically connected to form a battery assembly in which the aggregate lithium content ~~of all anodes~~, when fully charged, is more than 500 g, or in the case of a lithium ion battery, with a Watt-hour rating of more than 6 200 Watt-hours, that battery assembly does not need to be tested if it is equipped with a system capable of monitoring the battery assembly and preventing short circuits, or over discharge between the batteries in the assembly and any overheat or overcharge of the battery assembly.”
