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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****Fifty-seventh session**

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Item 4 (a) of the provisional agenda

Electric storage systems: Testing of lithium batteries**Lithium Battery Test Summary**

Transmitted by the Medical Device Battery Transport Council (MDBTC), Dangerous Goods Advisory Council (DGAC), PRBA – The Rechargeable Battery Association, Council on the Safe Transport of Hazardous Articles (COSTHA), European Association for Advanced Rechargeable Batteries (RECHARGE), Sporting Arms & Ammunition Manufacturers' Institute (SAAMI), and Dangerous Goods Trainer Association (DGTA)*

Introduction

1. Since the adoption of the requirement in 2.9.4 (g) of the Model Regulations to require cell and battery manufacturers and downstream distributors to make available the Test Summary (TS) as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5, the industry has been working to implement appropriate systems for complying with the new requirement. As explained below, members of the various organizations submitting this paper have experienced unanticipated challenges complying with the TS requirements. We are therefore proposing specific amendments to the TS requirements that will help facilitate compliance with the original intent of the TS.

2. One of the primary reasons for developing the TS was to provide a means for dangerous goods regulatory authorities to enforce the UN38.3 lithium battery testing requirements and identify and locate the original battery and product manufacturers who first place the lithium batteries on the market and the test labs conducting the UN38.3 tests. To that end, the TS is an effective enforcement tool. The TS also provides greater granularity in terms of understanding the Watt-hour rating of lithium ion batteries, the grams of lithium metal contained in lithium metal batteries, and the physical description of the batteries or products containing the batteries. For example, it is impossible to know the Watt-hour rating of a lithium ion battery embedded in a tablet or the grams of lithium metal in an AA lithium metal cell simply by looking at the product. The TS now provides that important compliance information for new products entering the market.

* 2020 (A/74/6 (Sect.20) and Supplementary, Subprogramme 2)

3. One of the most challenging and unanticipated consequences associated with the TS for Portable Electronic Device (PED) manufacturers is knowing whether older PEDs have ever been refurbished and had the original lithium ion battery replaced. A “refurbished” PED is generally defined as a product that has been used for its intended purpose and returned for repair and/or replacement of parts. Other terms used for “refurbished” are “remanufactured” and “rebuilt.” We know of at least two air carriers that are not accepting refurbished PEDs for transport due to the uncertainty over the lithium ion batteries in the PEDs. We expect to see a significant increase in the volume of refurbished lithium batteries and PEDs as government agencies and organizations such as the European Commission promote these efforts and place legal obligations on manufacturers to make their products easier to repair and reuse.¹

4. Our members also have received TS requests for PEDs that were manufactured over ten years ago. It is logical to assume in these cases that the original lithium ion battery is no longer in the PED. It would be impossible for the original product manufacturer to know exactly who manufactured the new battery that was installed in the refurbished PEDs. The original TS for the lithium ion batteries manufactured ten years ago should therefore not be considered relevant in this case and in fact may expose the original product manufacturers to uncertain legal liability if they provide a TS for older, refurbished PEDs. Additionally, it is not clear what length of time after a cell, battery or product has ceased to be in production is the manufacturer required to maintain the availability of the TS for that cell, battery or product.

5. Therefore several changes are proposed to 2.9.4 of the Model Regulations to address the unique compliance challenges identified in paragraphs 3 and 4 above. The changes include requiring the TS for lithium batteries manufactured after 1 January 2019 instead of 1 January 2003 and limiting a manufacturer’s potential liability on refurbished or repaired products.

6. In informal document INF.21 (55th session) the MDBTC proposed to amend 2.9.4 (g) to include the statement “The test summary is not intended to accompany the transport document.” The Sub-Committee agreed with the interpretation that the TS is not a transport document and is not intended to accompany a shipment of lithium batteries. It was agreed that the TS should be publicly available (*e.g.*, cell/battery manufacturer’s website) but it is not mandatory that it should accompany the transport document. However, the proposal to revise 2.9.4 (g) was not adopted as it was considered that the current text was sufficiently clear. Since this was considered by the Sub-Committee the industry continues to experience requests that the TS accompany the transport document. Carriers, freight forwarders and others in the supply chain are now demanding copies of the TS as a condition of transport. Considering that the Sub-Committee has already noted that this is not the intent and the fact that it continues to be a problem, we are requesting reconsideration of the previous proposal.

7. What is meant by the term “make available” continues to present challenges because of different interpretations by various entities within the supply chain. It is being interpreted as a required transport document by some freight forwarders and carriers. For example, DB Schenker International includes a statement on their website that the TS is a mandatory transport document: *See* <https://www.dbschenker.com/fi-en/about/press/corporate-news/test-summary-for-transporting-lithium-cells-and-batteries-619192>. The statement advises consignors of the following:

“Transporting of lithium cells and batteries within DB Schenker network requires a copy of the test summary according to the United Nations’ definition as from January 1, 2020. The test summary is required for the UN numbers UN3090 and UN3091 as well as UN3480, UN3481, UN3171 (if lithium battery powered) and UN3166 (if hybrid vehicle with lithium cells or batteries).

¹ See: <https://www.theguardian.com/world/2020/mar/11/eu-brings-in-right-to-repair-rules-for-phones-and-tablets>

The consignor is asked to send the test summary via email vaarallisetaineet@dbschenker.com (for Finland) and mention the shipping ID on the subject field (Consignment ID or waybill number)."

8. Companies such as DHL Express clearly indicate that "DHL Express will not request the TS for shipment acceptance, but customers must have the document available upon request." See the following link on DHL's website: http://www.iq.dhl.com/content/dam/downloads/g0/express/shipping/lithium_batteries/dhl_express_lithium_battery_guide.pdf In other cases, a carrier's policy on the TS is being implemented inconsistently by the carrier's employees leading to even more confusion.

9. The Sub-Committee previously agreed that due to the large volume of lithium batteries and lithium battery powered products that are shipped daily, manufacturers and distributors should not be expected to immediately provide a TS for every product they ship. Manufacturers and distributors should be provided a reasonable amount of time to provide the required TS. To facilitate consistent interpretation of the meaning of "*make available*" we propose to add a note defining the term in 2.9.4 (g) and clearly state that consignors are not required to provide a TS with each consignment.

10. Another challenge associated with the TS is when several commercially available button cell batteries are used in a battery powered device such as a wristwatch or key fob. The challenge lies in the fact that while each battery supplier may have made available the TS it becomes a challenge identifying which battery is in the product especially when it may be one of several similar batteries produced by different suppliers. The Sub-Committee should therefore consider the implications of the TS to products that contain small lithium button cell batteries. In accordance with Special Provision 188, products that contain lithium button cell batteries are excepted from the lithium battery marking requirement and, provided the equipment offers adequate protection, the requirement to use a strong, rigid outer package. In practice, many shippers view these products as not subject to the transport regulations. Given that lithium button cell batteries are commonly found on electronic circuit boards for all types of electronics – battery-powered or otherwise – the current language will subject shippers of traditionally non-regulated products (*e.g.*, plug-in PCs, wristwatches) to maintain a TS. We would agree that the manufacturer of the cells be required to make the TS available but having to verify this for every button cell battery in a device is unrealistic. On this basis, we propose to amend 2.9.4 (g) to except button cell batteries contained in equipment from the requirement to make the TS available.

11. The requirement in paragraph (i) of the TS in Section 38.3.5 of the UN Manual of Tests and Criteria indicates the "reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto, if any" is cumbersome and considered unnecessary. This requirement is exponentially cumbersome when the TS is intended to cover multiple devices because the cell or battery that they contain may have been tested at different times to differing amendments of the Manual of Tests and Criteria. The UN Model Regulations only require that:

"Cells and batteries manufactured according to a type meeting the requirements of sub-section 38.3 of the Manual of Tests and Criteria, Revision 3, Amendment 1 or any subsequent revision and amendment applicable at the date of the type testing may continue to be transported, unless otherwise provided in these Regulations."

It should therefore be sufficient to only indicate on the TS that the cell or battery was tested to the Manual of Tests and Criteria, Revision 3, Amendment 1 or a subsequent revision. In cases where a competent authority needs to know the exact revision and amendment, they can request the test report since this authority already exists in 2.9.4(e)(iv) where it is stated that "Test data shall be kept and made available to the competent authority upon request." No person in the supply chain needs to know the revision and amendment the cell or battery was tested to.

12. The signature requirement in paragraph (j) of the TS in Section 38.3.5 of the Manual of Tests and Criteria in the view of the authors of this paper is not necessary. Requiring the name and contact information as required in 38.3.5 (b) is considered sufficient to allow the competent authority or those in the supply chain with a legitimate need to contact the cell, battery or product manufacturer. Providing a signature is considered redundant and unnecessary.

Proposal

13. Amend 2.9.4 (g) as follows:

- (a) Add an exception for button cell batteries installed in equipment and change the date for the applicable test summary date from 30 June 2003 to 1 January 2019 so that it reads:

“Except for button cell batteries installed in equipment (including circuit boards), manufacturers and subsequent distributors of cells or batteries manufactured after 1 January 2019 shall make available the test summary as specified in the Manual of Tests and Criteria Part III, sub-section 38.3, paragraph 38.3.5.”

- (b) Add the following note to explain the meaning of “make available”:

Note: These regulations do not require consignors to provide a test summary with each consignment. The term “make available” means providing the test summary to dangerous goods enforcement authorities or a person in the manufacturer’s or subsequent distributor’s supply chain to ensure compliance with the UN38.3 test requirements. The options for making the test summary available include, but are not limited to, publishing it to a public website, providing it upon request in a reasonable amount of time, or attaching it to a transport document. The test summary only needs to be made available to authorities and persons that have a legitimate need for it to facilitate compliance with the applicable transport regulations. Manufacturers are not required to make available a test summary if they have reason to believe their battery or product has been refurbished or repaired and no longer reflects the battery design covered by their original test summary.”

14. In 38.3.5 of the UN Manual of Tests and Criteria:

- (a) Amend paragraph (i) in the test summary to read:

“An indication that the cells or batteries were tested to the Manual of Tests and Criteria, Revision 3, Amendment 1 or a subsequent revision.”

- (b) Remove paragraph (j) in the test summary, which mandates a signature and title.
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