



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, D.C. 20590

JUN 27 2012

Mr. George Kerchner
Executive Director
Rechargeable Battery Association
1776 K Street, NW
Washington, DC 20006

Ref. No.: 12-0078

Dear Mr. Kerchner:

This responds to your March 19, 2012 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the lithium ion battery testing requirements. The requirements you address are contained in Section 38.3 of the United Nations (UN) Manual of Test and Criteria and are implemented through the provisions of § 173.185 of the HMR. Your questions are paraphrased and answered as follows:

Q1. Section 38.3.3 of the UN Manual of Test and Criteria states “when batteries (comprised of successfully-tested component cells) 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.”

Are Tests 1, 2, 3, 4, and 5 in Section 38.3 of the UN Manual of Tests and Criteria the only applicable tests for batteries designed for use in a battery assembly over 6200 Watt-hours when the batteries are not equipped with overcharge protection and the battery assembly affords such protection?

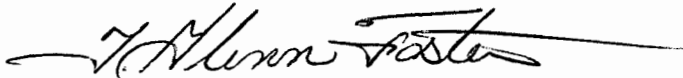
A1. The answer is yes, provided that the component cells passed all applicable tests as required in Section 38.3.

Q2. If the answer to Q1 is yes, must the completed battery assembly be subjected to the Test 7 overcharge test?

A2. The answer is no. Per Section 38.3.3(d) of the UN Manual of Test and Criteria, when testing rechargeable batteries under Test 7, batteries not equipped with overcharge protection that are designed for use only in a battery assembly (which affords such protection) are not subject to the requirements of this test.

I hope this satisfies your inquiry. Please contact us if we can be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Glenn Foster", with a long horizontal flourish extending to the right.

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division



March 19, 2012

Nickels
\$173.185
Lithium Batteries
12-0078

Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Request for Interpretation on UN Lithium Battery Testing Requirements

I am writing to request a clarification on an issue related to testing large lithium ion battery assemblies with a Watt-hour rating of over 6200 in accordance with section 38.3 of the UN Manual of Tests and Criteria.

The lithium battery tests in the UN Manual of Tests and Criteria contain the following provision:

*When batteries that have passed **all applicable tests** [emphasis added] 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 6200 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.*

Our understanding of the "applicable tests" for lithium ion batteries used in battery assemblies as referred to in the provision above may in some cases only be Tests 1, 2, 3, 4 and 5. That is because Tests 6 and 8 are only applicable to cells (not batteries), and Test 7 (Overcharge) is not required in cases where batteries are not equipped with overcharge protection and are designed for use only in a battery assembly, which affords such protection. (See last paragraph in Section 38.3.3(d).)

Therefore, we would like confirmation from your office on the following two questions:

1. Please confirm that Tests 1, 2, 3, 4 and 5 in Section 38.3 of the UN Manual of Tests and Criteria may in some cases be the only "applicable tests" for batteries designed for use in a battery assembly over 6200 Wh when the batteries are not equipped with overcharge protection and the battery assembly affords such protection.

2. In the case above when only Tests 1, 2, 3, 4 and 5 are required for the batteries and no overcharge test is conducted, must the completed battery assembly be subject to the Test 7 Overcharge test?

* * *

Please contact me at 202.719.4109 if you have any questions regarding this request for interpretation.

Thank you for your assistance.

Sincerely,

George Kerchner

George Kerchner
Executive Director