



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety
Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

MAR 07 2017

Mr. Kendall Wilcox
EMC Corporation
2421 Mission College Boulevard
Santa Clara, CA 95054

Reference No. 16-0022

Dear Mr. Wilcox:

This letter is in response to your January 12, 2016, e-mail and subsequent conversation with staff requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). You reference a letter of interpretation previously issued to you under Reference No. 12-0137 in November 2012, addressing testing requirements in the United Nations (UN) Manual of Tests and Criteria (MTC) for a completed system that consisted of multiple lithium ion battery packs connected to a single printed circuit board used to power a memory card. Based on the information provided, we stated in the 2012 letter that the final connected system did not appear to be a battery assembly as described in UN MTC 38.3.3(f). Therefore, it was the opinion of this Office at that time that a completed connected system containing lithium ion battery packs as described was not required to be tested in accordance with part III sub-section 38.3 of the UN MTC provided the lithium ion battery packs themselves had successfully passed the tests. In this follow-up 2016 letter, you ask questions regarding the classification and testing of lithium battery assemblies assembled from your battery packs electrically connected to a printed circuit board when shipped as replacement spares. Based on the supplemental information provided in this recent letter and consistent with amendments to the MTC and HMR, it is now the opinion of this Office that the battery configuration used in your systems consisting of battery packs connected to a single printed circuit board with a single output cable would be considered a battery assembly.

We have paraphrased and answered your questions as follows:

- Q1. Are the battery assemblies subject to testing if the lithium ion battery packs contained within the assemblies have successfully passed the tests prescribed in section 38.3 of the UN MTC?
- A1. The answer is yes. Section 173.185(a) states that each lithium cell or battery must be of the type proven to meet the criteria in part III, sub-section 38.3 of the UN MTC. Battery assemblies, which have a Watt-hour (Wh) rating of not more than 6,200 Wh, must be tested in accordance with UN MTC 38.3.3(f). Although the lithium ion battery packs have passed all applicable tests, if they are electrically connected to form a battery assembly, then the battery assembly must be tested in accordance with UN MTC 38.3.3(f).

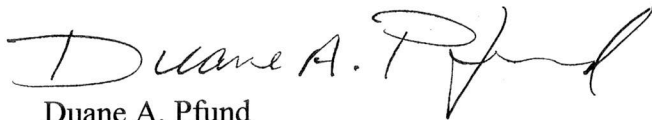
When lithium batteries, battery packs, or battery assemblies that have successfully passed the UN MTC 38.3 tests are installed in equipment, the equipment is not subject to additional testing.

Q2. When transported separate from the equipment, should the battery assembly be classified as "UN3480, Lithium ion batteries" or "UN3481, Lithium ion batteries contained in equipment"?

A2. Lithium ion batteries not contained in or packed with the equipment for which they will provide electrical power must be transported as "UN3480, Lithium ion batteries" (see § 173.185). In this scenario, the battery assembly powers the memory card. Thus, battery assemblies attached only to a printed circuit board, but not to a memory card, would be classified as "UN3480, Lithium ion batteries."

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Duane A. Pfund". The signature is fluid and cursive, with a large initial "D" and a stylized "P".

Duane A. Pfund
International Standards Coordinator
Standards and Rulemaking Division