



U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

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

OCT 13 2010

Mr. Rich Byczek
Site Manager
Intertek
13200 Levan Road
Livonia, MI 48150

Ref. No.: 10-0173

Dear Mr. Byczek:

This is in response to your August 17, 2010, email requesting clarification of requirements in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to design-type testing of lithium ion batteries. In your email, you describe a lithium ion battery module comprised of electrically connected cells that serves as a component of a larger lithium battery pack. You state this lithium ion battery module is transported between manufacturing facilities and thus is subject to testing in accordance with the United Nations (UN) Manual of Tests and Criteria. In your email, you note this module is equipped with a protective insulator that prevents external access to the battery terminals. You ask if you must remove the protective insulator to conduct the appropriate tests or note that the terminals are inaccessible.

The specific requirements you address are contained in Section 38.3 of the UN Manual of Tests and Criteria and are implemented through the provisions of § 173.185 of the HMR. Prior to transportation in commerce, the lithium ion battery module must successfully pass all of the applicable tests in Section 38.3 of the UN Manual of Tests and Criteria, including the T.5 (short circuit test) and the T.7 (overcharge test). The lithium battery module must be subjected to all of the appropriate design type tests in the same configuration as when it will be installed in the larger battery pack. In this case if a physical barrier such as a cover must be removed prior to installation in the larger battery pack, it must be removed for design type testing.

I hope this information is helpful. If you have further questions, please contact this office.

Sincerely,

A handwritten signature in black ink that reads "Ben Supko".

Ben Supko
Acting Chief, Standards Development
Office of Hazardous Materials Standards

Drakeford, Carolyn (PHMSA)

Leary
\$173.785
Lithium Batteries
10-0173

From: Betts, Charles (PHMSA)
Sent: Tuesday, August 17, 2010 9:53 AM
To: Drakeford, Carolyn (PHMSA)
Subject: FW: Interpretation requested regarding test applicability for Lithium -Ion Batteries
Attachments: SN200241.jpg

From: Rich Byczek Intertek [mailto:rich.byczek@intertek.com]
Sent: Tuesday, August 17, 2010 9:46 AM
To: Betts, Charles (PHMSA)
Cc: Dawoomi Hong; Tom O'Hara Intertek; Fadi Alawi Intertek
Subject: Interpretation requested regarding test applicability for Lithium -Ion Batteries

Charles,

My name is Rich Byczek, and I am the site manager for Intertek's Safety and Performance lab in Detroit Michigan.

I am writing you on behalf of our client, who had some questions related the UN Manual of Tests and Criteria, applicability of tests.

Specifically, this client has a battery (rack of cells), which utilizes a protective insulator to prevent external access to the battery terminals (photo attached).

It should be noted that this is an interim module-level part, the cells are electrically connected internal to the module, that is later connected as part of a full battery pack.

This level does undergo transport between manufacturing facilities.

As a test lab performing the testing, how should we treat this sample for the short circuit (T5) and overcharge (T7) tests. As the terminals are physically blocked, do I just note that the terminals are inaccessible, preventing an external short circuit or overcharge condition? Or, do I remove/bypass the protective cover to gain access to the terminals.

Per client review, this feature is specifically added to prevent a short circuit or inadvertent voltage applied to the terminals. Therefore they consider it to be a protective device. The concern is validity of removing this device to perform the test, as this would be similar to bypassing a diode, fuse or other protective device.

I can be contacted via email or Mobile phone. My contact information is listed below.

Also, if there is a different contact I should use, please let me know.

Thank you,

Rich Byczek
Site Manager
Phone: 734-591-9161

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