



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

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

NOV 05 2013

Mr. Chris Aragon
Coda Energy
135 E. Maple Ave. Unit C
Monrovia, CA 91016

Ref No.: 13-0184

Dear Mr. Aragon:

This is a response to your September 6, 2013 email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) with regard to the testing of lithium ion batteries. Specifically, you seek confirmation that a new design type of lithium ion battery you manufacture does not require a new test in accordance with the UN Manual of Tests and Criteria due to the minimal changes in design from a previously tested battery. In your letter, you provide the test report for your previously tested design type as well as material safety data sheets for both your previous design type and new design type of lithium ion battery.

In accordance with § 173.185(a)(1), each lithium cell or battery must be of a type proven to meet the requirements of each applicable test of the UN Manual of Tests and Criteria found in Section 38.3. As stated in Section 38.3.2.1 of the UN Manual of Tests and Criteria, cells and batteries, which differ from a tested type, are required to be retested if, for rechargeable cells and batteries there is a change in Watt-hours of more than 20% or an increase in voltage of more than 20%; or there is a change that would materially affect the test results.

Based on the documentation you provide, the new design type battery has no changes in protective devices, hardware, and software, safety design in the cells or batteries or venting valve. The size of the device remains the same, as does the number of component cells and the connecting mode and configuration of those cells. Based on the data you supplied the new design type of lithium ion battery exhibits an increase in voltage of approximately 14% and an increase in Watt-hours of 25%. Since the increase in Watt-hours is over 20% new testing in accordance with Section 38.3.2.1 of the UN Manual of Tests and Criteria would be required.

I hope this information is helpful. If you have any more questions, please do not hesitate to contact this office.

Sincerely,

Robert Benedict
Chief, Standards Development
Standards and Rulemaking Division



Suchak
3173.185
Batteries
13-0184

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Request for a formal interpretation on newer model Lithium Ion Battery

Reasons, why we believe the new type Lishen LP2770120AC(16.5Ah) (earlier model LP27701AB(15Ah) does not require a new test in reference to UN38.3.2.2 of the UN Manual of Tests and Criteria Fifth revised edition is as follows. There is minimal change in Cathode size, Anode size, material remains the same as referenced 38.3.2.2 (a). Very little change in electrolyte as well. The increase of 9% in primary cell Amp hours doesn't equate to the provisions in reference 38.3.2.2 (b). The nominal voltage has minimal change, only an increase of 0.45V Volts. Lithium content has a minimal change as well, which is well within limit of UN 38.3.2.2 (a).

There are no changes in Protective Devices, hardware or software. There are no changes in safety design in cells/batteries, venting valve. Mechanical size remains the same. No change in number of component cells. Finally, there is no change in connecting mode or configuration of cells. Also, the model core number remains the same, LP2770120.

The question is can this be shipped normally, may we continue using our Mobile Power Solutions report which is the UN Battery Transportation Testing Test report C5-726, and not be required to do additional UN testing?

I have included supporting documentation to further explain the reasons.

- Mobile Power Solutions Test Report C5-726
- Certificate of Compliance LP27701AB(15Ah)
- Certificate of Compliance LP27701AC(16.5Ah)
- Lishen_Lilon_MSDS_P2770120AB (earlier battery cell)
- Lishen_Lilon_MSDS_P2770120AC (new battery cell)
- Product Detail LP27701AB(15Ah)
- Product Detail LP27701AC(16.5Ah)
- UN38.3 Lishen Cell Comparison Chart
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Please contact me if you have any questions.

Thank you very much,

Chris Aragon
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(323) 742-2114