



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

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

OCT 21 2015

Mr. Richard Weinberger
Lab Department Engineer
Rayovac Corporation
Portage, WI 53901

Reference No. 15-0100

Dear Mr. Weinberger:

This is in response to your May 26, 2015 email and subsequent telephone conversation with a member of my staff requesting clarification of the requirements for shipping dented or damaged lithium metal batteries in accordance with the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). In your email you state that damaged or dented lithium metal batteries are collected in a 30-gallon drum and filled with mineral oil. After reviewing the regulations in § 173.185 for damaged, defective, or recalled batteries you ask if the regulations for damaged and defective batteries are in addition to the regulations for lithium batteries shipped for disposal and whether the method described in your letter is compliant with the HMR.

The regulations for shipping damaged, defective, or recalled batteries are separate from the regulations for lithium batteries shipped for disposal or recycling. The regulations in § 178.185(d) and (f) are intended to address specific cases as identified in the introductory text to those paragraphs.

The method described in your letter is partially compliant with the requirements for offering lithium cells or batteries for disposal or recycling as described in § 173.185(d). The use of mineral oil effectively prevents movement of the cells or batteries in the package and prevents short circuiting between batteries in the package. Lithium cells and batteries shipped for disposal or recycling are excepted from the design testing and record keeping requirements of § 173.185(a) and the UN specification packaging requirements of § 173.185(b)(3)(ii). However, in accordance with § 173.185(b)(3)(i), the cells and batteries must be placed in non-metallic inner packages that completely enclose the cells or batteries and separate the cells or batteries from contact with equipment, other devices, or conductive material in the packaging. Based on the information provided in your letter it does not appear that the packing method described in your letter addresses the requirement to place the cells in non-metallic inner packages that completely surround the cells or batteries.

The method described in your letter is not compliant with the requirements for offering damaged lithium cells and batteries as described in § 173.185(f). The regulations for the shipment of damaged lithium cells and batteries found in § 173.185(f) apply to cells and batteries that have been damaged, or identified by the manufacturer as being defective for

safety reasons, that have the potential for producing a dangerous evolution of heat, fire or short circuit. Such cells and batteries must be placed in individual, non-metallic inner packaging that completely encloses the cell or battery. The inner packaging must be surrounded by cushioning material that is non-combustible, non-conductive, and absorbent. Finally, each inner package must be individually placed into one of the specific outer packagings identified in § 173.185(f).

You may apply to PHMSA for permission to use an alternate means to package damaged lithium cells and batteries under the terms of a special permit. To apply, you must submit an application to the Associate Administrator for Hazardous Materials Safety that conforms to the requirements prescribed in 49 CFR Part 107, Subpart B. In your application, you must provide justification that the method you are considering achieves a level of safety that is equal to or greater than that required under the HMR. You may obtain information on the special permit and approvals applications process from our website at <http://www.phmsa.dot.gov/hazmat/regs/sp-a>, or by calling PHMSA's Approvals and Permits Division at (202) 366-4511.

I trust this information is helpful. If you have further questions, please do not hesitate to contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ben Supko', with a long horizontal flourish extending to the right.

Ben Supko
Senior Regulations Officer
Standards and Rulemaking Division

Leary
173.185(F)
Lithium Batteries
15-0100

Goodall, Shante CTR (PHMSA)

From: Kelley, Shane (PHMSA)
Sent: Tuesday, May 26, 2015 4:55 PM
To: Goodall, Shante CTR (PHMSA); Dodd, Alice (PHMSA)
Subject: FW: Lithium Metal Cell Shipping Regulations

Hi Shante and Alice,

Can we log in this request for an interp from Mr. Weinberger please? We'd like it assigned to PHH-13. Thank you

From: Leary, Kevin (PHMSA)
Sent: Tuesday, May 26, 2015 1:55 PM
To: Kelley, Shane (PHMSA)
Cc: Pfund, Duane (PHMSA)
Subject: FW: Lithium Metal Cell Shipping Regulations

Another question on "damaged" batteries. There is a growing need to clarify our position on how the damaged/defective batteries provisions should be implemented. The presence of requirements for damaged batteries continues to lead people in the direction that any damage is damage that have the potential to produce dangerous heat, fire or short circuit. The attached letter in question and answer 3) touches on the idea that "damage" requiring treatment under the provisions of § 173.185(f) is linked to the likelihood that the damage will produce dangerous heat fire or short circuit in transit.

I recommend assigning this letter for a written response so that we can properly coordinate.

Kevin

From: Weinberger, Richard [<mailto:richard.weinberger@spectrumbrands.com>]
Sent: Tuesday, May 26, 2015 12:56 PM
To: Leary, Kevin (PHMSA)
Subject: Lithium Metal Cell Shipping Regulations

Hello Kevin,

My name is Rick Weinberger and I handle the environmental system for Rayovac in Portage, WI. I was hoping to get clarification on the new Lithium DOT regulations. At our facility, any dented or damaged lithium metal batteries had been collected in a 30 gallon steel drum filled with oil. After looking at the new DOT regulations of damaged lithium cells, our disposal company raised concerns with this method.

Would this still be a viable option for our facility or are we now required to individually package each lithium cell in a vacuum packed bag with something like Argon? Are the rules for "lithium cells shipped for disposal" in addition to the regulations for "damaged, defective, or recalled batteries"?

This would obviously be problematic for our facility as we produce hundreds of thousands of damaged or tested cells each year. If you could get back to me at your earliest convenience I would greatly appreciate it.

Thank you,

Rick Weinberger
Lab Department Engineer

Regulations in question:

- (f) *Damaged, defective, or recalled cells or batteries.*
- Lithium cells or batteries, that have been damaged or identified by the manufacturer as being defective for safety reasons, that have the potential of producing a dangerous evolution of heat, fire, or short circuit (e.g. those being returned to the manufacturer for safety reasons) may be transported by highway, rail or vessel only, and must be packaged as follows:
 - Each cell or battery must be placed in individual, non-metallic inner packaging that completely encloses the cell or battery;
 - The inner packaging must be surrounded by cushioning material that is non-combustible, non-conductive, and absorbent; and
 - Each inner packaging must be individually placed in one of the following packagings meeting the requirements of part 178, subparts L and M, of this subchapter at the Packing Group I level:
 - Metal (4A, 4B, 4N), wooden (4C1, 4C2, 4D, 4F), or solid plastic (4H2) box;
 - Metal (1A2, 1B2, 1N2), plywood (1D), or plastic (1H2) drum; and
- The outer package must be marked with an indication that the package contains a "Damaged/defective lithium ion battery" and/or "Damaged/defective lithium metal battery" as appropriate.
- (d) *Lithium cells or batteries shipped for disposal or recycling.*
- A lithium cell or battery, including a lithium cell or battery contained in equipment, that is transported by motor vehicle to a permitted storage facility or disposal site, or for purposes of recycling, is **excepted** from the testing and recordkeeping requirements of paragraph (a) and the specification packaging requirements of paragraph (b)(3) of this section, when packed in a strong outer packaging conforming to the requirements of §§ 173.24 and 173.24a. A lithium cell or battery that meets the size, packaging, and hazard communication conditions in paragraph (c)(1)-(3) of this section is excepted from subparts C through H of part 172 of this subchapter.

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