



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

1200 New Jersey Avenue, SE
Washington, DC 20590

JAN - 7 2010

Mr. Timothy J. Lanfond
Chair, Environmental Committee
Battery Council International
Wiley Rein LLP
1776 K Street NW
Washington, DC 20006

Ref. No. 09-0227

Dear Mr. Lanfond:

This is in response to your October 6, 2009 letter requesting clarification on the applicability of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to the transportation of damaged electric storage batteries shipped for recycling by motor vehicle.

According to your letter, the standard practice for handling damaged electric storage batteries entails placing each damaged battery into an individual heavyweight polyethylene bag closed with an adjustable plastic tie. The battery is then securely placed onto a pallet with intact electric storage batteries. Each pallet may contain between 50 and 70 batteries. The pallet of batteries is then secured with stretch wrap and offered for transportation under the provisions in § 173.159(e).

In a previous letter to Mr. Paul Ackerman dated April 20, 2006, this office stated that a damaged electric storage battery is not eligible for the exceptions in § 173.159(e) if the damage has rendered it incapable of retaining battery fluid inside the outer casing during transportation. Following are three acceptable methods to transport damaged batteries that have the potential for leakage:

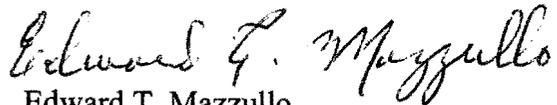
1. Drain the battery of fluid to eliminate the potential for leakage during transportation;
2. Repair and/or package the battery in such a manner that leakage is not likely to occur under conditions normally incident to transportation; or
3. Transport the damaged or leaking battery in accordance with § 173.3(c).

In your letter, you suggest that when an electric storage battery is damaged to the extent that it cannot retain the battery fluid, the fluid typically drains from the battery before transportation in commerce begins. However, you note that some residual fluid may remain in the battery. Provided the damaged battery is not visibly leaking when offered for

transportation in commerce and fluid is not likely to leak from the battery during normal conditions of transport, the use of a securely closed heavyweight polyethylene bag as described in your letter is an acceptable means to protect against leakage of battery fluid. Note that batteries packaged in this manner must still be properly handled and secured on the vehicle in order to prevent the release of fluid from the battery itself.

I hope this information is helpful, please contact us if you require additional assistance.

Sincerely,

A handwritten signature in cursive script that reads "Edward T. Mazzullo". The signature is written in black ink and is positioned above the printed name.

Edward T. Mazzullo
Director, Office of Hazardous
Materials Standards

**Battery Council
International**



Leary
§ 171.3
§ 173.159
Batteries
09-0227

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October 6, 2009

Mr. Edward Mazzullo
Office of Hazardous Materials
Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
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Washington, DC 20590

Re: Packaging Procedures for Damaged Lead Acid Batteries

Dear Mr. Mazzullo:

I am writing to follow-up on our August 5, 2009 meeting at your office regarding the use of poly bags to ensure the safe transport of damaged lead acid batteries being shipped for recycling by motor vehicle.

The Battery Council International (BCI) is a trade association that represents virtually all of the nation's lead acid battery manufacturers and the overwhelming majority of used battery recyclers. With this letter we request your confirmation that the practices described below are appropriate.

On April 2, 2006, you wrote to Mr. Paul Ackerman (Ref. No. 06-0062) regarding the proper packaging of damaged batteries pursuant to the exception provided in 49 CFR 173.159(e). You recognized three appropriate mechanisms for shipping damaged batteries that have the potential for leakage:

- 1) the battery has been drained of battery fluid;
- 2) the battery has been repaired and/or packaged in such a way that leakage of battery fluid is not likely to occur under conditions normally incident to transportation; or
- 3) the damaged or leaking battery is transported under the provisions set out in 49 CFR 173.3(c).

The lead battery recycling industry recycles more than 110 million such batteries annually. Most of these are collected from "big box" retailers and similar large volume collectors. The industry historically has followed the approaches understood to be consistent with your above-quoted interpretation, and has never had a problem with damaged batteries. To the contrary, BCI has polled its members who supply and collect for recycling the vast majority of lead acid batteries and found the following:

- One company, which ships and/or transports about 43,000 truckloads of used batteries a year, reviewed its files (including reports filed via Chemtrec) for the last two years. It found 10 incidents involving leaking batteries, none of which related to batteries contained in poly bags. All 10 involved minor accidents or stress due to pallet-packaging errors (which since have been corrected).
- Another company, which ships and/or transports about 59,000 truckloads of used batteries a year, and typically does not use poly bags, had no citations for leakage. It reports that it only sees acid leakage onto truck floors rarely, when a pallet has not been securely stretch-wrapped and batteries fall off the pallet.
- A third company, which arranges for the shipment of 5 million used batteries (about 4,500 truckloads) a year, and uses poly bags when the batteries appear damaged, has not had any reports of leaking from them. It reports only seeing occasional reports of leakage from transported batteries, and then only when loads have been damaged as a result of an accident.

During our meeting on August 5th, we discussed whether it is appropriate for large scale collectors to ship by motor vehicle damaged batteries from which acid leakage previously has occurred, where those batteries have been placed into strong poly bags that are properly closed with an adjustable plastic tie and secured, placed with intact used batteries on pallets and then stretch wrapped. The industry believes such handling is fully consistent with the second clause set forth in your April 2nd letter to Mr. Ackerman. We thus now seek confirmation of this fact.

In the circumstances of concern, the battery casing may no longer be completely intact (as would be the case, for example, with a new battery). When the unit's casing was damaged, liquid acid contained in the battery would have drained out. This typically has occurred long before the batteries were received at a retailer or other large volume collector for recycling, although occasionally damage and leakage occur at the collector's location. As noted above, a historic practice often has been to put these damaged batteries with no visibly leaking electrolyte into poly bags that are properly closed with an adjustable plastic tie, securely place those bagged batteries onto pallets with undamaged used batteries, and stretch wrap the entire pallet. This is documented on the attachment.

The reason the industry believes it appropriate to address the possibility that there may be some residual acid in a previously-damaged battery is this: Lead acid batteries contain not only free liquid (*i.e.*, acid), but also elements that, in normal use, absorb acid. A small quantity of free liquid also may remain in a damaged battery, even though most of its content has previously drained. Bagging of the damaged batteries with no visibly leaking electrolyte protects against further release of these residual amounts. The resulting liquids constitute only a minimal amount of the battery's prior content. The bags are not used to ship quantities of acid otherwise removed from the batteries.

Mr. Edward Mazzullo
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We would appreciate your confirmation that the practices documented in the attachment are appropriate in the circumstances described, and fully comply with DOT's hazardous materials regulations applicable to transportation of used lead acid batteries by motor vehicle.

Thank you.

Sincerely,

A handwritten signature in black ink, reading "Timothy J. Lafond". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Timothy J. Lafond
Chair, BCI Environment Committee

cc: Committee Members
David B. Weinberg, Wiley Rein LLP
George Kerchner, Wiley Rein LLP

Recommended Industry Practices for Palletizing Junk Batteries

Procedures

- Step 1) The Department of Transportation (DOT) specifies that junk batteries are to be stacked on pallets in good condition. A piece of cardboard must be placed on an empty pallet before stacking first layer of junks. **Do not use CHEP pallets for junk battery returns.**
- Step 2) A piece of cardboard must be placed between each layer and on top. Batteries should not be stacked more than 3 layers high. Each pallet may contain 50-70 junk batteries total.
- Step 3) Arrange batteries so that terminals do not touch that could lead to a short circuit
- Step 4) Load batteries 2 layers high, then shrink wrap. Wrap tightly 3 or 4 times around, making sure to catch top of pallet to help anchor load.
- Step 5) Load third layer and place honeycomb cardboard on top. Shrink wrap entire load. Wrap tightly 3 or 4 times around overlapping bottom layers.

NOTE: Full wheel weight buckets and damaged batteries should be stacked on the top layer of the junk pallet in the middle.

NOTE: Damaged batteries that are not visibly leaking electrolyte should be placed in strong poly bags and properly closed with an adjustable plastic tie. Batteries also should be properly secured.

DO NOT STACK PALLETS OF BATTERIES ON TOP OF EACH OTHER

Store's Responsibilities

- Return your junk batteries and wheel weights to your battery vendor (do not sell them locally)
- Strip labels off or spray paint the warranty returns and junks to prevent theft
- Junk batteries should be palletized and ready for pick-up prior to the arrival of the truck
- During inventory battery deliveries must still be signed for
- Place DNI (Do Not Inventory) tag on top of battery pallets
- Junk battery pallets should be moved to the same location batteries are delivered to