



U.S. Department  
of Transportation

**Pipeline and  
Hazardous Materials Safety  
Administration**

400 Seventh Street, S.W.  
Washington, D.C. 20590

JUN 28 2007

Mr. Leonard M. Navarro  
Chief Deputy Director  
Natural History Museum  
Of Los Angeles County  
900 Exhibition Boulevard  
Los Angeles, California 90007

Ref. No.: 07-0076

Dear Mr. Navarro:

This responds to your letter dated March 28, 2007, regarding the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) as they apply to the transportation of fluid preserved museum research specimens. Specifically, you ask if those invertebrate stored and shipped in 70% ethanol solution, a standard practice in natural history museum collections worldwide, are subject to the HMR.

The Vertebrate and Invertebrate sections within the Research and Collections Division at the Natural History Museum of Los Angeles County (LACM) maintain a collection of over 30 million specimens of mammals, birds, amphibians and reptiles, fishes, insects, and other invertebrates. Many of your specimens are "dry" (skeletons, empty shells, pinned insects, etc.); however, a significant number are fluid preserved (70% ethanol solution).

The museum's current shipping procedures involve the following procedures. The large specimens are removed from storage containers and wrapped in paper towels and/or cheesecloth moistened with ethanol to prevent desiccation during transit. The wrapped specimens are sealed in 4 mil plastic bags (two layers) with a heat sealer, and then sealed inside a third plastic bag with an appropriate amount of absorbent material. The small specimens in shell vials containing less than 30 ml of ethanol are sealed in the same manner as the large specimens (i.e., two layers of plastic in a third plastic bag with absorbent material). For ease of packing, multiple vials may be individually sealed but packed together in the same bagging procedure. After sealing in the two plastic bags, there is little or no visible free flowing liquid. Sealed containers are then packed into a cardboard box with a plastic liner filled with Styrofoam packing (peanuts).

A material described as "Ethanol solutions, UN 1170" is classed as a Class 3 (flammable liquid) and is subject to the HMR for purposes of transportation in commerce. Although,



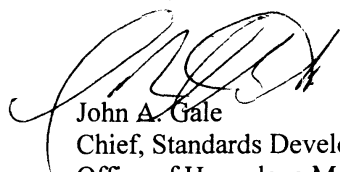
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172-101 F  
173.120 (d)

the paper towel and/or cheesecloth-wrapped specimens are moistened with ethanol to protect specimens from damage, it is the opinion of this Office that the packaging procedures and methods you use for shipment of the fluid preserved dry specimens to prevent desiccation mitigates the minimal hazard that may be present during transportation. Therefore, in accordance with §173.120(d), shipments of invertebrate preserved in ethanol for research and collection purposes are not subject to regulation under the HMR.

I hope this satisfies your inquiry. If we can be of further assistance, please contact us.

Sincerely,

A handwritten signature in black ink, appearing to read 'John A. Gale', with a large, stylized flourish extending from the end of the signature.

John A. Gale  
Chief, Standards Development  
Office of Hazardous Materials Standards

# Natural History

of Los Angeles County

900 Exposition Boulevard • Los Angeles, CA 90007

March 28, 2007

Mr. Edward T. Mazzullo  
Director, Office of Hazardous Materials Standards  
United States Department of Transportation/RSPS (DHA-10)  
400 7<sup>th</sup> St. SW Rm.8422  
Washington D.C. 20590-0001

Dear Mr. Mazzullo:

We are writing to obtain a letter of interpretation concerning the shipment of fluid preserved museum research specimens. By providing you with technical information and an outline of our current shipping procedures, you can determine whether we are subject to the requirements of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180).

The Vertebrate and Invertebrate sections within the Research and Collections Division at the Natural History Museum of Los Angeles County (LACM) maintain a collection of over 30 million specimens of mammals, birds, amphibians and reptiles, fishes, insects and other invertebrates. This ranks the LACM collections as among the largest in the world. Many of our specimens are "dry" (skeletons, empty shells, pinned insects, etc.); however, a significant number are stored in a 70% ethanol solution ("fluid-preserved" specimens), a standard practice in natural history museum collections worldwide.

Museum collections exist, in part, to offer the scientific community an opportunity to study specimens collected decades (or even centuries) ago, to answer questions about biodiversity, ecology, genetics, evolution, and virtually every aspect of natural history. These collections are not unlike a library; although instead of books, we have beetles, snails, fishes, and lizards. Just as a library loans out its books, we loan our specimens to researchers worldwide. This process involves great care and effort to ensure our specimens are not damaged in transit (each specimen is unique and irreplaceable), but with careful packing procedures damage can be avoided. My question relates to the applicability of the HMR to our shipping procedures, specifically those utilized for fluid-preserved specimens.

Current shipping procedures involve the following process. For large specimens, the animal is removed from its storage container and wrapped in paper towels and/or cheesecloth moistened with ethanol to prevent desiccation during transit. Wrapped specimens are then sealed in 4 mil plastic bags (two layers) with a heat sealer, and then sealed inside a third plastic bag with an appropriate amount of absorbent material. Small specimens in shell vials containing less than 30 ml of ethanol are sealed in the same manner as large specimens (i.e., two layers of plastic in a third plastic bag with absorbent material). For ease of packing, multiple small vials may be individually sealed but packed together in the same bagging procedure. Note that after sealing in the two plastic layers there is little or no visible liquid in the bags. Sealed containers are then packed into a sturdy cardboard box that has a plastic liner filled with styrofoam packing "peanuts."

"...to inspire wonder, discovery and responsibility  
for our natural and cultural worlds."

Engrum  
\$173.120(d)  
\$172.101 F  
Applicability  
07-0076

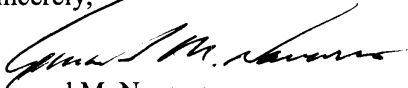
Mr. Edward T. Mazzullo  
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Packing is of the utmost importance to us because specimens can sustain significant, permanent damage if allowed to dry out. Thus, we take great care to ensure their safety during transit.

Based on our current shipping procedures as described above, is LACM subject to the requirements of the HMR if we need to ship fluid-preserved specimens from our collection? If further information is required in order to make this determination, please feel free to contact me at (213) 763-3545.

Thank you very much for your time and I look forward to your response.

Sincerely,



Leonard M. Navarro  
Deputy Director, Administration & Operations  
Natural History Museum of Los Angeles County

lmn:gc

c: Jural J. Garrett, Chief Deputy Director  
Margaret Hardin, Acting Deputy Director, R&C