



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

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

OCT 26 2010

Mr. Douglas E. Lunstra  
Manager, Safety Audit and Compliance  
MidAmerican Energy Holdings Company  
1200 South Blauvelt Avenue  
Sioux Falls, SD 57105

Reference No. 10-0055

Dear Mr. Lunstra:

This is in response to your e-mail to the Pipeline and Hazardous Material Safety Administration's (PHMSA's) Hazardous Materials Information Center requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to packaging. Specifically, you state your company wants to transport "UN 3336, Mercaptan mixture, liquid, flammable, n.o.s., 3 (flammable liquid), Packing Group (PG) II" in tightly sealed DOT Specification 4BW 240 cylinders. You state the product has a strong odor and your company would like to use these cylinders with a 450 L (119 gallon) capacity to transport this product in accordance with the HMR.

You state vendors of these cylinders have informed you their standard cylinder in this size has a water capacity of 1,000 pounds. You state that you have always considered this equal to 119 gallons in volume, but have learned the cylinder's liquid capacity is 119.8 gallons. We have paraphrased your questions and answered them in the order you provided. We apologize for the delay in responding and any inconvenience this may have caused.

Q1. Is a 1,000 pound water capacity cylinder that is considered a non-bulk packaging for Division 2.1 (flammable) gases, such as "UN 1075, Petroleum gases, liquefied," a bulk packaging when used to transport Class 3 (flammable) liquids?

A1. No. Any cylinder with a water capacity of 454 kg (1,000 pounds) or less as a receptacle for a gas as defined in § 173.115 is a non-bulk packaging under the HMR (see § 171.8). A cylinder is considered a bulk or non-bulk packaging based on the capacity of the cylinder, not the weight or volume of hazardous material contained in the cylinder.

Q2. If a 1,000 pound water capacity cylinder is considered a bulk packaging for flammable liquids, is this cylinder no longer acceptable as a packaging for PG II flammable liquids since cylinders are not authorized under § 173.242 in Column (8C) of the Hazardous Materials Table (§ 172.101 Table) as a bulk packaging for these liquids?

A2. In 2005 (70 FR 34066), PHMSA revised the HMR to set forth both non-bulk and bulk cylinder packaging authorizations in the packaging sections prescribed for a hazardous material in Column (8B) of the § 172.101 Table, with certain exceptions (see § 172.101(i)(5)). For “UN 3336, Mercaptan mixture, liquid, flammable, n.o.s., 3, PG II,” this packaging section is § 173.202. Therefore, as prescribed in § 172.101(i)(5), § 173.202(c) authorizes the use of non-bulk and bulk DOT specification cylinders, with the exception of DOT Specification 8 and 3HT cylinders, as a packaging for this mercaptan mixture provided it is prepared and transported in accordance with all applicable requirements of the HMR.

Q3. Does the language in § 173.202 that authorizes DOT specification cylinders prescribed in the HMR for a compressed gas, other than DOT Specification 8 and 3HT cylinders, allow a 1,000 pound water capacity cylinder to be used as a packaging for PG II flammable liquid?

A3. Yes. See Answer A2.

I hope this satisfies your request.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Glenn Foster", with a long horizontal flourish extending to the right.

T. Glenn Foster  
Chief, Regulatory Review and Reinvention  
Office of Hazardous Materials Standards

## Drakeford, Carolyn (PHMSA)

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**From:** Supko, Ben (PHMSA)  
**Sent:** Monday, March 08, 2010 10:10 AM  
**To:** Drakeford, Carolyn (PHMSA)  
**Subject:** FW: Bulk vs. Non-Bulk Packaging

Edmonson  
§171.8  
§173.115  
§173.202  
§173.242  
Packaging  
10-0055

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**From:** Lunstra, Douglas E  
**Sent:** Thursday, November 19, 2009 8:22 AM  
**To:** 'infocntr@dot.gov'  
**Subject:** Bulk vs. Non-Bulk Packaging

Please provide guidance on the proper packaging application for hazardous materials. We transport Mercaptan mixture, liquid, flammable, n.o.s., Hazard Class 3, UN3336, PGII, and want to standardize on the appropriate non-bulk packaging. The material is used as natural gas odorant and is very odoriferous. We plan to use cylinders to transport this product as it needs to be sealed tightly to avoid escaping odors and the potential nuisance of erroneous reports of natural gas leaks that escaping odors would create.

The general requirements for packaging for liquid hazardous materials in packing group II at 49CFR 173.202 allows the use of "Cylinders, specification, as prescribed for any compressed gas, except for Specifications 8 and 3HT" for non-bulk packaging. We are in the process of acquiring cylinders and had specified "DOT 4BW 240" with a 119 gallon capacity. Vendors advised us that their standard cylinder in this size is 1,000 pounds water capacity.

§171.8 provides definitions for bulk and non-bulk packaging:

**Bulk packaging** means a packaging, ... which has:

- (1) A maximum capacity greater than 450 L (119 gallons) as a receptacle for a liquid;
- (2) ... ; or
- (3) A water capacity greater than 454 kg (1000 pounds) as a receptacle for a gas as defined in §173.115 of this subchapter.

**Non-bulk packaging** means a packaging which has:

- (1) A maximum capacity of 450 L (119 gallons) or less as a receptacle for a liquid;
- (2) ... ; or
- (3) A water capacity of 454 kg (1000 pounds) or less as a receptacle for a gas as defined in §173.115 of this subchapter.

We had always considered the 119 gallon and the 1,000 pound water capacity to be the same volume; however, the 1,000 pound water capacity cylinder has a liquid capacity of approximately 119.8 gallons.

Questions:

1. Does this 1,000 pound water capacity cylinder that would be non-bulk packaging for Hazardous Class 2.1 material such as propane (Petroleum gases, liquefied) constitute a bulk packaging when used for a flammable liquid, Hazard Class 3?
2. If it is considered a bulk packaging, is this cylinder no longer acceptable, as cylinders are not included as authorized for bulk packagings in §173.242?