



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

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

NOV 14 2007

Mr. Fred A. Nachman
Thunderbird Cylinder, Inc.
4209 E. University Drive
Phoenix, AZ 85034-7315

Ref. No.: 06-0276

Dear Mr. Nachman:

This is in response to your request for a clarification of the cylinder requalification requirements in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Your questions are paraphrased and answered as follows:

- Q1. Is a leakproofness test required under § 180.209(g)? If yes, how is the test performed?
- A1. Yes. Section 180.209(g) specifies that the external visual inspection must be performed on the named cylinders in accordance with either Compressed Gas Association (CGA) C-6 or CGA-6.3, as applicable. CGA C-6 requires the use of soap or other suitable solution to check for leaks. CGA C-6.3 is silent concerning how to detect leaks. Based on the provisions in CGA C-6, a gas sniffer may be used in addition to coating the cylinder with soap or other solution, but not in place of these methods.
- Q2. Under the non-bulk packaging reuse requirements in § 173.28, paragraph (b)(2)(i) requires packagings subject to the leakproofness test in § 178.604 to be retested without failure. Does this provision apply to cylinders?
- A2. No. Section 178.600 specifies that the testing requirements in Part 178, Subpart M (§§ 178.600 through 178.609) apply to the performance-oriented packagings identified in Part 178, Subpart L. Cylinder requirements are specified in Part 178, Subpart C and, therefore, are not subject to the leakproofness testing requirements in § 178.604.
- Q3. Do the HMR require all DOT specification cylinders to be marked with a tare weight?
- A3. No. Unless otherwise specified in the HMR, DOT specification cylinders are not required to be marked with the tare weight.
- Q4. When should the cylinder requalifier verify the tare weight on a DOT specification cylinder?

A4. Currently, the HMR require verification of the tare of DOT 4-series and 8-series cylinders, under certain conditions. See § 180.209(c) and (i) respectively.

I hope 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 "Hattie L. Mitchell", written over a large, loopy flourish.

Hattie L. Mitchell
Chief, Regulatory Review and Reinvention
Office of Hazardous Materials, Standards

Datterthwate
 § 173.28 (b)(2)(i)
 § 180.209 (g)
 Testing
 06-0276

Drakeford, Carolyn <PHMSA>

From: Mitchell, Hattie <PHMSA>
Sent: Friday, December 08, 2006 7:43 AM
To: fredn@cylinder.com
Cc: Posten, Ryan <PHMSA>; Hilts, Donald <PHMSA>; Drakeford, Carolyn <PHMSA>
Subject: RE: DOT Clarification Tare Wt_Leakproofness 12806.doc

Thanks, Fred. We will get a written response to you.

Hattie L. Mitchell
 Chief, Regulatory Review and Reinvention
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From: Fred A. Nachman [mailto:fredn@cylinder.com]
Sent: Thursday, December 07, 2006 11:28 AM
To: Mitchell, Hattie <PHMSA>; Hilts, Donald <PHMSA>
Cc: Posten, Ryan <PHMSA>
Subject: DOT Clarification Tare Wt_Leakproofness 12806.doc

Thunderbird Cylinder, Inc.

December 8, 2006

Mr. Don Hilts
 Ms. Hattie Mitchell
 PHMSA, Department of Transportation
 Room 8100 Div. 41.3
 400 7th Street S. W.
 Washington, D. C. 20509

Dear Don and Hattie,

Request for Clarification No. 1- Leakproofness test:

Is a leakproofness test required by **49CFR180.209(g)** *Visual inspections* of low pressure cylinders who's *Records must include...conditions checked (e.g., leakage...)?*

Since it has been verbally interpreted by DOT to be required, how is it to be performed? DOT references **CGA C6-2001 4.2.4 Leaks** which states...*To check for leaks the cylinder shall be charged and carefully examined... Any leakage is cause for rejection.* While it refers to coating with soap or other suitable solutions, is a

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hydrocarbon sniffer acceptable for leakage verification of propane or propylene cylinders if pressurized with their respective gases? If so, is it sufficient to pressurize the cylinder under **49CFR173.28(b)(2)(i)** *Retested without failure in accordance with 49CFR178.604 ...using...at least...7.0 psig...?* Or, is it necessary to leakproofness check the cylinder at service pressure or proof pressure? Until advised in writing by DOT, Thunderbird shall continue its procedure of utilizing a hydrocarbon sniffer at 7 psig to verify leakproofness of propane and propylene cylinders being requalified by *Visual inspection*.

Request for Clarification No. 2- Tare weight verification requirements:

In HM-220E, the final rule requires all UN cylinders manufactured after September 11, 2006 to have the *empty or tare weight in kilograms* stamped on the cylinder. Does *or should* DOT require correct tare weights on (1) all cylinders being manufactured, (2) those cylinders already in service, (3) only those cylinders being filled by weight regardless of their respective levels of corrosion, or (4) none?

CGA C6-2001 4.2.1.1 Corrosion limits states (1) *When a cylinder exhibits corrosion, the cylinder shall be condemned when the tare weight is less than 90% of the original stamped tare weight. A cylinder shall be rejected when the tare weight is less than 95% of the original stamped tare weight.*

CGA Technical Bulletin TB-15- 1997 (Reaffirmed 2004) addresses cylinders *that are charged with a liquefied compressed gas* by weigh that *should be marked with an empty reference weight*, i.e., tare weight to include the valve as they are filled by weight. It goes on to direct that *each time an operation that may change the tare weight is performed on the cylinder such as a valve change, shot blasting, footring replacement, etc., the tare weight shall be verified and should be adjusted if the weight differs from the marked tare weight by more than 1%.* The cylinder, then, should be marked with the corrected tare weight prefixed with a "T" and the original tare weight over stamped with "----"s so as to remain visible. Please note that HM-220E does not reference the "T".

Until HM-220E, DOT has never required tare weights on newly manufactured cylinders. It is common to have inaccurate tare weights on cylinders for any of the following reasons: (1) manufacturers stamped entire production lots with the same tare weight without weighing each cylinder, (2) cylinders have had their valves and footrings replaced with those of different weights, (3) cylinders have various amounts of paint or corrosion, (4) cylinders may hold various amounts of liquefied hydrocarbons or water, etc..

Until advised in writing by DOT, Thunderbird will continue its procedure of tare weighting cylinders when requested by its customers. It will also continue requiring its customers for whom it is filling CO2 to have tare weights. Thunderbird suggests, moreover, that DOT make a determination and clarify whether or not there is a need for tare weights on all cylinders, since cylinders in one service are frequently converted to CO2 or other liquefied services as they age and should have tare weights at the time of requalification and conversion to a liquefied service.

Thunderbird Cylinder holds a RIN No. which authorizes it to requalify cylinders according to the CFR's and all referenced materials. It endeavors to train and certify its personnel to perform their requalification procedures to be in compliance with those regulatory codes. We have no problem when a client requires us to exceed the regulatory requirements. We do, however, face a dilemma in doing the right thing, specifically, as stated above: (1) how and when do we perform leakproofness tests and (2) when should we verify and retare weight a cylinder?

Respectfully,



12/8/2006

Fred A. Nachman
President

(DOT Clarification Tare Wt_Leakproofness 12806.doc)

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