



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

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

**NOV 26 2003**

DOT-E 12629  
(SECOND REVISION)

EXPIRATION DATE: October 31, 2005

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Western Sales & Testing of Amarillo, Inc.  
Amarillo, TX
2. PURPOSE AND LIMITATION:
  - a. This exemption authorizes the transportation in commerce of certain gases in DOT 3AX, 3AAX and 3T cylinders. The cylinders are retested by acoustic emission and ultrasonic examination (AE/UE) described in paragraph 7 below in place of the internal visual inspection and the hydrostatic retest required in § 180.205. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
  - b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.
  - c. Party status will not be granted to this exemption.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 180.209(a), the introductory paragraph, the Table; §§ 180.205 (c), (f), (g); §§ 173.302a(b)(2), (3), and (4) in that the AE and UE are performed in place of the hydrostatic test and the internal visual inspection.

**NOTE:** This does not relieve the holder of this exemption from securing an approval for retesting cylinders from the Associate Administrator for Hazardous Materials Safety.

5. BASIS: This exemption is based on the application of Western Sales & Testing dated May 2, 2003, submitted in accordance with § 107.105 and the public proceeding thereon and § 107.109.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Materials Description	Hazard Class/ Division	Identi- fication Number	Packing Group
Liquefied or nonliquefied compressed gases, or mixtures of such compressed gases, classed as Division 2.1, Division 2.2, or Division 2.3 which are authorized for transportation in DOT 3AX, 3AAX and 3T cylinders (22-inch nominal diameter).	Specific hazard class and division applicable to the compressed gas or gas mixture to be shipped	As listed in § 172.101 for the specific compressed gas or gas mixture	N/A

7. SAFETY CONTROL MEASURES:

- a. PACKAGING - Prescribed packagings are DOT 3AX, 3AAX and 3T cylinders (tubes), mounted on a tube trailer vehicle chassis, a tube module equipped with an ISO frame, or in a disassembled position. In lieu of the hydrostatic test and internal visual inspection prescribed in §§ 180.205 and 180.209, except that each cylinder is examined by acoustic emission and ultrasonic (AE/UE). The minimum wall thickness of DOT 3AX, 3AAX and 3T cylinders with outside diameter of 22 inch must be equal to or greater than 0.400 inch. A cylinder that has been exposed to fire or to excessive heat (temperatures of 1000°F. or greater) must not be retested under the terms of this exemption. Each cylinder must be retested and marked in accordance with the procedures specified in the Western Sales application for exemption on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA) and as prescribed in this exemption.
- b. TESTING - Cylinders must be retested at least once every five (5) years.

(1) Acoustic Emission (AE) Examination: The AE examination must be in accordance with the American

Society for Testing and Materials (ASTM), E 1419-02b, Standard Test Method for Examination of Seamless, Gas-Filled, Pressure Vessels Using Acoustic Emission, specification described in the Western Sales & Testing application on file with OHMEA and as prescribed in this exemption.

(i) Each acoustic emission (AE) site on the cylindrical portion of each tube which produces five or more valid events within an 8 inch (203 mm) axial distance must be subjected to an ultrasonic examination (UE) as prescribed herein. Each AE site on tube ends (i.e. sections of the tube which lie outboard of the sensors) which produces five or more events which hit both sensors and which had 43dB or greater peak amplitude at the "first hit" sensor, must be subjected to UE.

(2) Ultrasonic Examination (UE): The follow-up UE must be performed in accordance with the ASTM E 2333-02 "Examination of Seamless, Gas-Filled, Steel Pressure Vessels, Using Angle Beam Ultrasonics", specification described in the Western Sales & Testing application on file with OHMEA and as prescribed in this exemption.

(i) UE Standardization Ring With Reference Notches (Reference Ring) - The reference ring must be fabricated from the same type of cylinder that is being examined. The reference ring must have the same diameter, minimum design wall thickness with a tolerances of +/- 10%, material, heat treatment, and surface condition as the cylinder to be examined. Reference notches will be placed into both internal and external surfaces of the reference ring. Notches must be made by EDM process. One or more notches may be placed into a single reference ring. Each circumferential notch must have a depth of less than or equal to 25 percent of  $t_m$  or 0.100 inch (2.54 mm), a width of less than or equal to 0.020 inch (0.5 mm), and a length of 1 inch (25.4 mm).

(ii) Circumferential scanning must be performed in both clockwise (CW) and counter clockwise (CCW) directions to ensure adequate coverage of the marked location.

(iii) For difficult to reach locations on cylinders that are stacked in the middle rows, the search unit may be mounted at the end of an extension rod. If an extension rod is used during UE, standardization must be confirmed under the same condition (with extension rod).

(3) Rejection criteria - rejection criteria as established during standardization for any cylinder retested under this exemption is a flaw with a maximum depth less than or equal to 25% of the minimum design wall thickness or any crack with a maximum depth of 0.100 inch (2.54 mm). When a cylinder is rejected, the retester must stamp a series of X's over the exemption or DOT specification number and marked test pressure, or stamp "CONDEMNED" on the shoulder, or neck using a steel stamp, and must notify the cylinder owner, in writing, that the cylinder is rejected and may not be filled with hazardous material for transportation in commerce. Alternatively, at the direction of the owner, the retester may render the cylinder incapable of holding pressure.

c. MARKING -

(1) The exterior of the trailer cabinet of the vehicle chassis to which the cylinders are affixed must be marked with letters at least 2 inches high on a contrasting background "DOT-E 12629".

(2) An exterior tube on each side of a tube module must be marked with letters at least 2 inches high on a contrasting background "DOT-E 12629".

(3) The current retest date must be marked on the recertification plate located on the rear bulkhead inside the trailer cabinet at approximately eye level above the withdrawal valve for tube trailers and on the bulkhead near the withdrawal valve for tube modules.

In the event retest dates of cylinders differ in a trailer cluster, the retest date displayed will be that of the earliest test, meaning the date of the retest that must occur first.

d. Report - A report must be generated for each cylinder that is examined. The AE and UE reports must include the following:

- (1) AE and UE equipment, model and serial No.
- (2) Specification of the standard reference used to UE the cylinder. Standard reference (calibration ring) must be identified by serial number or other stamped identification marking.
- (3) Cylinder serial number and type.
- (4) Maximum allowable filling pressure.
- (5) Minimum prescribed sidewall.
- (6) Number of events at each location.
- (7) Pressure associated with each event.
- (8) Description of each AE event (amplitude, duration, energy, etc.)
- (9) Size of each defect measured (length and depth).
- (10) Type of each defect measured (crack, pitting, etc.)
- (11) Defect location relative to the reference sensor.
- (12) Defect angular location defined by clock direction(3, 5, or 9 O'clock)
- (13) Defect location relative to sidewall (interior, outer surface, inner surface).
- (14) AE and UE technicians' name and certification level
- (15) Test Date
- (16) Acceptance/rejection results.
- (17) The AE and UE reports must be on file at the test site, and made available to a DOT official when requested.

e. Personnel Qualification: Each person who performs retesting or who evaluates or certifies retest results must meet the following requirements:

(1) Project Manager - is the senior manager of Western Sales responsible for compliance with DOT regulations including this exemption. Additionally, the project manager must ensure that each operator and senior review technologist maintain the required certification.

(2) The personnel responsible for performing cylinder retesting under this exemption shall be qualified to an appropriate Level (Level I, II or III)- AE and UE in accordance with the American Society for Nondestructive Testing (ASNT) Recommended Practice SNT-TC-1A-1996 depending upon the assigned responsibility as described below:

(i) A Level II Operator may perform system startup, calibrate the system, and review and certify the test results when a written acceptance and rejection criteria for cylinders have been provided by a Senior Review Technologist. Based upon written criteria, the Level II Operator may authorize cylinders that pass the retest to be marked in accordance with paragraph 7(c) of this exemption. However, a person with Level I certification may perform a system startup, check calibration, and perform AE and UE under the direct guidance and supervision of a Senior Review Technologist or a Level II Operator, either of whom must be physically present at the test site so as to be able to observe examination conducted under this exemption.

(ii) Senior Review Technologist (SRT) - is a person who reviews overall test results, provides supervisory training and technical guidance to operators, and reviews and verifies the retest results. A SRT must have a Level III Certification in AE and UE, and a thorough understanding of the HMR pertaining to the re-qualification and reuse of the DOT cylinders authorized under this exemption. The SRT must prepare and submit the reports required in paragraph 7(f) and annually verify that the AE and UE program is being operated in accordance with the requirements of this exemption.

f. OPERATIONAL CONTROLS.

(1) No person may perform inspection and testing of cylinders subject to this exemption unless:

(i) that person is an employee or agent of Western Sales and has a current copy of this exemption at the location of such inspection and testing, and

(ii) complies with all the terms and conditions of this exemption.

(2) The marking of the retester's symbol on the cylinders certifies compliance with all of the terms and conditions of this exemption.

(3) Each facility approved by OHMEA to test cylinders under the terms of this exemption must have a resident operator with at least a Level II Certification in AE and UE.

8. SPECIAL PROVISIONS:

a. During the first two years of operation under this exemption, the designated SRT must review the AE/UE program every 6 months. The designated SRT must submit a letter to OHMEA verifying that the AE/UE program is meeting the terms and requirements of this exemption. After two years of operation under this exemption, an employee of Western Sales may assume the responsibility of the designated SRT by becoming a recognized ASNT level III.

b. Offerors may use the cylinders specified and tested in accordance with the provisions of this exemption for the transportation in commerce of those hazardous materials specified herein, provided no modifications or changes are made to the cylinders, and all terms of this exemption are complied with.

c. Shippers using the cylinders covered by this exemption must comply with the provisions of this exemption, and all other applicable requirements contained in 49 CFR Parts 100-180.

d. A person who is not a holder of this exemption who receives a package covered by this exemption may reoffer it for transportation provided no modification or change is made to the package or its contents and it is reoffered for transportation in conformance with this exemption and the HMR.

e. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

f. Cylinders retested in accordance with paragraph 7 above may be charged to 110 percent of marked service pressure in accordance with § 173.302a(b).

g. A statement of qualifications, for each "qualified tester" used under this exemption and information in support thereof, must be maintained by Western Sales. The location of this statement, for each "qualified tester", must be identified to the OHMEA.

h. Transportation of Division 2.1 (flammable gases) and Division 2.3 (gases which are poisonous by inhalation) are not authorized aboard cargo vessel unless specifically authorized in the Hazardous Materials Table (§ 172.101).

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo vessel.
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each motor vehicle and cargo vessel used to transport packages covered by this exemption.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
  - o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
  - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when this exemption has expired or is otherwise no longer in effect.

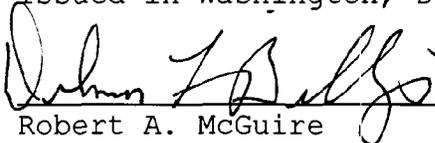
12. REPORTING REQUIREMENTS: The following information must be reported to OHMEA:
  - a. The name of each person qualified to conduct testing under Paragraph 7.c., before use as a "qualified tester".
  - b. Location of each facility where testing under this exemption is conducted.
  - c. A report on the first test and a report each 6 months thereafter indicating the number of cylinders tested under this exemption and identification by serial number of those passing and those failing to pass the test authorized by

this exemption. Specifically, each report must include at least the following information:

- (1) DOT specification number.
- (2) Maximum allowable filling pressure.
- (3) Minimum prescribed sidewall.
- (4) Number of events at each location.
- (5) Pressure associated with each event.
- (6) Description of each AE event (amplitude, duration, energy, etc.)
- (7) Size of each defect measured (length and depth).
- (8) Type of each defect measured (crack, pitting, etc.).
- (9) Defect location relative to each sensor.  
Defect location relative to sidewall (interior, outer surface, inner surface).

d. The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder of this exemption must inform the AAHMS, in writing, of any incident involving the package that is retested under the terms of this exemption.

Issued in Washington, D.C.:



*bn*  
Robert A. McGuire  
Associate Administrator for  
Hazardous Materials Safety

NOV 26 2003

(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.  
Attention: DHM-31.

Copies of this exemption may be obtained by accessing the Hazardous Materials Safety Homepage at <http://hazmat.dot.gov/exemptions> Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: MMToughiry/alb