



U.S. Department  
of Transportation

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

**Research and  
Special Programs  
Administration**

APR 1 2004

DOT-E 12018  
(FIFTH REVISION)

EXPIRATION DATE: March 31, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Hydra-Rig  
Fort Worth, Texas
2. PURPOSE AND LIMITATIONS:
  - a. This exemption authorizes the manufacture, mark, sale and use of a non-DOT specification insulated portable tank conforming with all regulations applicable to a DOT Specification MC-338 insulated cargo tank, except as specified herein, for the transportation in commerce of nitrogen, argon or oxygen, refrigerated liquids. This exemption provides no relief from any regulation 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.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.318 and § 176.76(g)(1) in that a non-DOT specification packaging is authorized as specified herein.
5. BASIS: This exemption is based on the application of Hydra-Rig dated March 3, 2004, submitted in accordance with § 107.109.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous materials description -- proper shipping name	Hazard Class/ Division	Identification Number
Argon, refrigerated liquid ( <i>cryogenic liquid</i> )	2.2	UN1951
Nitrogen, refrigerated liquid ( <i>cryogenic liquid</i> )	2.2	UN1977
Oxygen, refrigerated liquid ( <i>cryogenic liquid</i> )	2.2	UN1073

7. SAFETY CONTROL MEASURES:a. PACKAGING -

(1.) Packaging authorized is an insulated non-DOT specification portable tank designed and constructed in accordance with DOT Specification MC-338 cargo tank motor vehicle, except as modified herein. The portable tank is enclosed in an ISO type frame and is vacuum-insulated. Design pressure is 46 PSIG for the internal tank. Design temperature is -320°F for the inner tank and any part, valve or fitting that may come in contact with the lading. Water capacity is 1920 gallons, nominal Tank material is SA 240 Type 304 for the inner tank and A572 Grade 50 and A36 carbon steel for the outer jacket.

(2.) Tanks built after 1/1/98 must conform with MVE Drawing C-10735473 Rev D dated 9/9/97, Hydra Rig Drawings NE100004 Rev C dated 10/17/97, NE100007 Rev C dated 10/17/97, NE100009 Rev B dated 10/17/97. Tanks built before 1/1/98 must conform with MVE Drawing C-10735473 No Rev dated 5/18/95, C-10735473 Rev A dated 1/10/96, C-10735473 Rev B dated 7/23/96, or C-10735473 Rev C dated 5/22/97, and other referenced drawings. All tanks must conform with calculations, specifications and drawings on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA) and with § 178.338, except as follows:

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(i.) § 178.338-10 does not apply.

(ii.) The portable tank need not conform with § 178.338-13(b) or (c). Lifting lugs, framework and any anchoring to the inner tank or the tank jacket must conform with § 178.338-13(a).

(iii.) Portable tanks that meet the definition of "container" must meet the requirements of 49 CFR parts 450 thru 453, and each design must be qualified in accordance with § 178.270-13(c), even if used in domestic service.

(iv.) "DOT-E 12018" must replace the mark "MC-338" on the nameplate specified in § 178.338-18(a).

(3.) Tanks built before 1/1/98 must have serial numbers listed on the MVE data sheet dated February 26, 1998 in the application for modification on file with OHMEA.

(4.) The following provisions apply to tanks built after 9/1/98:

(i.) At the time of delivery, the manufacturer of a portable tank must furnish to the owner of the tank, the tank manufacturer's data report as required by the ASME Code, and a certificate bearing the tank serial number stating that the portable tank conforms to the requirements of this exemption. For each portable tank the certificate must be signed by a responsible official of the manufacturer.

(ii.) For multiple stage construction, each manufacturer who performs a manufacturing operation on the portable tank or portion thereof must furnish to the succeeding manufacturer, at the time of delivery, a certificate covering the manufacturing operation performed by that manufacturer, and any certificates received from previous manufacturers. Each certificate must be signed by an official of the manufacturing firm responsible for the portion of the tank represented thereby. The final manufacturer must furnish the owner with all certificates.

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b. TESTING - Each portable tank must be reinspected and retested once every five years in accordance with the procedure prescribed in § 173.32(e) for DOT Specification 51 portable tanks. The test pressure for the inner tank must be determined from the following formulas:

If there is no vacuum in the outer jacket during test:

$$P_T = 1.25 \times [ P_d + H_s + 14.7 ]$$

If vacuum exists in the outer jacket during test:

$$P_T = 1.25 \times [ P_d + H_s + 14.7 ] - 14.7$$

Where:

$P_T$  = Test pressure, psig

$P_d$  = Design pressure (the sum of the maximum allowable working pressure, liquid head and 14.7 psi)

$H_s$  = Static head of liquid in inner tank, psi

c. OPERATIONAL CONTROLS -

(1.) Each portable tank must be prepared and shipped as required in § 173.318, as applicable for the lading.

(2.) Shipments by cargo vessel must conform with the following:

(i.) The package must conform with 49 CFR 176.76(g). The portable tank must be stowed on deck and may not be overstowed with other containers or freight.

(ii.) The legend "One-Way Travel Time Hours" or "OWTT \_\_\_\_\_ Hours" must be marked on the shipping paper and on the dangerous cargo manifest immediately after the container description. The OWTT is determined by the formula:

$$OWTT = MRHT - 24 \text{ hours.}$$

(iii.) The offeror must prepare a written record of the portable tank's pressure and ambient (outside) temperature at the following times must be prepared for each shipment.

- (A) At the start of each trip;
- (B) Immediately before and after any manual venting;
- (C) At least every 24 hours; and
- (D) At the destination point.

(iv.) Any lading road relief valve set at a pressure lower than that prescribed for the (safety) pressure relief valve must be closed during transportation by cargo vessel unless the holding time was determined based on the setting of the pressure control valve.

(3) No person may transport or offer for transportation a charged portable tank unless the pressure of the lading is equal to or less than that used to determine the marked rated holding time (MRHT) and the OWTT is equal to or greater than the elapsed time between the start and termination of travel.

(4) Each offeror must determine the actual holding time for each tank before each shipment. If it is determined that the actual holding time is less than 90 percent of the (MRHT) of the tank, the tank may not be refilled until it is restored to its MRHT or the tank is re-marked with the reduced holding time determined by this examination.

(5) The manufacturer must determine the holding time and the MRHT of the first portable tank and must submit the results thereof to OHMEA prior to initial shipment.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.

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

d. Each packaging manufactured under the authority of this exemption must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.

f. The portable tank owner must retain the data reports, certificates and related papers throughout his ownership of the portable tank.

g. MARKING - Each portable tank must be plainly marked "DOT-E 12018" on both sides near the middle, in letters at least two inches high on a contrasting background.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo vessel.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or motor vehicle 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, Parts 171-180.

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- o Persons operating under the terms of this exemption must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- 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.

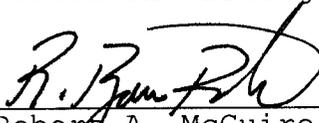
No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: 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(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.

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(DATE)

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

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: PTOlson/sln