

March 17, 2006



U.S. Department
of Transportation

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

**Pipeline and
Hazardous Materials
Safety Administration**

DOT-SP 12442
(FIFTH REVISION)

EXPIRATION DATE: February 28, 2010

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Cryogenic Vessel Alternatives
Mont Belvieu, TX
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, marking, sale and use of a non-DOT specification vacuum insulated portable tank, conforming with the regulations applicable to a DOT Specification MC 338 cargo tank, except as specified herein, for the transportation in commerce of nitrogen, refrigerated liquid. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in development of this special permit 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 §§ 173.320 and 176.76(g)(1) in that a non-DOT specification vacuum insulated portable tank is not authorized, except as specified herein.
5. BASIS: This special permit is based on the application of Cryogenic Vessel Alternatives dated February 16, 2006, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description		
Proper Shipping Name	Hazard Class/ Division	Identification Number
Nitrogen, refrigerated liquid	2.2	UN1977

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 provided herein. Each portable tank is enclosed in an ISO type frame and is vacuum-insulated. Water capacity may not exceed 3200 gallons, nominal. Tanks of two design pressures (45 psig and 100 psig) are authorized.

Design temperature must be -320°F for the inner tank and any part, valve or fitting that may come in contact with the lading. Tank material must be SA 240 Type 304 stainless steel for the inner tank and A607 Grade 50 carbon steel for the outer jacket.

(2) Tanks must conform with Cryogenic Technical Services, Inc. drawing numbers 10298 dated 2/22/00, 10375 dated 2/14/00, 10404 dated 2/15/00, 10252 dated 1/20/00, A1027 dated 4/28/03 and other drawings, calculations, specifications on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA). Additionally, tanks must conform with § 178.338, except as follows:

(i) Impact testing is not required for stainless steels used for a lading warmer than -425°F.

(ii) § 178.338-10 does not apply.

(iii) 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).

(iv) 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).

(v) New construction of tanks to be authorized by this special permit is prohibited after December 31, 2003.

- b. TESTING - Each portable tank must be reinspected and retested once every five years in accordance with the procedure prescribed in § 180.605 for DOT Specification 51 portable tanks. The test pressure for the inner tank shall be determined from the following formulas:

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

$$P_r = 1.25 \times P_d$$

If vacuum exists in the outer jacket during test:

$$P_r = [1.25 \times P_d] - 14.7$$

Where:

P_r = Test pressure, psig

P_d = Design pressure (the sum of the maximum allowable working pressure, static head of liquid in inner tank in psi, and 14.7 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 § 176.76(g). The portable tank must not be overstowed with other containers or freight.

(3) 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.

(4) Tanks with ISO corner castings may be stacked, but not more than one tank may be stacked on another.

8. SPECIAL PROVISIONS:

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

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- b. A person who is not a holder of this special permit, but receives a package covered by this special permit, 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 special permit and the HMR.
- c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.
- d. Each packaging manufactured under the authority of this special permit 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 Special Permits and Approvals for a specific manufacturing facility.
- e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.
- f. Each portable tank must be plainly marked "DOT-SP 12442" on both sides near the middle, in letters at least two inches high on a contrasting background. Additionally, "DOT-SP 12442" must replace the mark "MC-338" on the nameplate specified in § 178.338-18(a).
- g. Packages permanently marked 'DOT-E 12442', prior to October 1, 2007 may continue to be used under this special permit for the remaining service life the package or until the special permit is no longer valid. Packages marked after October 1, 2007 must be marked 'DOT-SP 12442'.
- h. Shipping papers displaying 'DOT-E 12442' may continue to be used until October 1, 2007, provided the special permit remains valid.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo vessel.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel or motor vehicle used to transport packages covered by this special permit.

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11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit 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 special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Persons operating under the terms of this special permit 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 special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

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

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- 'The Hazardous Materials Safety and Security Reauthorization Act of 2005' (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term 'exemption' to 'special permit' and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

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12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Robert A. McGuire
Associate Administrator
for Hazardous Materials Safety

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

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: PTOlson/dl/kah