

March 18, 2009



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 6765
(NINETEENTH REVISION)

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: (See individual authorization letter)
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the transportation in commerce of insulated non-DOT specification portable tanks containing Divisions 2.1 and 2.2 cryogenic liquid. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.
 - c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 172.203(a) and 176.30(a)(6) in that the shipping papers need not note the special permit number, and §§ 173.318, 173.320, and 176.76(g) in that alternative packaging is authorized.
5. BASIS: This special permit is based on the Pipeline and Hazardous Materials Safety Administration's (PHMSA) editorial review under § 107.121 initiated on December 4, 2008.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Helium, refrigerated liquid (<i>cryogenic liquid</i>)	2.2	UN 1963	N/A
Hydrogen, refrigerated liquid (<i>cryogenic liquid</i>)	2.1	UN 1966	N/A

7. SAFETY CONTROL MEASURES: Packaging prescribed is an insulated, non-DOT specification portable tank designed and constructed in conformance with Section VIII of the ASME Code, and subparagraph a. or b. of this paragraph. The portable tank is skid-mounted or enclosed in an ISO type frame. The portable tank is vacuum-insulated with a supplemental liquid nitrogen shield. Design pressure is 64 or 91 PSIG for the internal tank, and 6 PSIG for the liquid nitrogen tank. Design temperature is -452°F for the inner tank and any part, valve or fitting that may come in contact with the lading; and -320°F for the liquid nitrogen tank and any part, valve or fitting that may come in contact with liquid nitrogen. Nominal water capacity is 11,000 (U.S.) gallons for the inner tank and 385 (U.S.) gallons for the nitrogen tank. Material for the inner tank and the nitrogen tank is SA-240 Type 304 stainless steel; material for the outer jacket is SA 36 or ASTM A 283 or equivalent steel.

a. Each portable tank must conform to Gardner Cryogenics Corporation's drawing 7453 (internal tank design pressure is 64 PSIG) and design calculation 5750, or drawing 8075A (internal tank design pressure is 91 PSIG) and design calculation 2450 on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA). No new construction is authorized unless the design conforms with subparagraph 7.b. of this special permit.

b. New construction after December 31, 1992, must conform with § 178.338 except as follows. Corresponding drawings and calculations must be submitted to the OHMSPA prior to first shipment.

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(1) Impact testing may be waived for inner tank material of cargo tanks with a design temperature warmer than -420°F.

(2) § 178.338-10 does not apply.

(3) The portable tank need not conform to § 178.338-13(a) and (b). Lifting lugs, framework and any anchoring to the inner tank, the nitrogen tank or the tank jacket must conform with § 178.338-13(a). A portable tank that meets the definition of "container" in 49 CFR 450(a)(2) must meet the requirements of 49 CFR Parts 450 through 453, and each design must be qualified in accordance with § 178.270-13(c).

(4) Effective July 1, 2002, each tank must be marked with the special permit number "DOT-SP 6765" in lieu of the "MC 338" marking required by § 178.338-10.

8. SPECIAL PROVISIONS:

a. Each portable tank must be reinspected and retested once every five years in accordance with § 173.32(e) as prescribed for DOT Specification 51 portable tanks. The test pressure in 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 (maximum allowable working pressure), psig

H_s = Static head of liquid in inner tank, psi

b. Each portable tank must be plainly and durably marked on both sides near the middle, in letters and numbers at least two (2) inches high, on a contrasting background, "DOT-SP 6765". Each portable tank used in hydrogen service must be marked "One-way travel time _____ Hours" or "OWTT

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_____ Hours" in letters at least two (2) inches high near the "DOT-SP 6765" marking. The proper OWTT must be determined using the formulas in subparagraphs d. or e. of this paragraph.

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

d. Shipments by motor vehicles must conform with the following:

(1) The OWTT must be determined for each portable tank used in hydrogen service by the formula:

$$\text{OWTT} = 0.5 (\text{MRHT} - 24); \text{ for MRHT less than 72 hours, or}$$

$$\text{OWTT} = \text{MRHT} - 48; \text{ for MRHT of 72 or more hours.}$$

(2) The provisions of § 177.840 apply to each portable tank used in hydrogen service.

e. Shipments by cargo vessel must conform with the following requirements:

(1) Portable tanks may be overstowed only if enclosed in an ISO-type frame and otherwise suitably protected. In all situations, the portable tanks must be stowed such that they are readily accessible and can be monitored in accordance with the provisions of this special permit.

(2) The legend "One-Way Travel Time _____ Hours" or "OWTT _____ Hours" must be marked on the shipping paper immediately after the container description. The OWTT is determined by the formula:

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

(3) A written record of the portable tank's pressure and ambient (outside) temperature at the following times must be prepared for each shipment.

(i) At the start of each trip;

(ii) Immediately before and after any manual venting;

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(iii) At least every 24 hours; and

(iv) At the destination point.

(4) 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 rated holding time was determined based on the setting of the road relief valve.

f. No person may transport 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 and the OWTT is equal to or greater than the expected elapsed time between the start and termination of travel.

g. The actual holding time for each tank must be determined after 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 remarked with the reduced holding time determined by this examination.

h. A person who is not a holder of this special permit who 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 reoffered for transportation in conformance with this special permit and the HMR.

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

j. The requirement to mark the special permit number on each shipping paper is waived.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo vessel except shipment of hydrogen is limited to transportation by motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel and 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 the 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.

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

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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 Theodore L. Willke
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

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: sln