December 8, 2006

U.S. Department
of Transportation

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

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 11559
(SIXTH REVISION)

EXPIRATION DATE: November 30, 2010

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Chart Industries, Inc.
Cleveland, OH

2. PURPOSE AND LIMITATIONS:

a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification insulated portable tanks conforming with all regulations applicable to a DOT Specification MC-338 cargo tank motor vehicle for the transportation in commerce of helium, 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 §§ 173.318 and 176.76(g) in that a non-DOT specification packaging is not authorized, except as specified herein.

5. BASIS: This special permit is based on the application of Chart Industries, Inc. dated December 7, 2006, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Material Description	Hazard Class/ Division	Identi-fication Number	Packing Group
Helium, refrigerated liquid *(cryogenic liquid)*	2.2	UN1963	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging 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 with a supplemental liquid nitrogen shield. Design pressure is 91.5 PSIG for the internal tank, and 10 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. Water capacity is 11,000 gallons, nominal for the inner tank and 390 gallons for the nitrogen tank. Tank material is SA 240 type 304 for the inner tank and for the nitrogen tank; and A 607 Grade 50 carbon steel for the outer jacket.

The tank must conform with Cryogenic Technical Services, Inc. Drawing Nos. 5328 Rev. A dated 2/20/95; 5296 Rev. C Sheets 1 & 2 dated 11/19/94; 5320 Rev. 0 dated 11/19/94 and 5610 Rev. B Sheets 1 & 2 dated 1/31/95 and other referenced drawings, calculations and specifications on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) and with § 178.338, except as follows:

(1) § 178.338-10 does not apply.

(2) The portable tank need not conform with § 178.338-13(a) or (b). However, lifting lugs, framework and any anchoring to the inner tank, the nitrogen shield tank or the tank jacket must conform with § 178.338-13(a).

(3) 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).

(4) "DOT-SP 11559" must replace the mark "MC-338" on the nameplate specified in §178.338-18(a).

b. TESTING - Each portable tank must be reinspected and retested once every five years in accordance with the procedure prescribed in § 173.32 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 § 176.76(g). The portable tank must 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 hours.

(iii) 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) 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 re-marked with the reduced holding time determined by this examination.

(5) The holding time and the MRHT of the first portable tank must be determined and results thereof must be submitted to OHMSPA 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 special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

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 modification or change is 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 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. MARKING - Each portable tank must be plainly marked "DOT-SP 11559" on both sides near the middle, in letters at least two inches high on a contrasting background.

g. Packagings permanently marked 'DOT-E 11559', prior to October 1, 2007 may continue to be used under this special permit for the remaining service life of the packaging or until the special permit is no longer valid. Packagings marked on or after October 1, 2007 must be marked 'DOT-SP 11559'.

h. Shipping papers displaying 'DOT-E 11559' may continue to be used until October 1, 2007, provided the special permit remains valid.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight 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.

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:

- All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- 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.
- 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.

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: KFW/sln