March 11, 2019

U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety Administration**

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

DOT-SP 10480
(TENTH REVISION)

EXPIRATION DATE: 2023-02-28

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Air Products and Chemicals Inc.
Allentown, PA

2. PURPOSE AND LIMITATIONS:

a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification vacuum insulated portable tanks 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. 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. In accordance with 49 CFR 107.107(a) party status may not be granted to a manufacturing permit. These packagings may be used in accordance with 49 CFR 173.22a.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.203(a)in that the marking requirements are waived, §§ 173.318, 173.320, 176.30, and 176.76(h) 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 Air Products and Chemicals, Inc. dated July 25, 2018 and submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

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

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packaging prescribed is a vacuum insulated non-DOT specification portable tank designed and constructed in accordance with Section VIII, Division I of the ASME Code and subparagraph (1) of this paragraph. The portable tank is enclosed in an ISO type frame and is vacuum insulated with a cold mass shield. Design pressure is 190 PSIG for the internal tank and the outer jacket is designed to withstand a collapse pressure of 30 PSIG. Design temperature is -452°F. Water capacity is 3,476 gallons, nominal for the inner tank. Tank material is SA 240 Type 304N stainless steel for the inner tank, 300 series stainless steel for the internal piping, and SA 36 or SA 516-70 carbon steel for the outer jacket.

(1) Each portable tank must conform to Gardner Cryogenics assembly drawings numbers: 13747B dated July 28, 1989, 13759B dated July 24, 1989, 13766B dated July 24, 1989, 13771B dated August 18, 1989, 13772B dated August 18, 1989, 13813D dated August 16, 1989, 13984D dated January 23, 1990, 14035D dated February 12, 1990, 14037D dated February 23, 1990 (Final Assembly), 14050D dated January 31, 1990, and other reference drawings, calculations and technical specifications on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA), and with § 178.338 except as follows:

(i) Section 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, the helium shield tank or the tank jacket must conform with § 178.338-13(a). Each portable tank design must be qualified in accordance with § 178.270-13(c).

(iii) Effective August 1, 2002, "DOT-SP 10480" must replace the mark "MC 338".

b. TESTING: Each portable tank must be reinspected and retested once every five years in accordance with § 180.605 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

c. OPERATIONAL CONTROLS:

(1) Each portable tank must be plainly marked "DOT-SP 10480" on both sides near the middle, in letters at least two (2) inches high on a contrasting background.

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

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

(i) The package must conform to § 176.76(g). Portable tanks may be over-stowed only if enclosed in ISO-type frames 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.

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

(4) 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 and the OWTT is equal to or greater than the expected elapsed time between the start and termination of travel.

(5) 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 holding time determined by this examination.

(6) The portable tank must be secured to the motor vehicle in accordance with the requirements of 49 CFR 393.100 through 393.106. Additionally, the motor vehicle's bumper must be located at least 6 inches to the rear of any tank component used for loading or unloading that may contain lading during transit.

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 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.

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.

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, 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 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 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 William Schoonover
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials 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: Andrew Eckenrode