

October 12, 2018



U.S. Department
of Transportation

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

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 10756
(TENTH REVISION)

2018-12-31 (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 a vacuum insulated, non-DOT specification portable tank in an ISO frame for the transportation in commerce of certain Division 2.2 materials. 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 § 173.318 and § 176.76(g)(1) in that a non-DOT specification portable tank is not authorized, except as prescribed herein.
5. BASIS: This special permit is based on the application of Worthington Cryogenics LLC, dated February 26, 2016, submitted in accordance with § 107.109 and additional information dated June 28, 2018.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Argon, refrigerated liquid (<i>cryogenic liquid</i>)	2.2	UN1951	N/A
Nitrogen, refrigerated liquid <i>cryogenic liquid</i>	2.2	UN1977	N/A
Nitrous oxide, refrigerated liquid	2.2	UN2201	N/A
Oxygen, refrigerated liquid (<i>cryogenic liquid</i>)	2.2	UN1073	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packaging prescribed is a non-DOT specification portable tank designed and constructed in accordance with Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code. The HTM 3400 portable tanks are vacuum insulated and enclosed in an ISO type frame. Each tank has a maximum allowable working pressure of 250 psig (17.2 bars), design pressure of 269 psig (18.5 bars), a design temperature of -320 °F (-196 °C), and a water capacity of 3,400 gallons (12,870 liters). Each portable tank must conform to Taylor-Wharton Cryogenics' drawings, design calculations, and U1-A forms on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD). Each portable tank must also conform with 49 CFR 178.338 except as follows:

§ 178.338-2 Material.

(a) Tank construction material is SA 240 Type 304 austenitic stainless steel for the inner tank; and SA-283 Grade "C" steel or A-36 carbon steel for the outer jacket. Material for structural attachments is SA 36 or equivalent specification steel.

(b), (c), (d) * * *

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(e) Postweld heat treatment is not required.

(f) * * *

§ 178.338-6 Manholes.

(a) * * *

(b) Each portable tank must be provided with an inspection access hole (manhole) of not less than 18 inches (456 mm) diameter. After a final inspection, the access hole must be closed by welding using a suitable access cover plate fabricated from the same material as the tank. The tank must be provided with a means of entrance and exit through the jacket, or the jacket must be marked to indicate the access hole location.

(c) Not applicable.

§ 178.338-10 Collision damage protection.

Does not apply.

§ 178.338-13 Supports and anchoring.

(a) * * *

(b) and (c) A portable tank that meets the definition of "container" must meet the requirements of 49 CFR Parts 450 through 453, and each design must be qualified in accordance with § 178.270-13(c) (revised as of October 1, 2006).

§ 178.338-18 Marking

(a) Applies except "DOT-SP 10756" must replace the mark "DOT MC 338".

(b) * * *

(1) Vehicle manufacturer: Not applicable

(2) Manufacturer's vehicle serial number: Not applicable

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b. TESTING: Each portable tank must be reinspected and retested once every five years in accordance with 49 CFR 180.605 as prescribed for DOT Specification 51 portable tanks. The test pressure in the inner tank shall be determined from the following formulas:

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

$$P_T = 1.25 \times P_d$$

If vacuum exists in the outer jacket during test:

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

Where:

P_T = Test pressure, psig

P_d = Design pressure (the sum of working pressure, vacuum pressure, and maximum liquid head)

c. No new manufacture of portable tanks is authorized under this special permit.

8. SPECIAL PROVISIONS:

a. 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.

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

c. 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.

d. Each portable tank must be plainly marked on both sides near the middle, in letters at least two (2) inches high on a contrasting background, "DOT-SP 10756".

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

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f. Shipments by cargo vessel must conform to the following:

(1) The package and its stowage must conform with § 176.76(h). The portable tank may not be overstacked with other containers or freight.

(2) The legend "One-Way Travel Time _____ 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: $OWTT = MRHT - 24 \text{ hours}$.

(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;

(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.

g. 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.

h. The actual holding time for each tank must be determined after each shipment. If the actual holding time is determined to be 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.

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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:
- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 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

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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, 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/NICKS