

February 6, 2004



U.S. Department
of Transportation

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

**Research and
Special Programs
Administration**

DOT-E 7227
(NINTH REVISION)

EXPIRATION DATE: December 31, 2005

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Chart Industries, Inc.
Storage Systems Division
New Prague, MN
(Former grantee: MVE, Inc.)
2. PURPOSE AND LIMITATIONS:
 - a. This exemption authorizes the manufacture, mark, sale and use of non-DOT specification portable tanks with pressure controlling valves set at 25 psig or less, to be used for the transportation in commerce of non-pressurized Division 2.2 cryogenic liquids. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in development of this exemption 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 in that non-DOT specification portable tanks are not authorized, except as specified herein.
5. BASIS: This exemption is based on the application of Chart Industries dated January 7, 2004, 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
Nitrogen, refrigerated liquid <i>cryogenic liquid</i>	2.2	UN1977	N/A
Oxygen, refrigerated liquid <i>(cryogenic liquid)</i>	2.2	UN1073	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 of the ASME Code as follows:

1. The portable tank is skid mounted or enclosed in an ISO type frame. Design temperature is -320°F for the inner tank and any part, valve or fitting that may come in contact with the lading. Inner tank material is SA 240 Type 304 stainless steel. Jacket material is SA 36 carbon steel or equivalent.

2. Each portable tank must conform to one of Richmond Lox Equipment Company's specifications in Appendix A of this exemption and on file with the Office of Hazardous Materials Transportation Exemptions and Approvals (OHMEA). No new construction is authorized unless the tank design and construction conforms with paragraph 3 below. The portable tank identified with serial number 8432 is authorized for oxygen service without a manhole, provided that its jacket is marked to indicate location of inspection opening on the tank.

3. Tanks constructed after December 31, 1986, must conform to § 178.338 except:

(i) Impact test is not required.

(ii) § 178.338-10 does not apply.

(iii) Lifting lugs, framework and any anchoring to the inner tank or tank jacket must conform with § 178.338-13(a). A portable tank that meets the

definition of "container" in 49 CFR 450(a)(3) must meet the requirements of 49 CFR Parts 450 through 453 and each tank design must be qualified in accordance with § 178.270-13(c).

4. Drawings and calculations for each portable tank manufactured after Dec. 31, 1986 must be submitted to the OHMEA prior to first shipment.

b. TESTING - Each portable tank must be reinspected and retested at least once every five years in accordance with § 173.32(e) as prescribed for DOT Specification 51 portable tanks at a test pressure of one and one-fourth times the sum of the design pressure plus the static head, plus 14.7 psig.

c. OPERATIONAL CONTROLS -

1. Each portable tank must be prepared and shipped as required in § 173.318, for MC 338 cargo tanks, as applicable for the lading. The portable tank may be equipped with road relief valves set to discharge at 25 psig or less and arranged to discharge as the pressure relief valves.

2. 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 elapsed time between the start and termination of travel.

8. SPECIAL PROVISIONS:

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

b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modification or change is made to the package or its contents and it is offered for transportation in conformance with this exemption and the HMR.

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

d. Each packaging manufactured under the authority of this exemption 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 Exemptions and Approvals for a specific manufacturing facility.

e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.

f. MARKING -

1. "DOT-E 7227" must replace the mark "MC 338".

2. Each portable tank must be plainly marked on both sides near the middle in letters at least two inches high on a contrasting background, "DOT-E 7227". In addition, each tank must be marked in accordance with § 172.326(a), except the maximum letter size must be four inches.

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

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

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicles, cargo vessel and rail freight (See paragraph 10 for limitations).

10. MODAL REQUIREMENTS:

Shipments by cargo vessel must conform with the following:

a. The provisions of § 176.76(g) applies. The portable tanks may not be overstowed with other containers or freight.

In addition, for each shipment, a written record of the portable tank pressure and ambient (outside) temperature at the following times must be prepared.

1. At the start of each trip;
2. Immediately before and after any manual venting;
3. At least once every 24 hours; and
4. At the destination point.

b. A portable tank transported aboard a cargo vessel may not be partially unloaded during any segment of transportation. A secondary stop valve must be provided outboard of each excess flow valve on tanks transported aboard a cargo vessel.

c. Each portable tank used to transport a cryogenic liquid aboard cargo vessels must be examined after each shipment to determine its actual holding time. If the examination indicates that the actual holding time is less than 90% of the marked rated holding time of the tank, the tank may not be refilled until it is restored to its marked rated holding time or tank is remarked with the reduced actual rated holding time determined by this examination.

d. A current copy of this exemption must be carried aboard each cargo vessel used to transport packages covered by this exemption.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption 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 exemption and the Hazardous Materials Regulations, Parts 171-180.
 - 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 exemption must receive training on the requirements and conditions of this exemption in

addition to the training required by §§ 172.700 through 172.704.

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

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

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, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.
Attention: DHM-31.

Copies of this exemption may be obtained by accessing the Hazardous Materials Safety Homepage at <http://hazmat.dot.gov/exemptions> Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: KFW:dl

APPENDIX A

SPECIFICATION AND DRAWINGS FOR PORTABLE TANKS (DOT-E 7227)

Tank Model

PT-10-LN-SP PT-19-LN-SP PT-20-LN-SP PT-22-LN-SP SK-31-LO-SP

Design Pressure (MAWP)

43 psig 43 psig 43 psig 43 psig 244 psig

Water Capacity (gallons)

1060 1920 2045 2200 3126

General Arrangement

Drawing

E24-193 Rev 6, or E74-152 Rev 3, D75-349 Rev 3, E-86-193 Rev 0,
E74-194, Rev 6, E75-003, Rev 0 or D740194 Rev 8, E76-495 Rev
5E74-194 Rev 3 or E81-736 Rev 0

Inner Vessel

Drawing

D71-106 Rev 8, D77-80 Rev 0, or D74-240 Rev 0 or 074-240 Rev
2086-061 Rev 0 or 9 E74-196 Rev 3, 2, D72-415, Rev 1
or B74-235 Rev 3

Outer Vessel

Drawing

D74-234 Rev 1, B74-191 Rev 3 or B74-235, Rev 0 D74-235, Rev 3,
C86-062, Rev 0 or 2 D74-191 Rev 3

External Piping

E74-533 Rev 0 or E76-49 Rev, D74-536- Rev 3, D86-192 Rev 0

Assembly Drawing

D72-482 Rev 4 or E76-320 Rev 8