U.S. Department
of Transportation

**Pipeline and
Hazardous Materials
Safety Administration**

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

AUG 3 _ 2005

DOT-E 6299
(THIRTEENTH REVISION)

EXPIRATION DATE: June 30, 2007

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Chart Industries, Inc.
Storage Systems Division
New Prague, MN

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, mark, sale and use of non-DOT specification portable tanks conforming with all regulations applicable to a DOT Specification MC 338 cargo tank motor vehicle, except as specified herein, for the transportation in commerce of the materials listed in paragraph 6 below. 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 and § 176.76(g)(1) in that non-DOT specification packaging is not authorized, except as specified herein.

5. BASIS: This exemption is based on the application of Chart Industries, Inc. dated June 6, 2005, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Materials Description	Hazard Class/ Division	Identi-fication Number	Packing Group
Argon, refrigerated liquid *(cryogenic liquid)*	2.2	UN1951	N/A
Nitrogen, refrigerated liquid *(cryogenic liquid)*	2.2	UN1977	N/A
Oxygen, refrigerated liquid *(cryogenic liquid)*	2.2	UN1073	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING -

(1) Prescribed packaging is a non-DOT specification portable tank having a stainless steel inner tank, insulated with multiple layers of aluminum foil and fiberglass sheeting, and evacuated, and having a protective outer steel jacket. Each tank must be designed and constructed in accordance with Section VIII of the ASME Code, and to Minnesota Valley Engineering (MVE) drawings on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA). Each tank must have a minimum design pressure of 250 PSIG. In addition, each tank must conform to the following requirements:

(i) Authorized sizes and designs are shown on MVE drawings as follows:

MVE MODEL	WATER CAPACITY GALLONS	MVE DRAWING NUMBER
HLD 500	550	A-8607 Rev. B or D-12231 Rev. W
HLD 800	880	D-8680 Rev. M or D-12232 Rev. W
HLD 1200	1320	D-10391-8 Rev. B

HLD 1500	1650	D-10391-10 Rev. 0
HLD 2072	2200	D-10391-2 Rev. C
HLD 1530N	1650	D-14698 Rev. U
HLD 3084	3300	D-26046, Rev. 0 or D-17883, Rev E
HLD 230	2300	D-20904 Rev. 0

NOTE: Previous revision levels are also active unless noted.

(ii) The tank must be protected by one or more spring loaded safety relief valves and one or more frangible discs arranged to discharge upward and unobstructed to the outside of the protective housing in such a manner as to prevent impingement of discharge on the tank itself, other cargo or ship bulkhead. The rated relieving capacity for each safety relief valve and frangible disc must be as determined by the flow formulas contained in CGA Pamphlet S-1.2. The minimum total capacity of the safety relief valves and the minimum total capacity of the frangible discs must be as calculated using the formulas in the above pamphlet with the insulation space saturated with gaseous lading at atmospheric pressure, or on a bare tank basis. Each safety relief valve on the tank must be set to start-to-discharge at a pressure no higher than 110 percent of the tank design pressure. The frangible discs must be designed to provide relief at a pressure no lower than 130 percent and no higher than 150 percent of the tank design pressure.

(2) New construction after August 31, 1999, must conform with § 178.338 except as follows:

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

(ii) § 178.338-10 does not apply.

(iii) 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).

(iv) "DOT-E 6299" must replace the mark "MC 338".

(v) Corresponding drawings and calculations must be submitted to the OHMEA prior to first shipment.

b. TESTING -

(1) Each tank must be tested to 1-1/2 times the sum of the design pressure in psig plus 14.7 plus the static head, before being placed in service.

(2) Each portable tank must be reinspected and retested once every 5 years in accordance with § 180.205 as prescribed for DOT Specification DOT 51 portable tanks at 1-1/2 times the sum of the design pressure in psig plus 14.7 plus the static head.

c. OPERATIONAL CONTROLS -

(1) The time required between the loading of the tank and the subsequent unloading of the same tank at its final destination must not exceed the OWTT as determined by the applicable formula in paragraph 8.f.

(2) The tank must be filled by weight or must be equipped with one or more gauging devices which must indicate accurately the maximum permitted liquid level to provide a minimum of two percent outage below the inlet of the safety relief valve or the road relief valve under conditions of incipient opening of this valve with the tank in a level attitude. A fixed length dip tube, a fixed try cock line, or a differential pressure liquid level gauge is authorized as primary control for filling, other gauging devices, except gauge glasses, are authorized but may not be used as a primary control for filling.

In addition, nitrogen, oxygen and argon must be loaded and shipped as follows:

Maximum start to discharge pressure of the lowest set pressure relief valve	Maximum permitted filling density (Percent by weight)		
	Nitrogen	Oxygen	Argon
55 PSIG	71	102	125
250 PSIG	57	87	106

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. To determine the "One-way travel time" (OWTT) a measured holding time test must be performed with the tank charged with the intended commodity at the maximum loading temperature to be used in service and to a filling density corresponding to a 2 percent outage at the pressure level of

the lowest setting on the pressure relieving device. The equilibrium pressures and ambient temperatures must be recorded at 3-hour intervals until the desired holding time period is reached or the pressure level of the contents reaches the pressures at which the lowest pressure relieving device is set to open. Only actual test values may be used, extrapolation of test results is not permitted. The lapse for an ambient temperature of 85°F to obtain the jacket nameplate marked rated holding time (MRHT) may be equal to or less than the RHT. The one-way travel time (OWTT) must be determined as follows:

For shipments by highway:

(1) When unloading is completed at one location, the

$$\text{OWTT} = \frac{\text{MRHT Minus 24 hours}}{2}$$

(2) When unloading takes place at two or more locations, the

$$\text{OWTT} = \frac{\text{MRHT Minus 24 hours}}{4}$$

For shipments by cargo vessel:

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

Test data obtained from one of the above commodities may be used to establish the holding time and OWTT for any of the other authorized commodities.

g. MARKING - 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 6299," and the legend "Rated One-Way Travel Time _____ Hours." (Note this blank must be filled according to the results obtained from an actual test as described below).

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo vessel.

10. MODAL REQUIREMENTS:

a. For shipments by highway, the following procedure must be followed:

(1) Before transportation in an empty condition, each

tank must be emptied of liquid contents. In addition, the vapor pressure must be so reduced as to avoid the possibility of venting en route.

(2) Drivers must have been instructed as to necessary safeguards and proper procedure in the event of unusual delay, fire or accident.

(3) For each shipment, the driver must record the time and tank pressure at the start of each trip, before and after venting, and in addition:

(i) When unloading is completed at one location, the driver must record the pressure at least once every five hours and at destination.

(ii) When unloading takes place at two or more locations, the driver must record the pressure at least once every five hours, before and after each unloading and the total time lapse from loading to complete unloading.

If the trip log indicates that the actual holding time is less than 90% of the MRHT, the tank must be repaired as necessary to restore it to the MRHT value before returning it to service.

b. For shipment by water, stowage may be on deck or below deck. For under deck stowage, adequate ventilation must be provided to prevent an excess accumulation of the lading in any hold. Road relief valves on all tanks must be closed when transported aboard a cargo vessel.

c. A current copy of this exemption must be carried aboard each cargo vessel and motor vehicle 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:

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

- Persons operating under the terms of this exemption 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 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: Shipments or operations conducted under this exemption 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 exemption must notify the Associate Administrator for Hazardous Materials Safety -- OHMEA, in writing, of any incident involving a package, shipment or operation conducted under terms of this exemption.

Issued in Washington, D.C.:

for Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

AUG 3 2005
(DATE)

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 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: Olson/kah