U.S. Department
of Transportation
**Research and
Special Programs
Administration**

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

NOV 29 2001

DOT-E 10461
(SEVENTH REVISION)

EXPIRATION DATE: October 31, 2003

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Cryolor S.A., Vigy, France
(U.S. Agent: Air Liquide America Corporation
Houston, Texas)

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, mark, sale and use of a non-DOT specification vacuum insulated portable tank, in an ISO frame for transportation in commerce of Argon, refrigerated liquid. 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 hazardous 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 §§ 172.318 in that portable tanks are not authorized, except as specified herein.

5. BASIS: This exemption is based on the application of Cryolor S.A. dated October 29, 2001 and supplementary information dated November 16, 2001, 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
Argon, refrigerated liquid *(cryogenic liquid)*	2.2	UN1951	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 of the ASME Code and subparagraphs 1. and 2. of this paragraph. The portable tank is vacuum insulated and enclosed in an ISO type frame. Each tank has a maximum allowable working pressure of 132 psig (9.1 bar); design pressure of 161 psig (11.10 bar); design temperature of minus 320 °F (-196°C); and a water capacity of 3,887 U.S gallons (14,715 liters).

Each portable tank must conform to Cryolor's drawings No. AOH 88646/Rev. B, dated May 10, 1990; AOH 88642/Rev. A, dated March 30, 1990; AOH 88991/Rev. O, dated March 6, 1990 and other drawings referenced therein; design calculations, and U1-A forms on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA).

Each portable tank authorized under this exemption must conform with § 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 516 Gr.60 steel or equivalent steel for the outer jacket. Material for structural attachments is SA 36 or equivalent specification steel.

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

(e) Post-weld heat treatment is not required.

§ 178.338-6 *Manholes*

(a) Does not apply.

(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) * * *

§ 178.338-10 *Collision damage protection*

Does not apply.

§ 178.338-13 *Supports and anchoring*

[Add] The portable tank need not conform with § 178.338-13(b) or (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).

§ 178.338-18 *Marking*

Applies except that "DOT-E 10461" must replace the mark "MC-338".

b. TESTING - Each portable tank must be reinspected and retested once every five years in accordance with § 173.32(e) as prescribed for DOT Specification 51 portable tanks. The test pressure in the inner tank must be determined from one of the following formulas:

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

$$P_T = 1.25 \times [P_d + H_S + 14.7]$$

(ii) 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 prepared and shipped as required in § 173.318 as applicable for the lading.

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 expected elapsed time between the start and termination of travel.

3. 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 reduced holding time determined by this exemption.

4. 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-E 10461".

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 modifications or changes are made to the package 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 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.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel and cargo aircraft only.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this exemption. The shipper shall furnish a copy of this exemption to the air carrier before or at the time the shipment is tendered.

a. Portable tanks may not be transported in container-on-flat car (COFC) or trailer-on-flat car (TOFC) service except under conditions approved by the Associate Administrator for Safety, Federal Railroad Administration.

b. Shipments by cargo vessel must conform with the following:

(1) The package and its stowage must conform with § 176.76(g). The portable tank may not be overstowed 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 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 actual setting of the road relief valve.

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, Parts 171-180.
- 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 the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS:

a. 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.

b. The release of contents is not a reportable incident if the release is through a pressure controlling device set at 25 psig or less during shipment by motor vehicle.

Issued at Washington, D.C.

NOV 29 2001

(DATE)

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.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S. Department of Transportation, 400 7th Street, S.W., Washington, DC 20590-0001, Attention: Records Center, 202-366-5046.

PO: KFW