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

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

DOT-E 10614 (EXTENSION)
SIXTH REVISION December 30, 1993

DEC 9 1994

In accordance with 49 CFR 107.105 of the Department of Transportation (DOT) Hazardous Materials Regulations DOT-E 10614 is hereby extended for the party(ies) listed below by changing the expiration date in paragraph 10 to October 31, 1996. This change is effective from the issue date of this extension. All other terms of the exemption remain unchanged.

This extension applies only to party(ies) listed below based on the application(s) received in accordance with 49 CFR 107.105. This extension constitutes a necessary part of this exemption and must be attached to it.

DEC 9 1994

Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

(DATE)

Dist: FHWA USCG

EXEMPTION HOLDER	APPLICATION DATE
Tri-Gas, Inc. Irving, TX	October 25, 1994

ADVISORY

IF YOU ARE A HOLDER OF AN EXEMPTION THAT AUTHORIZES THE USE OF A PACKAGING WITH A MAXIMUM CAPACITY LESS THAN 450 L (119 GALLONS) OR A MAXIMUM NET MASS LESS THAN 400 KG (882 POUNDS), PLEASE BE ADVISED THAT YOUR EXEMPTION MAY NOT BE RENEWED BEYOND SEPTEMBER 30, 1996. IN ADDITION, NO NEW CONSTRUCTION OF PACKAGINGS WHICH FALL WITHIN THE NON-BULK CAPACITIES LISTED ABOVE ARE AUTHORIZED AFTER SEPTEMBER 30, 1994. THIS IS CONSISTENT WITH THE IMPLEMENTATION OF THE NEW PACKAGING REQUIREMENTS ADOPTED UNDER DOCKET HM-181. ANY APPLICATION SUBMITTED TO THIS OFFICE TO RENEW AN EXEMPTION BEYOND THE SEPTEMBER 30, 1996 DATE WILL BE DENIED UNLESS THE APPLICATION CONTAINS SUPPORTING INFORMATION TO JUSTIFY THE CONTINUATION OF THE EXEMPTION.

U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

DEC 30 1993

DOT-E 10614
(SIXTH REVISION)

1. TRI-GAS Inc., Irving, Texas, is hereby granted an exemption from certain provisions of this Department's Hazardous Materials Regulations to offer packages prescribed herein of nonflammable cryogenic liquids for transportation in commerce, subject to the limitations and special requirements specified herein. This exemption authorizes the use of vacuum insulated portable tanks for the transportation of liquid oxygen, liquid nitrogen, and liquid argon and provides no relief from any regulation other than as specifically stated.

2. BASIS. This exemption is based on an application from TRI-GAS Inc., dated November 15, 1993, submitted in accordance with 49 CFR 107.105.

3. HAZARDOUS MATERIALS (Descriptor and class). Oxygen refridgerated liquid UN 1073; Nitrogen, refrigerated liquid, UN 1977, Argon, refrigerated liquid, UN 1951, classed as Division 2.2 materials.

4. PROPER SHIPPING NAME (49 CFR 172.101). Nitrogen, refrigerated liquid (cryogenic liquid), Oxygen, refrigerated liquid (cryogenic liquid), or Argon, refrigerated liquid (cryogenic liquid), as appropriate.

5. REGULATIONS AFFECTED. 49 CFR 173.318, 176.76(h), 178.338.

6. MODES OF TRANSPORTATION AUTHORIZED. Cargo vessel and motor vehicle.

7. SAFETY CONTROL MEASURES. Packagings prescribed are non-DOT specification portable tanks, designed and constructed in accordance with Section VIII of the ASME Code and subparagraphs a. or b. of this paragraph. The portable tanks must be enclosed in an ISO type frame. The portable tanks must be vacuum-insulated. Design pressure may not exceed 250 psig. Design temperature must be -320°F. Water capacity may not exceed 3720 gallons. Tank material must be SA 240 Type 304 stainless steel for the inner tank; and HSLA steel for the outer jacket.

a. The portable tanks authorized are TRI-GAS Inc.'s tanks Model 3720 Unit No. 9003, Serial No. C 20584, Model 3720 Unit No. 9004, Serial No. 20684, and Model 3720 Unit No. 9005, Serial No.20784.

b. Each portable tank must conform to design drawings nos. D-42862 Rev 1., D-42852 Rev 1., and associated drawings submitted as part of TRI-GAS Inc.'s application on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA). ASME Certification U1-A form and a copy of current retest report for the portable tank must be on file with OHMEA before first shipment.

(1) Impact testing is not required for stainless steel materials.

(2) Section 178.338-10 does not apply.

(3) The portable tank need not conform with 49 CFR 178.338-13(b) and (c). The portable tank must meet the cleanliness provisions of 49 CFR 178.338-15 applicable for the shipment of oxygen.

c. Lifting lugs, framework and any anchoring to the inner tank, or to the tank jacket must conform with 49 CFR 178.338-13(a). A portable tank that meets the definition of "container" must meet the requirements of 49 CFR Parts 450 thru 453, and each design must be qualified in accordance with 49 CFR 178.270-13(c).

d. "DOT-E 10614" must replace the mark "MC-338".

8. SPECIAL PROVISIONS.

a. A copy of this exemption must be carried aboard each vessel and motor vehicle used to transport packages covered by this exemption.

b. Each portable tank must be reinspected and retested once every five years in accordance with 49 CFR §173.32(e) 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:

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

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. Each portable tank must be plainly marked "DOT-E 10614" on both sides near the middle, in letters at least two inches high on a contrasting background.

d. Each portable tank must be prepared and shipped as required in 49 CFR 173.318, as applicable for the lading.

e. Shipment by cargo vessel must conform with the following:

(1) The package must conform with 49 CFR 176.76(h). Portable tanks may be overstowed 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 exemption.

(2) 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.

(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 (pressure control) valve (PCV) set at a pressure lower than that prescribed for the (safety) pressure relief valve must be closed during transportation by cargo vessel, unless the OWTT is determined based on the setting of the PCV.

f. 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.

DEC 30 1993

g. 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 examination.

9. REPORTING REQUIREMENTS. Any incident involving loss of packaging contents or packaging failure must be reported to the Associate Administrator for Hazardous Materials Safety. 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 shipments by motor vehicle.

10. EXPIRATION DATE. December 31, 1994.

Issued at Washington, D.C.

J. Suzanne Hedgepeth

Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

DEC 30 1993
(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590. Attention: Exemptions Program.

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.

Dist: USCG, FHWA.