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

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

APR 8 1999

DOT-E 5604
(FOURTH REVISION)

EXPIRATION DATE: March 31, 2001

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: BOC Gases
Murray Hill, New Jersey

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the transportation in commerce of certain Division 2.2 gases in non-DOT specification insulated portable tanks. 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. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 176.30 and 178.338.

5. BASIS: This exemption is based on the application of BOC Gases dated March 18, 1999, 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
Helium, refrigerated liquid *(cryogenic liquid)*.	2.2	UN1963	N/A

7. SAFETY CONTROL MEASURES:

PACKAGING -

a. Packaging prescribed is an insulated non-DOT specification portable tank designed and constructed in accordance with Section VIII of the ASME Code. The portable tank is enclosed in an ISO type frame. The portable tank is vacuum-insulated with a supplemental liquid nitrogen shield. Design pressure is 157 PSIG for the internal tank, and 10 PSIG for the liquid nitrogen tank. Design temperature is -452 °F, for the inner tank and any part, valve or fitting that may come in contact with the lading; and -320 °F, for the liquid nitrogen tank and any part, valve or fitting that may come in contact with liquid nitrogen. Water capacity is 8,000 gallons, nominal for the inner tank. Tank material is SA 240 Type 304 stainless steel for the inner tank and the nitrogen tank; and SA 285 carbon steel for the outer jacket.

b. Each portable tank must conform to Gardner Cryogenics Drawing 1763A Revised May 1968, on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA). No new construction is authorized.

c. TESTING - Each portable tank must be reinspected and retested once every 5 years in accordance with § 173.32(e) as prescribed for DOT Specification 51 portable tanks at a pressure of 14.7 PSIG plus 1.25 times the sum of the design pressure and the static head.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this exemption who 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 reoffered for transportation in conformance with this exemption and the HMR.

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

c. Each portable tank must be plainly marked "DOT-E 5604" 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 § 173.318.

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

10. MODAL REQUIREMENTS:

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

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

(1) The package must conform with § 176.76(h).

(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 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 holding time was determined based on the setting of the pressure control valve.

c. No person may transport or offer for transportation 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.

d. 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 re-marked with the holding time determined by this examination.

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.

- 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 inform the AAHMS, in writing, of any incident involving the package and shipments made under the terms of this exemption.

Issued at Washington, D.C.:

Ann Mazzullo 4/8/99

Alan I. Roberts (DATE)
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.

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