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

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

MAR 18 2002

DOT-E 10031
(SEVENTH REVISION)

EXPIRATION DATE: February 29, 2004

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: MG Industries
Malvern, PA

(See Appendix A to this document for a list of additional grantees)

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the use of a non-DOT specification, insulated portable tank for liquefied helium. 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 § §§ 172.203(a), 173.315, 173.320, 176.30 and 176.76(g)(1) in that portable tanks are not authorized for cryogenic liquids, except as specified herein.

5. BASIS: This exemption is based on the application of MG Industries dated February 8, 2002, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Materials Description	**Hazard Class/ Division**	**Identification Number**	**Packing Group**
Helium, refrigerated liquid (*cryogenic liquid*)	2.2	UN1963	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is an insulated non-DOT specification portable tank designed and constructed in accordance with Section VIII of the ASME Code and subparagraph 7.a. of this exemption. 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 81 PSIG (MAWP = 64 PSIG) for the internal tank, and 23 PSIG (MAWP = 6 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 helium lading; and -320 °F, for the liquid nitrogen tank and any part, valve or fitting that may come in contact with liquid nitrogen. Nominal water capacity is 10,812 (U.S.) gallons for the inner tank and 385 (U.S.) gallons for the nitrogen tank. Tank material is SA 240 Type 304 stainless steel for the inner tank and the nitrogen tank; and SA 516 Gr.70 for the outer jacket.

Each portable tank must conform to Universal Cryogenics Corporation drawings cited below, and calculations and specifications on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA).

Q275-A-06 Rev A dated September 16, 1987,
Q275-A 51 Rev 0 dated September 9, 1987,
Q275-A-55 Rev A dated September 21, 1987,
Q275-B-01 Rev A dated September 11, 1987,
Q275-J-03 Rev 0 dated September 9, 1987,
Q275-L-05 Rev A dated September 10, 1987.

In addition, each tank must conform with § 178.338, except as follows:

(1) Impact testing is not required for stainless steels used for lading warmer than -425°F.

(2) § 178.338-10 does not apply.

(3) The portable tank need not conform with § 178.338-13(b) or (c). Lifting lugs, framework and any anchoring to the inner tank, the nitrogen shield tank or the tank jacket must conform with § 178.338-13(a). Portable tanks that meet the definition of "container" must meet the requirements of 49 CFR Parts 450 thru 453, and each design must be qualified in accordance with § 178.270-13(c).

b. 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 (in PSIG) of 14.7 plus one and one-fourth times the sum of the design pressure plus the static head.

c. OPERATIONAL CONTROLS -

(1) Each portable tank must be plainly marked "DOT-E 10031" on both sides near the middle, in letters at least two inches high on a contrasting background.

(2) Each portable tank must be prepared and shipped as required in § 173.318, as applicable for the lading.

(3) Shipments by cargo vessel must conform with the following:

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

(ii) 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.

(iii) A written record of the portable tank's pressure and ambient (outside) temperature at the following times must be prepared for each shipment.

(a) At the start of each trip;

(b) Immediately before and after any manual venting;

(c) At least every 24 hours; and

(d) At the destination point.

(4) Any lading pressure control valve or 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.

(5) 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.

(6) 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 exemption.

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 modification or change is made to the package or its contents 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. MARKING - "DOT-E 10031" must replace the mark "MC 338".

d. No new construction of the portable tanks manufactured under the terms of this exemption is authorized after January 31, 1995.

e. Shippers using the packaging covered by this exemption must comply with all provisions of this exemption, and all other applicable requirements contained in 49 CFR Parts 100-180.

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

10. MODAL REQUIREMENTS: No additional requirements other than those in the HMR.

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 in Washington, D.C.:

MAR 18 2002
(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.

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

MAR 18 2002

The following are hereby granted party status to this exemption based on their application(s) submitted in accordance with § 107.107 or § 107.109, as appropriate:

Company Name City/State	Application Date	Issue Date	Expiration Date
Air Products and Chemicals, Inc. Allentown, PA	Feb 4, 2002	MAR 18 2002	Feb 29, 2004
Praxair, Inc. Tonawanda, NY	Jul 25, 2000	8/28/2000	May 31, 2002

for Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety