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

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

MAR 27 2003

DOT-E 13215

EXPIRATION DATE: February 28, 2005

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Cryogenic Manufacturing and Repair, Inc.
Eagle Lake, Texas

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, mark, sale and use of a non-DOT specification insulated portable tank conforming with all regulations applicable to a DOT Specification MC-338 insulated cargo tank, except as specified herein, for the transportation in commerce of liquid nitrogen. 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 a non-DOT specification portable tank is authorized as specified herein.

5. BASIS: This exemption is based on the application of Cryogenic Manufacturing and Repair, Inc. dated December 9, 2002, submitted in accordance with § 107.105 and the public proceeding thereon.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description		
Proper Shipping Name	**Hazard Class/ Division**	**Identification Number**
Nitrogen, refrigerated liquid	2.2	UN1977

7. SAFETY CONTROL MEASURES:

a. PACKAGING -

(1) Packaging authorized is an insulated non-DOT specification portable tank designed and constructed in accordance with DOT Specification MC-338 cargo tank motor vehicle, except as modified herein. The portable tank is enclosed in an ISO type frame and is vacuum-insulated. Design pressure is in the range of 75 to 100 PSIG for the internal tank. Design temperature is -320°F for the inner tank and any part, valve or fitting that may come in contact with the lading. Tank material is SA 240 Type 304 for the inner tank and 43D 2540 carbon steel for the outer jacket. Water capacity may not exceed 2150 US gallons.

(2) Tanks must conform with one of the following three Wessington Cryogenics Ltd drawings:

DRG C/2506 dated 10/03/02

DRG C/2228 dated 28/06/02

DRG C/2529 dated 28/06/02

All tanks must conform with calculations, specifications and drawings on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA) and with § 178.338, except as follows:

(i) § 178.338-10 does not apply.

(ii) The portable tank need not conform with § 178.338-13(b) or (c). Lifting lugs, framework and any anchoring to the inner tank or the tank jacket must conform with § 178.338-13(a).

(iii) 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), even if used in domestic service.

(iv) Exemption number "DOT-E 13215" must replace the mark "MC-338" on the nameplate specified in § 178.338-18(a).

(3) At the time of delivery, the manufacturer of a portable tank must furnish to the owner of the tank, the tank manufacturer's data report as required by the ASME Code, and a certificate bearing the tank serial number stating that the portable tank conforms to the requirements of this exemption. For each portable tank the certificate must be signed by a responsible official of the manufacturer.

(4) For multiple stage construction, each manufacturer who performs a manufacturing operation on the portable tank or portion thereof must furnish to the succeeding manufacturer, at the time of delivery, a certificate covering the manufacturing operation performed by that manufacturer, and any certificates received from previous manufacturers. Each certificate must be signed by an official of the manufacturing firm responsible for the portion of the tank represented thereby. The final manufacturer must furnish the owner with all certificates.

b. TESTING - Each portable tank must be reinspected and retested once every five years in accordance with the procedure prescribed in § 173.32(e) for DOT Specification 51 portable tanks. The test pressure for the inner tank must 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 (the sum of the maximum allowable working pressure, liquid head and 14.7 psi)

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) Shipments by cargo vessel must conform with 49 CFR 176.76(g). The portable tank must be stowed on deck and may not be overstowed with other containers or freight. 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.

(3) No person may transport or offer for transport a portable tank containing liquid nitrogen unless the tank has a readable vacuum, at the gauge tube, of 200 microns or less.

(4) Each offeror must determine the actual vacuum level for each tank prior to shipment of the tank. If it is determined that the vacuum level of the tank is over 200 microns, with the vessel at cryogenic temperature, or the offeror can not obtain an accurate micron reading for any reason, the tank may not be refilled until the tank vacuum has been restored and the vacuum level is able to be read at the gauge tube, at a level of 200 microns or below.

(5) The manufacturer must determine the holding time and the MRHT of the first portable tank and must submit the results thereof to OHMEA prior to initial shipment.

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.

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

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or 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, 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 also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.

MAR 27 2003

Robert A. McGuire
Administrator for Associate
Hazardous Materials Safety

(DATE)

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: PTOlson