U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

DOT-E 10430 (EXTENSION)
ORIGINAL March 8, 1991

In accordance with 49 CFR 107.105 of the Department of Transportation (DOT) Hazardous Materials Regulations DOT-E 10430 is hereby extended for the party(ies) listed below by changing the expiration date in paragraph 10 to September 30, 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.

OCT 24 1994

(DATE)

for Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

Dist: FHWA FRA USCG

EXEMPTION HOLDER	APPLICATION DATE
M1 Engineering, Limited West Yorkshire, England (U.S. AGENT: W.R. Zanes & Co., of LA., Inc. New Orleans, LA)	September 26, 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.

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400 Seventh Street, S.W
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JUN 26 1998

DOT-E 10430
(FIRST REVISION)

EXPIRATION DATE: May 31, 2000

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: M1 Engineering Limited
Bradford, West Yorkshire, England
(US Agent: W. R. Zanes & Co. of LA Inc., New Orleans, LA)

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, mark, sale and use a vacuum insulated, non-DOT specification portable tank in an ISO frame for the transportation in commerce of certain refrigerated liquids. This exemption provides no relief from any Hazardous Materials Regulation 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, 176.76(g)(1).

5. BASIS: This exemption is based on the application of M1 Engineering Limited dated May 27, 1998, submitted in accordance with 49 CFR 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
Nitrogen, refrigerated liquid (cryogenic liquid)	2.2	UN1977	N/A
Oxygen, refrigerated liquid (cryogenic liquid)	2.2	UN1073	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 (a) and (b) of this paragraph. The portable tank is vacuum-insulated and enclosed in an ISO type frame. Each tank has a maximum allowable working pressure (MAWP) of 87 PSIG (6 bar), a design pressure of 106 psig (7.31 bar), a design temperature of -320 °F (-196°C), and a water capacity 5,019 U.S gallons (19,000 liters).

b. Each portable tank must conform to M1 Engineering Limited's drawings B491013/D dated January 1990 and other drawings referenced therein; B489455/C dated March 1990, other drawings referenced therein, design calculations, and U1-A forms on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA).

c. Each portable tank authorized under this exemption must conform with 49 CFR 178.338 except as follows:

(1) §178.338-2 (a): Tank construction material is SA 240 Type 304 austenitic stainless steel for the inner tank; and BS 1501 Pt.3- 304 stainless steel or equivalent steel for the outer jacket. Material for structural attachments is SA 36 or equivalent specification steel.

(2) §178.338-2 (e): Postweld heat treatment is not required.

(3) §178.338-6 (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.

(4) §178. 338-10: Does not apply.

(5) §178.338-13: 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 49 CFR 178.270-13(c).

(6) §178. 338-18: "DOT-E 10430" must replace the mark "MC 338".

d. TESTING - 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 for 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

e. OPERATIONAL CONTROLS -

1. 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 10430".

2. 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.

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

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

(a) The package and its stowage must conform with 49 CFR 176.76(g). The portable tank may not be overstowed with other containers or freight.

(b) 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.

(c) 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.

(d) 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 setting of the road relief valve.

5. 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.

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 remarked with the reduced holding time determined by this examination.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of 49 CFR 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 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, rail freight, cargo vessel.

10. MODAL REQUIREMENTS: A copy of this exemption must be carried aboard each cargo vessel and 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. Section 5101 et seq:

- All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.