OCT 8 1998

U.S. Department of Transportation

Research and Special Programs Administration

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

DOT-E 11196
(FIRST REVISION)

EXPIRATION DATE: May 31, 1998 (See Appendix A for PTE expiration date(s)

(FOR RENEWAL, SEE 49 CFR SECTION 107.105.)

1. GRANTEE: DHE Fabrication and Machining
Republic of South Africa
US Agent: OSNA Equipment Incorporated, Denver, CO

2. PURPOSE AND LIMITATION: This exemption authorizes the transportation in commerce of certain Division 2.1, 2.2 and 2.3 gases in non-DOT Specification portable tanks, mounted in ISO frames. This exemption provides no relief from any regulation other than as specifically stated herein.

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

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR Section 178.245-1(b)

5. BASIS. This exemption is based on the application of DHE Fabrication and Machining (Container Division) dated May 30, 1996, submitted in accordance with 49 CFR 107.105.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous materials description/proper shipping name	Hazard Class/ Division	Identification number	Packing Group
Ammonia, anhydrous, liquefied	2.3	UN1005	N/A
Butadienes, inhibited	2.1	UN1010	N/A
Butane	2.1	UN1011	N/A
Butylene	2.1	UN1012	N/A
Chlorodifluoromethane, R22	2.2	UN1018	N/A
Chloropentafluoroethane, R115	2.2	UN1020	N/A
Chlorotrifluoromethane	2.2	UN1022	N/A
Cyclopropane, liquefied	2.1	UN1027	N/A
Dichlorodifluoromethane, R12	2.2	UN1028	N/A
Difluoroethane, R152a	2.1	UN1030	N/A
Dimethylamine, anhydrous	2.1	UN1032	N/A
Dimethyl ether	2.1	UN1033	N/A
Ethylamine	2.1	UN1036	N/A
Ethyl chloride	2.1	UN1037	N/A
Isobutylene	2.1	UN1055	N/A
Methyl acetylene and propadiene mixtures, stabalized	2.1	UN1060	N/A
Methylamine, anhydrous	2.1	UN1061	N/A
Methyl chloride	2.1	UN1063	N/A
Methyl mercaptan	2.3	UN1064	N/A
Liquefied petroleum gas	2.1	UN1075	N/A
Propylene	2.1	UN1077	N/A
Trimethylamine, anhydrous	2.1	UN1083	N/A
Vinyl chloride, inhibited	2.1	UN1086	N/A
Vinyl methyl ether, inhibited	2.1	UN1087	N/A
Hexafluoropropylene, R1216	2.2	UN1858	N/A

Hazardous materials description/proper shipping name	Hazard Class/ Division	Identification number	Packing Group
Tetrafluoroethane, R134a, compressed gas, n.o.s.	2.2	UN1956	N/A
Isobutane or Isobutane mixtures	2.1	UN1969	N/A
Propane	2.1	UN1978	N/A
Chlorodifluoroethanes, R142	2.1	UN2517	N/A
Dichlorodifluoromethane and di-fluoroethane azeotropic mixture, R500	2.2	UN2602	M/A

7. PACKAGING AND SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification portable tank, mounted in an ISO frame, designed and constructed in accordance with DHE Fabrication and Machining specifications and drawings numbered FT21557B, A1/303-001/1, A1/303-001/4. Portable tanks must be designed and constructed in accordance with drawings, technical specifications, and calculations on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA), and in compliance with the following provisions:

i. Code:

A. Complies with DOT Specification 51 in all respects except openings may be located on the tank in areas other than on the top or at the end;

B. designed, constructed, and certified in accordance with the ASME Code and U stamped; and

C. IMO Type 5.

ii. Water capacity: 6,525 US gallons (24,700 Liters)

iii. ISO Frame: Length 20.0'; Width 8.0'; Height 8.5'

iv. Material - ASME SA-612 for shell and heads.

v. Tank (outside dia.) X (length) X (thickness)
Size (inches) 95.27" 237.4" 0.752"
Head Thickness - 0.697 inches
Weld Joint Efficiency - 1.0
Corrosion Allowance - 0.0

vi. Design pressure (psig) - 319 (22 bar)
Note: Design pressure means "maximum allowable working pressure (MAWP)" as used in the ASME Code.

Test pressure (psig) - 522 (36 bar)

vii. Openings - One (1) 18.465 inch diameter opening for the manhole on the top center of tank; one (1) 2.56 inch diameter opening for the vapor phase connection and one (1) 2.56 inch diameter opening for the liquid phase connection at the bottom of the tank; one (1) 6.299 inch diameter opening for one pressure relief device on the top of the tank; one (1) 2.09 inch diameter opening for Rochester gauge opening on head of vessel; and one (1) 0.75 inch diameter opening for pressure guage.

NOTE: Each bottom outlet valve must be provided with a shear section that meets the requirements of 49 CFR 178.337-12.

viii. Pressure Relief Device - One (1) - three inch diameter spring loaded pressure relief valve in series with an outboard of one (1) - three inch diameter rupture disc both set to open at 319 psig. Total relief valve capacity is 1,852,787 SCFH (14.57 cubic meters/sec) at 120% MAWP (382.8 psi).

ix. G-Loadings: Vertical down 2; Vertical up 2; Longitudinal 2; and Transverse 2.

x. Maximum Gross Weight: 74,800 pounds (34,000 kg)

xi. Maximum Commodity Weight: 53,131 pounds (24,100 kg)

xii. Tare Weight: Without baffles 21,826 pounds (9,900 kg)
With baffles 22,619 pounds (10,260 kg)
Baffles are optional.

xiii. Design Temperature Range: -40°C to +55°C
(-40°F @ 319 psi)

b. TESTING - Each tank must be retested at least once every five years in accordance with 49 CFR 173.32(e) as specified for a DOT specification 51 portable tank. The minimum test pressure is 522 psig (36 bar).

c. MARKING - Each portable tank must be marked in accordance with 49 CFR 173.24 and 173.32(e)(3). Each tank must be plainly marked on both sides near the middle, in letters at least two inches high on a contrasting background, "DOT-E 11196". The pressure relief valve must be marked with a start-to-discharge pressure in psig and a rated relief flow capacity in SCFH.

8. SPECIAL PROVISIONS.

a. Persons who receive the packages covered by this exemption may reoffer them for transportation provided no modifications or changes are made to the packages, all terms of this exemption are complied with and a current copy of this exemption is maintained at each facility from which such reoffering occurs.

b. 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 171-180.

c. Hydrostatic test certificates for each tank must be maintained by the owner or manufacturer at its principal business office and be made available to any representative of the DOT upon request.

d. No product may be shipped that has venting requirements exceeding 1,852,787 SCFH. The venting capacity required for each product must be determined by the flow formulas contained in the Compressed Gas Association's (CGA) Pamphlet S-1.2.

e. The tank must be filled by weight in accordance with the provisions of 49 CFR 173.315.

f. Each tank must be visually inspected prior to each trip to ensure that it has not been damaged on the previous trip.

g. "DOT-E 11196" must be stamped on the metal manufacturer's data plate on the line which reads "U.S. DOT Specification No."

9. MODES OF TRANSPORTATION AUTHORIZED. Motor vehicle, rail freight, and cargo vessel.

10. MODAL REQUIREMENTS:

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

b. Portable tanks may not be transported in container-on-flatcar (COFC) or trailer-on-flatcar (TOFC) service except under conditions approved by the Associate Administrator for Safety, Federal Railroad Administration.

c. Rear end protection for the motor vehicle must meet the requirements of 49 CFR 178.340-8(b) and 393.86.

d. Each portable tank must be secured to the motor vehicle in conformance with the requirements of 49 CFR

393.100 through 393.106.

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, 49 CFR Parts 171-180.
- Registration required by 49 CFR 107.601 et seq., when applicable.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect unless a regulation has been amended making the exemption no longer necessary.

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. (49 CFR 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 incidents involving the package and shipments made under the terms of this exemption.

Issued at Washington, D.C.:

Marilyn J. Morris October 8, 1996

for 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.

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