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

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

DOT-E 11313

FEB 3 1995

EXPIRATION DATE: December 31, 1996

(FOR RENEWAL, SEE 49 CFR 107.105.)

1. GRANTEE: Columbiana Texas Corporation, Gainesville, Texas.

2. PURPOSE AND LIMITATIONS: This exemption authorizes the grantee to manufacture, mark and sell non-DOT specification IMO Type 5 portable tanks to be used for the transportation in commerce of Division 2.1 and Division 2.2 materials. 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 Sections 173.315(a) and 178.245-1(b).

5. BASIS: This exemption is based on the application of Columbiana Texas Corporation dated August 18, 1994, and supplemental information dated December 13, 1994, submitted in accordance with 49 CFR 107.103 and the public proceeding thereon.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

| Hazardous materials description/ proper shipping name | Hazard Class/ Division | I.D. Number | Packaging Authorized (See Para 7) |
|---|---|---|---|
| Ammonia, anhydrous | 2.2 | UN1005 | A,B,C,D,E |
| Chlorodifluoromethane, R22 | 2.2 | UN1018 | A,B,C |
| Chloropentafluoroethane, R115 | 2.2 | UN1020 | A |
| Chlorotetrafluoroethane, R124 | 2.2 | UN1021 | A,B,C |

6. HAZARDOUS MATERIALS (49 CFR 172.101) (Continued):

| Hazardous materials description/ proper shipping name | Hazard Class/ Division | I.D. Number | Packaging Authorized (See Para 7) |
|---|---|---|---|
| Dichlorodifluoromethane, R12 | 2.2 | UN1028 | A,B,C |
| Dichloromonofluoromethane, R21 | 2.2 | UN1029 | A,B,C |
| Difluoroethane, R152a | 2.1 | UN1030 | A,B,c |
| Dimethyl ether | 2.1 | UN1033 | A,B,C,E |
| Ethylchloride | 2.1 | UN1037 | A,B,C,E |
| Methylchloride | 2.1 | UN1063 | A,E |
| Liquefied petroleum gas; butane; butadiene; propane, inhibited; classed as flammable gases | 2.1 | UN1075 | A,B,C,D,E |
| Trichlorotrifluoroethane, R113 Refrigerant gas, n.o.s. | 2.2 | UN1078 | A |
| Trifluorochloroethylene, R1113 | 2.1 | UN1082 | A,B,C |
| Vinylchloride | 2.1 | UN1086 | A,B,C,E |
| Hexafluoropropylene, R1216 | 2.2 | UN1858 | A |
| Trifluoroethene, R143a | 2.2 | UN1956 | C |
| Dichlorotetrafluoroethane, R114 | 2.2 | UN1958 | A |
| Chlorodifluoromethane and Chloropentafluoroethane mixture, R502 | 2.2 | UN1973 | A,B,C |
| Chlorodifluoroethane, R142 | 2.1 | UN2517 | A,B,C |
| Dichlorodifluoromethane and difluoroethane azeotropic mixture, R500 | 2.2 | UN2602 | A,B,C |
| Tetrafluoroethane, R134a | 2.2 | UN3159 | A,B,C |
| Pentafluoroethane, R125 | 2.2 | UN3220 | C |
| Trichlorofluoromethane, R11 | 2.2 | NA9188 | A,B,C |

7. PACKAGING(S) and SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings authorized are five designs of non-DOT specification steel portable tanks that meet all requirements of DOT Specification 51, including the ASME "U" stamp, except that the fill and discharge openings are located on the bottom of the tank, with the manway and pressure relief valve separately positioned and not grouped with the fill and discharge valves. The center point of the fill and discharge valve group of each tank is located at the bottom of the tank, inside a steel protective housing, which is further protected by an ISO frame. The five portable tank designs are identified by the following identification codes:

A B450/335
B B400/400
C B450/400
D B640/319
E B644/HP

The letter preceding each portable tank code corresponds with the packagings authorized for each hazardous material as stated in paragraph 6, table column 4, above. Each portable tank must be constructed in accordance with drawings, specifications and calculations on file with OHMEA and in compliance with the following provisions:

(i) **Code** - Portable tanks must comply with DOT Specification 51 in all respects except that the fill and discharge openings may be located on the bottom of the tank and the manway may be positioned separately and not grouped with the valves. For the purpose of this exemption, the bottom of the tank is defined as all points on or below the horizontal center line of the tank. The center point of the valve grouping is located in the bottom of the tank.

(ii) **Material** - SA-612 carbon steel.

(iii) **Tank Dimensions (inches) and Design Criteria -**

| Tank Design | Water Capacity Gallons | Outside Diameter Inches | Length Inches | Shell Thickness Inches | Head Thickness Inches |
|---|---|---|---|---|---|
| B450/335 | 4500 | 84.0" | 220" | 0.692" | 0.686 |
| B400/400 | 4000 | 84.0" | 182" | 0.825" | 0.817 |
| B450/400 | 4500 | 84.0" | 220" | 0.825" | 0.817 |
| B640/319 | 6400 | 94.482" | 236" | 0.741" | 0.735 |
| B644/HP | 6440 | 94.482" | 236" | 0.742" | 0.735 |

(iv) **Pressure and Venting Data -**

| Tank Design | Design Pressure (psig) | Test Pressure (psig) | Surface Area (Sq Ft) | PRV Setting (psi) | Total Relief Capacity (Note 3) (SCFH) | Maximum Relief Capacity Without Rupture Disc (SCFH) |
|---|---|---|---|---|---|---|
| B450/335 | 335 | 503 | 415 | 335 | 1336620 | 1485133 |
| B400/400 | 400 | 600 | 365 | 400 | 1586820 | 1763133 |
| B450/400 | 400 | 600 | 415 | 400 | 1586820 | 1763133 |
| B640/319 | 319 | 479 | 545 | 319 | 637511 | 708345 |
| B644/HP | 319 | 479 | 545 | 319 | 637511 | 708345 |

Notes: (1) Design pressure means "Maximum allowable working pressure" as used in the ASME Code.

(2) The venting capacity requirement for each product must be determined by the flow formulas contained in the Compressed Gas Association (CGA) Pamphlet S-1.2.

(3) Total Relief Capacity (shown in column 6 in the table above) is calculated with the restriction of a rupture disc, which is optional equipment.

(4) Maximum Relief Capacity is calculated without the restriction of an optional rupture disc. A portable tank is not permitted to have a rupture disc if the tank contains a material that has a venting capacity requirement higher than the Total Relief Capacity shown in column 6 in the table above.

(5) Pressure relief devices must be provided as follows:

Two 2-inch diameter spring loaded safety relief valves are provided for Tank Designs B450/335, B400/400 and B450/400.

One 3-inch diameter spring loaded safety relief valve is provided for Tank Designs B640/319 and B644/HP.

Each pressure relief valve must be marked with its maximum flow rate in SCFH. The total relief capacity for a tank may not be less than the Maximum Relief Capacity Without Rupture Disc shown in column 7 in the table above.

(iv) **Pressure and Venting Data -**

| Tank Design | Design Pressure (psig) | Test Pressure (psig) | Surface Area (Sq Ft) | PRV Setting (psi) | Total Relief Capacity (Note 3) (SCFH) | Maximum Relief Capacity Without Rupture Disc (SCFH) |
|---|---|---|---|---|---|---|
| B450/335 | 335 | 503 | 415 | 335 | 1336620 | 1485133 |
| B400/400 | 400 | 600 | 365 | 400 | 1586820 | 1763133 |
| B450/400 | 400 | 600 | 415 | 400 | 1586820 | 1763133 |
| B640/319 | 319 | 479 | 545 | 319 | 637511 | 708345 |
| B644/HP | 319 | 479 | 545 | 319 | 637511 | 708345 |

Notes: (1) Design pressure means "Maximum allowable working pressure" as used in the ASME Code.

(2) The venting capacity requirement for each product must be determined by the flow formulas contained in the Compressed Gas Association (CGA) Pamphlet S-1.2.

(3) Total Relief Capacity (shown in column 6 in the table above) is calculated with the restriction of a rupture disc, which is optional equipment.

(4) Maximum Relief Capacity is calculated without the restriction of an optional rupture disc. A portable tank is not permitted to have a rupture disc if the tank contains a material that has a venting capacity requirement higher than the Total Relief Capacity shown in column 6 in the table above.

(5) Pressure relief devices must be provided as follows:

Two 2-inch diameter spring loaded safety relief valves are provided for Tank Designs B450/335, B400/400 and B450/400.

One 3-inch diameter spring loaded safety relief valve is provided for Tank Designs B640/319 and B644/HP.

Each pressure relief valve must be marked with its maximum flow rate in SCFH. The total relief capacity for a tank may not be less than the Maximum Relief Capacity Without Rupture Disc shown in column 7 in the table above.

(v) **Design Weights -**

| Tank Design | Design Specific Gravity | Maximum Gross Weight (Pounds) | Maximum Commodity Weight (Pounds) | Tare Weight (Pounds) |
|---|---|---|---|---|
| B450/335 | | | | |
| Insulated | 1.29 | 67,200 | 48,510 | 18,690 |
| Uninsulated | 1.32 | 67,200 | 49,510 | 17,690 |
| B400/400 | | | | |
| Insulated | 1.44 | 67,200 | 48,100 | 19,100 |
| Uninsulated | 1.47 | 67,200 | 49,100 | 18,100 |
| B450/400 | | | | |
| Insulated | 1.25 | 67,200 | 46,762 | 20,438 |
| Uninsulated | 1.27 | 67,200 | 47,762 | 19,438 |
| B640/319 | | | | |
| Insulated | 0.81 | 67,200 | 43,330 | 23,870 |
| Uninsulated | 0.84 | 67,200 | 44,100 | 22,670 |
| B644/HP | | | | |
| Insulated | 0.81 | 67,200 | 43,400 | 23,800 |
| Uninsulated | 0.83 | 67,200 | 44,600 | 22,600 |

(vi) **Weld Joint Efficiency -** 1

(vii) **Corrosion Allowance -** 0.0

(viii) **G-Loadings -** Vertical down - 2 Vertical up - 2
Longitudinal - 2 Transverse - 2

(ix) **Design Temperature Range -** 40°F to 131°F

(x) **Openings -** The following openings are provided:

One opening for an 18-inch diameter manway on top or end of tank;
One opening for a 3-inch pressure relief valve <u>or</u> two openings for two 2-inch pressure relief valves on top of tank.
One opening for a 2-inch diameter vapor phase valve on the bottom of the tank.
One opening for a 2-inch diameter liquid phase valve on the bottom of the tank.

<u>Note</u>: Each bottom outlet valve must be provided with a shear section that meets the requirements of 49 CFR 178.337-12.

(xi) **Insulation -** Tank may be insulated (optional). Tank may be provided with a sunshield (optional).

(xii) **Baffles -** Optional.

b. TESTING - Each tank must be tested as required for DOT Specification 51 portable tanks in 49 CFR 178.245. Each tank must be inspected and retested once every five years in accordance with 49 CFR 173.32(e) as prescribed for DOT Specification 51 portable tanks.

c. MARKING - Each portable tank must be plainly marked on both sides near the middle, in letters and numerals at least two inches high on a contrasting background, "DOT-E 11313." Additionally, "DOT-E 11313" must be stamped on the manufacturer's data plate on the line which reads "U.S. DOT Specification No."

8. SPECIAL PROVISIONS:

a. Offerors for transportation of the hazardous materials specified in this exemption may use the packaging described in this exemption for the transportation of such hazardous materials so long as no modifications or changes are made to the packages, all terms of this exemption are complied with, and a copy of the current exemption is maintained at each facility from which such offering occurs.

b. 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 for a specific manufacturing facility.

c. A copy of this exemption, in its current status, must be maintained at each manufacturing facility at which this packaging is manufactured and must be made available to a DOT representative upon request.

d. 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.

e. A test report documenting a satisfactory ISO prototype test for each tank design must be on file with the OHMEA prior to the first shipment.

f. Hydrostatic test certificates for each tank must be maintained by the manufacturer and owner and made available upon request to any representative of the Department of Transportation.

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

h. Each tank must be visually inspected prior to shipment to ensure that it has not been damaged during loading.

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. Rear end protection for the motor vehicle must meet the requirements of 49 CFR 178.338-10(c) and 49 CFR 393.86.

c. Each portable tank must be secured to the motor vehicle in conformance with the requirements of 49 CFR 393.100 through 393.106.

d. 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.

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 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 also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued at Washington, D.C.

FEB 3 1995

Alan I. Roberts
Associate Administrator
for 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.

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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