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

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

APR 25 2002

DOT-E 11539
(FIRST REVISION)

EXPIRATION DATE: March 31, 2004

(FOR RENEWAL, SEE 49 CFR § 107.105)

1. GRANTEE: C-CAM International L.L.C.
Sand Springs, Oklahoma

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the manufacture, marking and sale of certain non-DOT specification IMO Type 5 portable tanks to be used for the transportation in commerce of Division 2.1, 2.2 and 2.3 materials. 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 § 173.315(a) in that non-DOT specification packaging is authorized, and § 178.245-1(b), except as specified herein.

5. BASIS: This exemption is based on the application of C-CAM International L.L.C. dated April 1, 2002, submitted in accordance with § 107.109 and supplement information dated April 23, 2002.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous materials description/ proper shipping name	**Hazard Class/ Division**	**I.D. Number**
Ammonia, anhydrous	2.3 Hazard Zone C	UN1005
Butadienes, stablizied	2.1	UN1010
Butane *also see* Petroleum gases, liquefied	2.1	UN1011
Butylene *also see* Petroleum gases, liquefied	2.1	UN1012
Chlorodifluorobromomethane, *or* Refrigerant gas R12B1	2.2	UN1974
1-Chloro-1,1-difluoroethane *or* Refrigerant gas R142	2.1	UN2517
Chlorodifluoromethane, *or* Refrigerant gas R22	2.2	UN1018
Chlorodifluoromethane and Chloropentafluoroethane mixture, R502 *with fixed boiling point, with approximately 49 percent* chlorodifluoromethane	2.2	UN1973
Chloropentafluoroethane, *or* Refrigerant gas R115	2.2	UN1020
1-Chloro-1,2,2,2,-tetrafluoroethane *or* Refrigerant gas R124	2.2	UN1021
1-Chloro-2,2,2-trifluoroethane *or* Refrigerant gas R133a	2.2	UN1983
Cyclopropane	2.1	UN1027
Dichlorodifluoromethane and difluoroethane azeotropic mixture, *or* Refrigerant gas R500 *with approximately 74 percent dichlorodifluoromethane*	2.2	UN2602
Dichlorodifluoromethane, *or* Refrigerant gas R12	2.2	UN1028

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Hazardous materials description/ proper shipping name	**Hazard Class/ Division**	**I.D. Number**
Dichloromonofluoromethane, *or* Refrigerant gas R21	2.2	UN1029
1,2-Dichloro-1,1, 2, 2-tetrafluoroethane, *or* Refrigerant gas R114	2.2	UN1958
1,1-Difluoroethane, *or* Refrigerant gas R152a	2.1	UN1030
Difluoromethane *or* Refrigerant gas R32	2.1	UN3252
Dimethyl ether	2.1	UN1033
Dimethylamine, anhydrous	2.1	UN1032
Ethylamine	2.1	UN1036
Ethylchloride	2.1	UN1037
Heptafluorpropane *or* Refrigerant gas R227	2.2	UN3296
Hexafluoropropylene, *or* Refrigerant gas R1216	2.2	UN1858
Isobutane *see also* Petroleum gases, liquefied	2.1	UN1969
Isobutylene	2.1	UN1055
Liquefied gas, n.o.s.	2.2	UN3163
Methyl bromide	2.3 Hazard Zone C	UN1062
Methylamine, anhydrous	2.1	UN1061
Methylchloride *or* refrigerant gas R40	2.1	UN1063
Octafluorocyclobutane, *or* Refrigerant gas RC318	2.2	UN1976
Octafluoropropane, *or* Refrigerant gas R218	2.2	UN2424
Pentafluoroethane, *or* Refrigerant gas R125	2.2	UN3220

Hazardous materials description/ proper shipping name	**Hazard Class/ Division**	**I.D. Number**
Petroleum gases liquefied *or* Liquefied petroleum gas	2.1	UN1075
Refrigerant gases, n.o.s.	2.2	UN1078
Propane *also see* Petroleum gases, liquified	2.1	UN1978
Propylene *also see* Petroleum gases, liquefied	2.1	UN1077
Sulfur dioxide,	2.3 Hazard Zone C	UN1079
1, 1, 1, 2-Tetrafluoroethane, *or* Refrigerant gas R134a	2.2	UN3159
Trifluorochloroethylene, stabilized	2.3 Hazard Zone C	UN1082
1,1,1-Trifluoroethane, compressed, *or* Refrigerant gas R143a	2.1	UN2035
Compressed gas, n.o.s.	2.2	UN1956
Trifluoromethane *or* Refrigerant gas R-23	2.2	UN1984
Trimethylamine, anhydrous	2.1	UN1083
Vinyl bromide, stabilized	2.1	UN1085
Vinyl methyl ether, stabilized	2.1	UN1087
Vinylchloride, stabilized *or* Vinyl chloride, stabilized	2.1	UN1086

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings authorized are three 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 or side 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 or side of the tank, inside a steel protective housing, which is further protected by an ISO frame. Each portable tank must be constructed in accordance with C-CAM Drawings GLP2438.1-GA, GA-153, and GA-198, specifications and calculations on file with the Office of Hazardous Materials Exemptions and Approvals 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 or side of the tank and the manway may be positioned separately and not grouped with the valves.

(ii) **Material** - SA612-N 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
GLP2438	6440	94.5	238	0.75	0.875
GGR1722	4550	84.0	212	0.75	0.875
GCGR1500	4150	81.0	224	1.00	1.00

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

Tank Design	Design Pressure (Note 1) (psig)	Test Pressure (psig)	Surface Area (Sq Ft)	PRV Setting (psi)	Total Relief Capacity (Note 2) (SCFH)
GLP2438	319	479	518	319	1,416,744
GGR1722	355	503	409	355	1,570,644
GCGR1500	500	750	324	500	2,190,780

Notes: (1) Design pressure means "Maximum Allowable Working Pressure" as used in the ASME Code.

(2) The venting capacity requirement for each material must be determined by the flow formulas contained in the Compressed Gas Association (CGA) Pamphlet S-1.2. For each tank design, two 3-inch diameter spring loaded safety relief valves, outboard and in series with a rupture disc set at design pressure, are provided.

(v) **Design Weights -**

Tank Design	Design Specific Gravity	Maximum Gross Weight (Pounds)	Maximum Commodity Weight (Pounds)	Tare Weight (Pounds)	Design Temperature Range
GLP2438	1.00	67,200	43,900	23,300	-22°F to 200°F
GGR1722	1.58	67,200	49,546	17,654	-40°F to 200°F
GCGR1500	1.40	67,200	45,800	21,400	-40°F to 200°F

(vi) **Weld Joint Efficiency -** 1.0

(vii) **Corrosion Allowance** - 0.0

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

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

Tank Design	Manway	Pressure Relief	Liquid Port (Bottom)	Vapor Port (Bottom)
GLP2438	18 inch	Two 3"	One 2"	One 1¼"
GGR1722	18 inch	One 3"	One 2"	One 1¼"
GCGR1500	18 inch	Two 3"	One 3"	One 3"

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

(x) **Insulation** - Tanks may be provided with a sunshield (optional). Additionally, tanks transporting Division 2.3 materials are insulated with 4 inches of fiberglass covered with a 22 gauge carbon or stainless steel jacketed in conformance with § 172.102 Special Provision B14.

(xi) **Baffles** - Optional.

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

c. OPERATIONAL CONTROLS - The vapor pressure (psig) of the lading at 115°F must not exceed the design pressure of the portable tank.

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.

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

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

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

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

i. MARKING -

(1) Each portable tank must be plainly marked on both sides near the middle, in letters and numbers at least two inches high on a contrasting background, "DOT-E 11539." Additionally, "DOT-E 11539" must be stamped on the manufacturer's data plate on the line which reads "U.S. DOT Specification No."

(2) Tanks containing materials poisonous by inhalation must be marked on two sides "Inhalation Hazard" as required by § 172.313.

(3) Each pressure relief valve must be marked with its set pressure and flow rate in SCFH.

j. Transportation of Division 2.1, (flammable gases) and Division 2.3 (gases which are poisonous by inhalation) are not authorized aboard cargo vessel unless specifically authorized in the Hazardous Materials Table (§ 172.101).

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

10. MODAL REQUIREMENTS: APR 25 2002

a. A current 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 § 178.338-10(c) and § 393.86.

c. Each portable tank must be secured to the motor vehicle in conformance with the requirements of §§ 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, 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 the 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 incidents involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:

Robert A. McGuire
Associate Administrator
for Hazardous Materials Safety

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(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/sln