



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

MAY 1 1 2004

DOT-E 11057
(FOURTH REVISION)

EXPIRATION DATE: April 30, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: U.S. Department of Defense
Fort Eustis, VA
2. PURPOSE AND LIMITATIONS:
 - a. This exemption authorizes the use of a non-DOT specification cylinder for the transportation in commerce of certain Division 2.2 gases. 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 §§ 173.304a and 175.3 in that the use of a non DOT specification package is not authorized, except as specified herein.
5. BASIS: This exemption is based on the U.S. Department of Defense's application dated March 2, 2004 submitted in accordance with § 107.109.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Compressed gases, n.o.s. (mixture of nitrogen and helium)	2.2	UN1956	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a welded non-DOT specification, nonrefillable, stainless steel cylinder, conforming with Conax Florida Corporation Drawing 1109-164 on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA), and with DOT Specification 39 (§ 178.65), except as follows:

§ 178.65(a) *Type, size, service pressure and test pressure.*

Cylinder must have a seamless shell with two end fittings butt welded using the plasma arc method.

(1) *Size limitation.* Maximum water capacity must be 30.6 cubic inches for a service pressure of 3,000 psig or less.

(2) *Test pressure.* The minimum test pressure must be 4,000 psig.

§ 178.65(b) *Material.* The cylinder must be constructed of steel.

(1) *Steel* The cylinder must be made of Type 304L stainless steel complying with Federal Specification QQ-S-766D and ASTM-A-269.

(2) Does not apply.

(3) and (4) * * *

§ 178.65(c) *Manufacture.*

(1) * * *

(2) The thickness at the point of closure of cylinders must be equal to at least the wall thickness of the cylindrical shell.

(3) Each cylinder must be subjected to a process treatment after welding by pressurizing to approximately 250% of the service pressure in a fixture which allows expansion to 2.0 inches and maintaining pressure for 60 seconds. Total and permanent expansion must be recorded and included in the inspector's report. The process treatment must be witnessed by the independent inspector.

(4) Welding or brazing for any purpose whatsoever is prohibited except that the attachment of the end fittings to the cylinder shell by butt welding using the plasma arc method per MIL-STD-8611 is authorized.

§ 178.65(d) *Wall thickness.*

* * *

(1) * * *

(2) The cylinder wall thickness will be measured after auto-frettage. The minimum acceptable thickness will be 0.042 inches.

§ 178.65(g) *Flattening tests.*

One finished cylinder out of each lot must be subjected to a flattening test.

(1) The flattening test is to be performed on a cylinder in the final expanded state, after it has been tested at test pressure.

(2) * * *

(3) The flattening must be between 60 degree included angle, wedge shaped knife edges rounded to a 0.5 inch radius.

(4) Flattening is required to six times the wall thickness of the cylinder without cracking.

(5) * * *

§ 178.65(i) *Marking.*

Applies except that each cylinder must be marked "DOT-E 11057" instead of "DOT 39".

b. TESTING:

Intergranular Corrosion Test. Cylinders representing the starting material and production lots must be subjected to test for resistance to intergranular corrosion" as prescribed in paragraph 4.5.2 of Federal Specification QQ-S-766D. Results of test must show material to be free from precipitated chrome carbides. Test must be performed as follows:

- (1) The first 3 cylinders produced from each heat, coil, sheet, plate or other unit of starting material; and
- (2) One cylinder from each lot of 200 cylinders. The test cylinder must be sectioned through the weld and the weld affected zone and tested for carbide precipitation. If test results of the first ten lots of each unit of starting material proved to be free from carbide precipitation, the sample size may be increased to one cylinder from each 500 manufactured.
- (3) A "lot" is defined as a group of 200 cylinders having identical size, design, construction, material, heat treatment, finish and quality.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this exemption who 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 reoffered for transportation in conformance with this exemption and the HMR.

b. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

d. The cylinders are limited to military life support systems only and are nonrefillable.

- e. The cylinders must be shipped in strong outside packaging in compliance with § 173.301(a)(9).
- f. New construction of cylinders after May 31, 2000 is not authorized.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo aircraft only.
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each aircraft used to transport packages covered by this exemption. The shipper must furnish a current copy of this exemption to the air carrier before or at the time the shipment is tendered.
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:
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
 - o Persons operating under the terms of this exemption must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o 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 also 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

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: ALB