



U.S. Department
of Transportation

Research and
Special Programs
Administration

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

MAR 17 2004

DOT-E 9830
(SEVENTH REVISION)

EXPIRATION DATE: February 28, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTER: Worthington Cylinder Corporation
Columbus, OH
2. PURPOSE AND LIMITATIONS:
 - a. This exemption authorizes the manufacture, mark, sale and use of a non-DOT specification cylinder conforming with all regulations applicable to a DOT specification 4BA cylinder, except as specified herein, for the transportation in commerce of the materials authorized by this exemption. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in the development of this exemptions 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 §§ 173.201, 173.202, 173.203, 173.302a(a), 173.304a(a) and (d) in that a non-DOT specification cylinder is not authorized except as specified herein.
5. BASIS: This exemption is based on the application of Worthington Cylinder Corporation dated January 23, 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
Division 2.1 and Division 2.2 materials authorized in DOT 4BA cylinders	2.1 or 2.2	As appropriate	N/A
Class 3 liquids authorized in DOT 4BA cylinders	3	As appropriate	I, II or III
Division 6.1 liquids authorized in DOT 4BA cylinders	6.1	As appropriate	I, II, or III

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification cylinder designed and fabricated in conformance with DOT 4BA specification (§§ 178.35 and 178.51) except as follows:

§ 178.35(f) *Marking.*

Applies except that the cylinders must be marked with "DOT-E 9830" in lieu of "DOT 4BA" followed by the service pressure.

§ 178.51(b) *Steel.*

The steel used must be ASTM A 240 Type 304L, or 316L stainless steel. Chemical compositions are as follows

Composition (%) for ASTM A240

<u>Type</u>	<u>304L</u>	<u>316L</u>
Carbon (Max.)	0.03	0.03
Manganese (Max.)	2.00	2.00
Phosphorus (Max.)	0.045	0.045

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Sulphur (Max.)	0.030	0.030
Silicon (Max.)	1.00	1.00
Nickel	8.0-11.0	10.0-14.0
Chromium	18.0-20.0	16.0-18.0
Molybdenum	----	2.0-3.0
Copper (Max.)	----	0.50
Iron	Balance	Balance

§ 178.51(f) *Wall thickness.*

(1) For outside diameters over 6" the minimum wall thickness shall be 0.078". In any case the minimum wall thickness shall be such that the calculated wall stress at minimum test pressure (§ 178.51(i)) shall not exceed 40,000 psi.

* * *

§ 178.51(g) *Heat treatment.*

Heat treatment is not required.

§ 178.51(i) *Hydrostatic test.*

(1) Each cylinder shall be hydrostatically or pneumatically pressurized to a minimum 2 times service pressure and held for 10 seconds at the test pressure and show no defects.

(2) One finished cylinder selected at random of each lot of 200 or less successively produced shall be hydrostatically pressurized to 4 times the marked service pressure and the pressure must be held for 60 seconds without bursting or leaking.

§ 178.51(k) *Elongation.*

Applies except elongation must be at least 10% for 2 X 6t specimens.

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b. TESTING - The retest must be performed by the cylinder manufacturer or a person holding a current retester's identification number issued by the Research and Special Programs Administration in accordance with § 180.209.

(1) Each cylinder which is used for a hazardous material non-corrosive to the cylinder must be reinspected and hydrostatically retested within 1 year of the manufacture date and then be requalified at least every 5 years. The retested cylinders must be subjected to an internal hydrostatic pressure equivalent to at least two times the marked service pressure with determination of expansion. The cylinders must be carefully examined under the test pressure and removed from service if leaks or other harmful defects exist.

(2) Each cylinder which is used for a hazardous material that is corrosive to the cylinder must be reinspected and hydrostatically retested within 1 year of the manufacture date and then be requalified at least every 5 years. The cylinders must be visually inspected internally and externally in accordance with CGA Pamphlets C-6. The hydrostatic retest method must only include the direct expansion or water jacket volumetric expansion test. Each cylinder must be subjected to a pressure of at least two times the marked service pressure.

c. OPERATIONAL CONTROLS - The quantity limitations of § 172.101, Column 9(B) apply to shipments made under this exemption.

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 material specified in paragraph 6, only in conformance with the conditions of this exemption.

b. A person who is not a holder of this exemption, but who receives a package covered by this exemption, may receive the package 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 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.
- f. Transportation of a Division 2.1 (flammable gases) is not authorized aboard cargo vessel or aircraft unless specifically authorized in the Hazardous Materials Table (§ 172.101).
- g. Transportation of Oxygen by aircraft is only authorized when in accordance with § 172.102(c)(2), Special Provision A52 and § 175.85(h) and (i).
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only. See paragraphs 7.c., and paragraphs 8.f and g.
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or aircraft used to transport packages covered by this exemption. The shipper shall 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, 49 CFR 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.

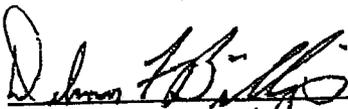
- o Registration required by § 107.601 et seq., when applicable.

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 displa of its number, when this 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, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.



JA
Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

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(DATE)

Address all inquiries to: Associate Administrator for Hazardou 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 legil reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: CWF/DL