



U.S. Department  
of Transportation

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

Research and  
Special Programs  
Administration

APR 9 2004

DOT-E 10320  
(FIFTH REVISION)

EXPIRATION DATE: March 31, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: 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 4BW cylinder, except as specified herein, for the transportation in commerce of the materials authorized by this exemption. The packaging as specified in the exemption is comparable to DOT Specification 8AL except for the steel shell. 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 § 173.303(a) in that non-DOT specification cylinders are 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.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Material Description	Hazard Class/ Division	Identi- fication Number	Packing Group
Acetylene, dissolved	2.1	UN1001	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packagings are non-DOT specification cylinders which comply with DOT Specification 4BW (§ 178.61) except as set forth in paragraphs 7(a)(1), 7(a)(2), 7(a)(3), and 7(a)(4) below. When completed and filled with porous material as specified herein, these cylinders are comparable to DOT Specification 8AL cylinders for acetylene.

(1) Each cylinder must comply with §§ 178.35, 178.60(p), 178.60(q), and 178.60(s) (except as amended by paragraph 7(b) below). Cylinders must have a service pressure of 250 psig. Test pressure must be at least three times the service pressure and the minimum burst pressure must be six times the service pressure.

(2) In § 178.61(f)(1), the formula used to calculate wall stress must be replaced by the following formula (see also Exhibit 4 of the January 5, 1990 application on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA)):

$$S = 3P(1.3D^2 + 0.4d^2) / [E(D^2 - d^2)]$$

(3) Cylinders may be no larger than 12 inches inside diameter and 42 inches overall height. The volume may not exceed 4200 cubic inches. Cylinders must be in accordance with the Worthington Cylinders of Canada drawings on file with the Office of Hazardous Materials Exemptions and Approvals.

(4) The minimum wall thickness for a cylinder must not be less than the thickness determined by the formula prescribed in Paragraph 7(a)(2) of this exemption and in no case less than 0.100 inches.

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- b. TESTING - Each owner of the cylinder used to transport acetylene must have the cylinder shell and the porous filler requalified in accordance with § 180.205.
- c. OPERATIONAL CONTROLS - Each cylinder must be marked in accordance with § 178.35(f) except that "DOT-E 10320" must be substituted for the DOT Specification.
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 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 Division 2.1 (flammable gas) is not authorized aboard cargo vessels unless specifically authorized in the Hazardous Materials Table (§ 172.101).
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel.

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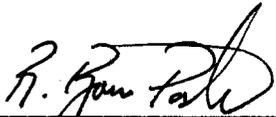
- 10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel used to transport packages covered by this exemption.
- 11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed 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, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.



Robert A. McGuire  
 Associate Administrator for  
 Hazardous Materials Safety

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(DATE)

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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: KFW/alb