



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

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

**MAR 9 2004**

DOT-E 11580  
(NINTH REVISION)

EXPIRATION DATE: February 28, 2005

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Columbiana Boiler Company, LLC  
(Former Grantee: The Columbiana Boiler Company)  
Columbiana, Ohio
2. PURPOSE AND LIMITATIONS:
  - a. This exemption authorizes the manufacture, mark, sale and use of non-DOT specification stainless steel cylinders conforming to all regulations applicable to DOT specification 4BW, except as specified herein, for use in transporting materials authorized under 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 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 §§ 173.40(a), 173.158(b), (g), and (h), 173.192(a), 173.201(c), 173.202(c), 173.203(c), 173.226(a), 173.227(a), 173.336 and 175.3 in that a non-DOT specification cylinder is not authorized, except as specified herein.

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5. BASIS: This exemption is based on the application of Columbiana Boiler Company dated November 25, 2002 and additional information dated April 1, 2003, submitted in accordance with § 107.105 and the public proceeding therein.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Toxic liquids, flammable, organic, n.o.s. (50% anhydrous hydrazine and 50% unsymmetrical dimethylhydrazine)	6.1	UN2929	I Hazard Zone B
Dimethylhydrazine, unsymmetrical	6.1	UN1163	I Hazard Zone B
Dinitrogen tetroxide	2.3	UN1067	Hazard Zone A
Hydrazine, anhydrous	8	UN2029	I
Methylhydrazine	6.1	UN1244	I Hazard Zone A
Nitric acid other than red fuming, with more than 70 percent nitric acid	8	UN2031	I
Nitric acid other than red fuming, with not more than 70 percent nitric acid	8	UN2031	II
Those materials authorized to be transported in DOT Specification 4BW cylinders	As Appropriate	As Appropriate	As Appropriate

The provisions of 49 CFR 172.101, Column 9B apply to air shipments made under the terms of this exemption.

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7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification steel cylinder conforming with the general requirements for specification cylinders (§ 178.35) and DOT Specification 4BW (§ 178.61), except as follows:

§ 178.35(b) *Inspection by whom and where.*

(1) Inspections and verifications must be performed by a third party. The third party inspector must either be a National Board Authorized Inspector or an inspector approved in writing by the Associate Administrator for Hazardous Materials Safety, in accordance with Subpart I of Part 107 of the Hazardous Materials Regulations.

(2) \* \* \*

§ 178.35(f) *Marking.*

(1) Marking on each cylinder stamped as follows:

(i) "DOT-E 11580" followed by the service pressure.

\* \* \*

§ 178.61(b) *Authorized steel.* Material of construction must be SA240 type 304L or type 316L stainless steel.

§ 178.61(d) *Manufacture.*

(1) \* \* \*

(2) Circumferential seam welds must be full penetration butt welds with full 100% radiograph inspection.

§ 178.61(g) *Heat treatment.* Cylinders need not be heat treated.

§178.61(i) *Hydrostatic test.*

(1), (2), (3), and (4) \* \* \*

(5) A one-time, first article hydrostatic test, to four times the marked service pressure without bursting, is required for initial qualification of each cylinder design type. For the purposes of this test, cylinders of the same wall thickness, diameter, and material grade are of the same design type.

§ 178.61(j) *Physical tests.* Physical tests are not required.

b. TESTING -

(1) For the transportation of dinitrogen tetroxide, liquefied and nitric acid, cylinders must be inspected and tested as required in NASA Kennedy Space Center Procurement Specification 81K05262.

(2) Cylinders must be requalified in accordance with the requirements of § 180.209 applicable to DOT 4BW cylinders.

c. OPERATIONAL CONTROLS -

(1) The transport pressure must be limited to 50 psig.

(2) The following additional requirements apply for the transportation of dinitrogen tetroxide, liquefied and nitric acid:

(i) Cylinders must be in conformance with NASA Kennedy Space Center Procurement Specification 81K05262;

(ii) Cylinders must be in conformance with § 173.40 except as follows:

(A) § 173.40(c)(1). Connections must be straight threads with controlled root radius straight threads (thread form symbol UNJ) in accordance with Military Specification MIL-S-8879. Female ports must be UNJ straight threads and must meet Military Standard MS33649. The sealing gasket must be

polytetrafluoro- ethylene preformed packing per Military Standard MS9956. Preformed packing must be deformed in assembly only once; reassembly must require a new preformed packing; and

(B) § 173.40(c)(2). Valves must be quarter turn ball valves with secondary stem containment stem seals of a NASA approved design. Prior to filling, or at a minimum frequency of one year, a bubble leak check must be performed on all mechanical joints at a minimum of 200 psig. Prior to cylinder refill, or at a five-year frequency, whichever is greater, valves must have all softgood materials (such as seats, packing, and o-rings) replaced, valves must be cleaned, and valves must be leak-tested at rated pressure at all joints and across the seat.

(iii) Cylinders may not be equipped with safety relief devices. Cylinders must be equipped with a detachable protective housing for the loading and unloading valves.

(3) Manufacturing, testing, and inspection of prescribed cylinders must be in accordance with The Columbiana Boiler Company Quality Assurance Manual on file with the Office of Hazardous Materials Exemptions and Approvals.

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 modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.

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- 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 gases) and Division 2.3 (toxic gases which are poisonous by inhalation) are 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 8(f) and (g) for restrictions).
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this exemption. The shipper shall furnish a 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.

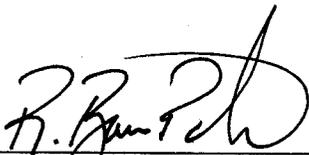
- o Registration required by § 107.601 et seq., when applicable.

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

Issued in Washington, D.C.:



*fa* 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: CWF/AM

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