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

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

MAY 8 2003

DOT-E 4884
(EIGHTEENTH REVISION)

EXPIRATION DATE: January 31, 2005

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Praxair, Inc.
Danbury, CT

(See Appendix A of this exemption for a list of additional grantees)

2. PURPOSE AND LIMITATION: This exemption authorizes the transportation in commerce of certain Class 8 and Division 2.1, 2.2, 2.3 and 4.3 materials prescribed in paragraph 6 of this exemption in non-DOT specification cylinders. This exemption provides no relief from any regulation other than as specifically stated herein.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.201, 173.202, 173.302, 173.304, 173.323, 175.3 in that non-DOT specification cylinders are not authorized, except as specified herein.

5. BASIS: This exemption is based on the application of Praxair, Inc. dated April 17, 2003, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Ammonia, Anhydrous	2.2	UN1005	N/A
Boron Trichloride	2.3	UN1741	N/A
Chlorine Trifluoride	2.3	UN1749	N/A
Dichlorosilane	2.3	UN2189	N/A
Ethylene oxide	2.3	UN1040	N/A
Liquefied and non-liquefied compressed gases authorized for DOT Specification 4BW cylinders	2.1 or 2.2	As appro-priate	N/A
Silicon Tetrachloride	8	UN1818	II
Trichlorosilane	4.3	UN1295	I

7. PACKAGING AND SAFETY CONTROL MEASURES:

a. Packaging prescribed is a non-DOT specification steel cylinder conforming with DOT Specification 4BW (§ 178.61) except as follows:

§ 178.61(b)- *Authorized steel*

The material of construction must be ASTM A240 Type 304, Type 316 or Type 316L stainless steel. The tensile strength measured from a specimen taken from a completed cylinder may not exceed 95,000 psi. Tensile tests must be performed as specified in § 178.61(l).

§ 178.61(g)- *Heat treatment*

The cylinders do not have to be heat treated.

§ 178.61(j)- *Physical tests*

Applies except that specimens must be taken from one cylinder not heat treated.

§ 178.61(o) - *Marking*

Applies except that each cylinder must be marked "DOT-E 4884" in lieu of "DOT 4BW".

b. TESTING - Cylinders must be requalified in accordance with the requirements of § 180.209 as applicable to the DOT 4BW cylinder.

c. OPERATIONAL CONTROLS -

(1) Cylinders used for the transportation of dichlorosilane, boron trichloride, and chlorine trifluoride must be fabricated from type 316 or type 316L stainless steel and be equipped with a combination rupture disc-fusible element type of pressure relief device. The minimum burst pressure of the rupture disc must be 250 psig and the minimum melting temperature of the fusible material must be 165°F. Additionally, each cylinder must conform with one of the following:

(i) Each cylinder must have a nominal water capacity not exceeding 90 pounds, a nominal inside diameter of 8.625 inches or an outside diameter of 9.0 inches, and a nominal wall thickness of 0.090 inch; or

(ii) Each cylinder must have a nominal water capacity of 1,000 pounds, a nominal outside diameter of 29.75 inches, and a nominal wall thickness of 0.175 inch. Each cylinder must be overpacked as shown in Union Carbide Corporation, Linde Division drawings PSG-A-1258 and PSG-B-1260 on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA).

(2) Each cylinder, having nominal water capacity of 1,000 pounds used to transport Division 2.1 (flammable gases) by cargo vessel, must be equipped with a spring loaded reclosing pressure relief valve. The relief valve must be designed to relieve at a pressure not less than 75 percent nor more than 100 percent of the cylinder's minimum required test pressure, and must have sufficient capacity to limit cylinder pressure to 150 percent of its design pressure.

(3) Each cylinder used for the transportation of ethylene oxide may not have a capacity exceeding 115 liters (30 gallons). Each cylinder must be equipped with safety devices of the fusible plug type with threaded straight bore orifice, with a yield temperature of 157° to 170° F, having a minimum vent area of 0.0055 square inch per pound of water capacity for packagings not over 1-gallon capacity and 0.0012 square inch per pound of water capacity for all packagings over 1-gallon capacity. Each cylinder must be tested for leakage at a pressure of at least 15 psig with an inert gas before each refilling. Fillings must be such that the packaging will not be liquid full at 185° F. Pressurizing valves must be provided for all packaging over one gallon capacity. Educator tubes must be provided for all packagings over 5-gallon capacity. Cylinders having a water capacity in excess of one gallon must be insulated.

(4) Each cylinder used for the transportation of ammonia must have a minimum service pressure of 480 psig.

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 modifications or changes are made to the package 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.

c. Packages specified herein marked "DOT SP 4884" prior to the issuance of this exemption may be transported under the terms of this exemption.

d. Shipments by air are subject to the restrictions and quantity limitations of § 172.101.

e. The following additional requirements apply to the transportation of dichlorosilane, boron trichloride and chlorine trifluoride:

(1) Dichlorosilane, boron trichloride, and chlorine trifluoride are limited to transportation by motor vehicle and cargo vessel.

(2) For water transportation, the packagings must be stowed "on deck" only, as far away from crew's quarters, other normally manned spaces and air intakes as reasonably practical.

(3) When shipping packagings described in this exemption without a secondary overpack, the shipper must load the material and block and brace the material for transportation in accordance with a prepared plan, which precludes stacking (double decking).

(4) When shipments are made by contract carrier the freight container must be sealed. When shipments are made by private carrier the packages must be moved in an upright position and securely fastened. Intermediate pickups or deliveries are authorized when transported by private carrier within a 75-mile radius of a shipping point provided the other requirements of this exemption and the HMR are met and the packages are not removed from the vehicle while the intermediate pickups or deliveries are made.

Shipments by "stake body" motor vehicles must be exclusive use vehicles carrying no other cargo with the load properly blocked and braced.

(5) When shipping overpacked packagings described in this exemption, the overpack must be as specified in § 173.25. The inside packaging must be isolated from the overpack by a shock-mitigating, non-reactive material. There must be a minimum of two inches of cushioning material around the body of the inner packaging, and at least three inches on the top and bottom, between the inner packaging and the overpack.

(6) In addition to the requirements of §§ 171.15 and 171.16, the OHMEA, must be notified of any incident involving damage to the packaging or loss of contents of material shipped under this exemption. The OHMEA, must be advised of the causes of the incident and any remedial action taken, as a result of the incident as soon as practical after its occurrence

(7) The OHMEA, must be advised annually, within 30 days after the end of the calendar year, of the shipping experience of material covered by this approval. Failure to comply may result in immediate suspension of this exemption.

f. Transportation of Division 2.1(flammable gases) and Division 2.3 (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 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. (See paragraph 8(e) of this exemption on modal restrictions for certain materials.)

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 incident involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:

MAY 8 2003

Robert A. McGuire (DATE)
for Associate Administrator
for Hazardous Materials Safety

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.

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The following are hereby granted party status to this exemption based on their application(s) submitted in accordance with § 107.107 or § 107.109, as appropriate:

Company Name City/State	Application Date	Issue Date	Expiration Date
AERIFORM Corporation Houston, TX	4/30/2003	MAY 14 2003	1/31/2005
Air Products and Chemicals, Inc. Allentown, PA	3/3/2003	3/13/2003	1/31/2005
Airgas, Inc. Cheyenne, WY	3/16/2003	4/3/2003	1/31/2005
Balchem Corporation Slate Hill, NY	1/29/2003	2/24/2003	1/31/2005
Boc Gases Murray Hill, NJ	2/13/2003	4/3/2003	1/31/2005
Gas Tech Inc. Hillside, IL	5/25/2001	7/17/2001	6/30/2003
Matheson Tri-Gas, Inc. East Rutherford, NJ	3/13/2003 and 4/18/2003	5/8/2003	1/31/2005
Praxair Distribution Southeast, LLC Tequesta, FL	4/1/2003	5/8/2003	1/31/2005
Praxair Distribution, Inc. Tonawanda, NY	4/17/2003	5/8/2003	1/31/2005
Scott Specialty Gases Plumsteadville, PA	4/7/2003	5/8/2003	1/31/2005
Union Carbide Corp. South Charleston, WV	4/24/2003	5/8/2003	1/31/2005

Ann Mazzullo

per Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety