

November 17, 2006



U.S. Department
of Transportation

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

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 12988
(THIRD REVISION)

EXPIRATION DATE: October 31, 2010

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Air Products and Chemicals, Inc.
Allentown, PA
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of a non-DOT specification cylinder conforming with all regulations applicable to a DOT Specification 110A multi-unit tank car tank, except as specified herein, for the transportation in commerce of the material authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
 - b. The safety analyses performed in development of this special permit 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 §§ 173.304 and 179.300 in that a non-DOT specification welded cylinder is not authorized except as specified herein.
5. BASIS: This special permit is based on the application of Air Products and Chemicals, Inc. dated November 2, 2006 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
Hydrogen chloride, anhydrous	2.3	UN1050	Hazard Zone C

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a non-DOT specification cylinder designed, manufactured, and tested in accordance with Air Products and Chemicals, Inc. (APCI) drawing number TK5-845.01, Rev. d2, the supporting documentation on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) and with DOT Specification 110A (§ 179.300) except as specified herein and meeting the following requirements:

(1) Cylinder must be manufactured using equipment and processes adequate to ensure that each cylinder produced conforms to the requirements of this special permit.

(2) The cylinder has a: maximum outside diameter (nominal) of 900 mm (35.4 inches); maximum height of 2,210 mm (87 inches); and maximum water volume of 1000 liters.

(3) Material of construction must meet the ASTM A-516-70 or P355NL1.

(4) The minimum thickness after forming of the body shells must be 20 mm (0.787 inch).

(5) The welded joint efficiency is 1.0.

(6) Each cylinder head must be one piece formed of seamless construction and must be full penetration fusion welded to the shell.

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(7) All welding, weld procedures, weld performance qualifications, postweld heat treatment procedures, and operators used to fabricate a cylinder under this special permit must be in accordance with the American Society of Mechanical Engineers (ASME), Boiler and Pressure Vessel Code, Section VIII, Division 1 and approved by an inspection agency that is approved by the OHMSPA.

(8) Cylinder valves and fittings must be protected from any damage which may result in a leak during transportation.

(9) Valves for venting, loading and unloading must comply with the requirements of § 179.300-13.

b. TESTING -

(1) Design Qualification:

(i) Upon initiation of production, production on new tooling, modification of the production process or change in the design, one cylinder taken at random from the first 10 finished vessels, must be hydrostatically pressurized to a minimum burst pressure 240 bar (3480 psi) without rupture or leakage.

(ii) One cylinder taken at random from the first 10 finished vessels, must have tensile tests performed on specimens taken from each head, the body section and across the body seam. Two weld bend specimens must be taken from the body seam. All specimens are to be prepared and tested in accordance with ASME, Section VIII, Division 1. Tensile values and elongation values must not be less than that specified in § 179.300-7. Bend specimens must show no evidence of cracking.

(2) Production Testing:

(i) One cylinder from each lot of 200 consecutively produced must be tested to the minimum burst pressure without rupture or leakage. Additionally, when production has been suspended

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for more than 30 days, one cylinder taken at random from the first 30 finished vessels must be tested to the minimum burst pressure without rupture or leakage. All other cylinders must be hydrostatically tested to a test pressure of 120 Bar (1740 psi) in a water-jacket, or direct expansion or other suitable method, and operated so as to obtain accurate data. Alternate methods of testing must be approved in writing by the OHMSPA. The pressure gauge must permit readings to an accuracy of 1 percent. The expansion gauge must permit readings of total volumetric expansion to an accuracy either of 1 percent or 0.1 cubic centimeter.

(A) Pressure must be maintained at test pressure for at least 30 seconds and sufficiently longer to ensure complete expansion. Any internal pressure applied after heat treatment and prior to the official test may not exceed 90 percent of the test pressure.

(B) Permanent volumetric expansion may not exceed 10 percent of the total volumetric expansion at test pressure.

(ii) The longitudinal shell joints and head to body shell girth joints must be 100% radiographed on each cylinder. Radiographic records for each cylinder must be maintained by the manufacturer for 15 years after the date of manufacture.

(iii) Tensile tests and check analysis must be performed on each heat of material before it may be released for production.

(3) Periodic retest and inspection - Each cylinder must be retested and inspected in accordance with § 180.519 as specified for DOT Specification 110A1000-W. The retest and reinspection must be performed by a facility which holds a current retester identification number issued by the Associate Administrator for Hazardous Materials Safety AAHMS.

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c. MANUFACTURE - The manufacturer of a cylinder under this special permit must secure an approval in accordance with the provisions of 49 CFR Part 107, Subpart H that apply.

d. INSPECTION - Compliance with the requirements of § 178.35 is required prior to production of a cylinder under this special permit.

e. REPAIR - All repairs to a cylinder authorized by this special permit must be performed under the direct guidance of the original manufacturer and supervision of the inspection agency approved by OHMSPA. The repairs must be certified by the original manufacturer and be submitted to the OHMSPA.

f. OPERATIONAL CONTROLS -

(1) The filling ratio must be such that the settled pressure at 65°C does not exceed the test pressure of the cylinder (120 bar).

(2) Each cylinder must remain in dedicated product service for its entire life.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

b. A person who is not a holder of this special permit, but receives a package covered by this special permit, may reoffer it for transportation provided no modification or change is made to the package and it is offered for transportation in conformance with this special permit and the HMR.

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

d. Each packaging manufactured under the authority of this special permit must be marked with the DOT registered Approval number issued by the Office of Hazardous Materials

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Special Permits and Approvals for a specific manufacturing facility in accordance with the Approval Requirements stated in paragraph 7c.

e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.

f. A cylinder manufactured under this special permit must be in conformance with Air Products and Chemical, Inc. (APCI) drawing number TK5-845.01, Rev. d1 except that whenever a provision of this special permit is in conflict with the drawing, APCI must comply with the conditions of this special permit and make appropriate revisions to the drawing(s). Revisions to drawings must be prepared by the manufacturer and be reviewed by the approved inspection agency. Later drawings and revisions are considered a part of this special permit when requested by the approved inspection agency and approved in by OHMSPA.

g. Each cylinder must be marked by stamping permanently and plainly in letters and figures at least 9.525 mm (3/8 inch) high into the metal of valve end chime as follows:

DOT-SP 12988/120 Bar
516/WC XXXXXX
DOT Registration Approval Number/Serial No.
Inspection Agency Registered Mark/Test Date

Note: Variations to the required marking must be approved in writing by the Associate Administrator for Hazardous Materials Safety.

h. OHMSPA may require the testing under prescribed conditions of any cylinder when probable cause appears for suspecting that a cylinder is in an unsafe operating condition in accordance with the requirements specified in § 180.509(b).

i. Any cylinder not used for the transport of the hazardous materials authorized under this special permit for a period of 1 year or more must be successfully retested and inspected in accordance with § 180.519 as specified for DOT 110A1000-W prior to being returned to hazardous material transportation service.

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j. Packagings permanently marked 'DOT-E 12988', prior to October 1, 2007 may continue to be used under this special permit for the remaining service life of the packaging or until the special permit is no longer valid. Packagings marked on or after October 1, 2007 must be marked 'DOT-SP 12988'.

k. Shipping papers displaying 'DOT-E 12988' may continue to be used until October 1, 2007, provided the special permit remains valid.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight and cargo vessel.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each motor vehicle and cargo vessel used to transport packages covered by this special permit.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit 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 special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit 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 special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

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12. REPORTING REQUIREMENTS:

a. Air Products and Chemicals, Inc. must report and fully describe all repairs made to cylinders authorized by this special permit on an annual basis to OHMSPA.

b. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Robert A. McGuire
Associate Administrator
for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: MToughiry/sln