

June 10, 2015



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 8757
(NINETEENTH REVISION)

EXPIRATION DATE: April 30, 2018

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Milton Roy-YZ Systems
Ivyland, PA
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification stainless steel cylinders conforming with all regulations applicable to a DOT Specification 3A cylinder, except as specified herein, for the transportation in commerce of the materials authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - 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 §§ 173.201(c), 173.202(c), 173.203(c), 173.302a(a)(1), and 173.304a(a)(1) in that a non-DOT specification cylinder is not authorized except as specified herein; and § 180.205 in that a retest is not required.
5. BASIS: This special permit is based on the application of Milton Roy-YZ Systems dated April 20, 2015, submitted in accordance with § 107.105, and the public proceeding thereon.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
1,2-Dichloro-1,1,2,2- Tetrafluoroethane or Refrigerant gas R114	2.2	UN1958	N/A
Air, compressed	2.2	UN1002	N/A
Ammonia solutions, <i>relative density less than 0.888 and 0.957 at 15 degrees C in water, with more 35 percent but not more than 50 percent ammonia</i>	2.2	UN2073	N/A
Butane	2.1	UN1011	N/A
Carbon dioxide	2.2	UN1013	N/A
Compressed gas, flammable, n.o.s. (Crude oil under pressure)	2.1	UN1954	N/A
Compressed gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone A, B, C, or D*</i>	2.3	UN1953	N/A
Compressed gas, toxic, n.o.s. <i>Inhalation Hazard Zone D</i>	2.3	UN1955	N/A
Dichlorodifluoromethane or Refrigerant gas R 12	2.2	UN1028	N/A
Ethane	2.1	UN1035	N/A
Gasoline	3	UN1203	II
Hexanes	3	UN1208	II
Helium, compressed	2.2	UN1046	N/A

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Heptanes	3	UN1206	II
Hydrocarbon gas mixture, liquefied, n.o.s.	2.1	UN1965	N/A
Hydrocarbon gas mixture, compressed, n.o.s.	2.1	UN1964	N/A
Hydrocarbons, liquid, n.o.s.	3	UN3295	As appropriate
Isobutane	2.1	UN1969	N/A
Isopropanol or Isopropyl alcohol	3	UN1219	II
Kerosene	3	UN1223	III
Liquefied gas, toxic, flammable, n.o.s.*	2.3	UN3160	N/A
Liquefied gas, flammable, n.o.s.	2.1	UN3161	N/A
Liquefied gas, n.o.s.	2.2	UN3163	N/A
Methane, compressed or Natural gas, compressed (<i>with high methane content</i>)	2.1	UN1971	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Oil gas, compressed	2.3	UN1071	N/A
Pentanes	3	UN1265	I, II

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Petroleum crude oil	3	UN1267	As appropriate
Petroleum gases, liquefied or Liquefied petroleum gas	2.1	UN1075	N/A
Petroleum distillates, n.o.s. or Petroleum products, n.o.s.	3	UN1268	I
Propane	2.1	UN1978	N/A

* Applicable parts of § 173.40 must be complied with when transporting this material.

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a stainless steel non-DOT specification cylinder, constructed from seamless stainless steel tubing, with flanged flat head end closures at each end restrained by six tie rods, and containing a piston which forms two pressure chambers. The cylinder must conform with YZ System's drawing 5A-0032, Rev. 6, or drawing 5A-0086, Rev. 4, calculations on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD) and with the DOT-3A Specification (§§ 178.35 and 178.36), except as follows:

§ 178.35(b) *Inspections and analyses.*

Chemical analyses and tests as specified must be made within the United States unless otherwise approved in writing by the Associate Administrator, in accordance with § 107.807. Certification of changes to the original cylinder designs (Model DS or DS9) must be performed by an independent inspection agency (IIA) approved in writing by the Associate Administrator, in accordance with § 107.803(a). The IIA certification must include a statement that the cylinder

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design meets all the requirements of this special permit. Once the IIA certifies a cylinder design change, inspections and verifications required during production may be carried out by a manufacturer's inspector.

§ 178.35(e) *Safety devices.*

Each head must be equipped with a safety relief device. Safety devices and other connections, must be as required or authorized by the appropriate specification, and comply with §§ 180.205(a) and 173.301.

§ 178.35(f) *Markings.*

Applies except cylinders must be marked "DOT-SP 8757 1800" or "DOT-SP 8757 3600" for Model DS and DS9, respectively.

§ 178.35(g) *Inspectors report.*

(Added) The inspector's report form may be revised to accommodate the tests required by this special permit.

(Added) A copy of the inspector's report on the first lot of cylinders produced must be submitted to the OHMSAPD prior to the first shipment.

§ 178.36(a) *Type, size and service pressure.*

(1) Model DS piston style receptacle has flat heads on each end restrained with tie rods which are secured by nuts at both ends. The maximum volume may not exceed 1,000 cc. The maximum service pressure must be 1,800 psig. The dimensions are as follows:

Maximum outside diameter: 2.005 inches
Maximum length: 29 inches long
Minimum side wall thickness: 0.110 inch

(2) Model DS9 piston style receptacle has flat heads on each end restrained with tie rods which are secured by nuts at both ends. The maximum volume may not exceed 1000 cc. The maximum service pressure is 3,600 psig. The dimensions are as follows:

Maximum outside diameter: 2.005 inches
Maximum length: 29 inches long
Minimum side wall thickness: 0.110 inch

§ 178.36(b) *Steel.*

(1) For "DOT-SP 8757 1800":

All cylinder components must be type 304 or 316 stainless steel.

(2) For "DOT-SP 8757 3600":

All cylinder components must be type 316 stainless steel or Nitronic 50 (UNS20910).

§ 178.36(g) *Heat treatment.*

The completed cylinders need not be heat treated.

§ 178.36(i) *Hydrostatic test.*

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

(4) Cylinders must be tested as follows:

(i) Each compartment of each piston style receptacle must be subjected to a pneumatic test of at least 500 psig without leakage. If the cylinder fails this test, it must be rejected.

(ii) Each cylinder (seamless tube with end caps but without pistons, and with tie bolts) must be hydrostatically tested to at least 3,000 psig in the case of cylinders with a marked service pressure of 1,800 psi, or 6,000 psig in the case of cylinders with a marked service pressure of 3,600 psi and show no defect.

(iii) In addition, one cylinder (seamless tube with end caps with tie bolts, if applicable, but without pistons,) from each lot must be pressurized to failure. Rate of pressurization may not exceed 200 psi per second.

(A) A "lot" is defined as the quantity of pressure vessels fabricated from the same heat of steel, manufactured by the same process and heat treated in the same equipment under same conditions of time,

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temperature and atmosphere and may not exceed a quantity of 500. The burst test must be performed on each lot of cylinders produced or every six months whichever occurs first.

(B) The pressure at which the cylinder fails to hold test pressure must be recorded. This pressure may not be less than 5,000 psi and 10,000 psi respectively for the 1800 psi and 3600 psi service pressure cylinders.

(C) The size of the cylinder tested will be based on the size that had the greatest production during the previous 6 months or 500 cylinders.

(D) If cylinder failure is determined to be due to gasket performance, the cylinder may be requalified, if it is rebuilt per manufacturers specifications and retested. Failure of a rebuilt cylinder due to gasket performance shall be cause of rejection of the gasketing; however, the cylinder may be requalified at a later date once the manufacturer has determined the gasket attribute causing the initial failure, and has taken appropriate quality control actions to correct the problem as evidenced by successful documentation of same and satisfactory testing of the cylinder as outlined above.

(E) If any cylinder fails this test by other than gasket performance, the entire lot must be rejected.

§ 178.36(j) *Flattening test.*

The tube body of one cylinder from each lot of 500 or less that has passed the test prescribed in § 178.36(i)(4)(ii) of this special permit must be flattened to at least 6 times wall thickness without cracking.

§ 178.36(m) *Leakage test.*

Not applicable; however, the requirements of § 178.36(i) and 178.36(j) above apply.

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b. TESTING - Each cylinder must be visually reinspected at least once a year for deterioration of seals, scratches, dents and gouges. Components that are deteriorated or damaged must be replaced by factory specified parts as shown on YZ drawings 5A-0032, Rev. 5 and 5A-0086, Rev. 3 or drawings referenced thereon. Components may be replaced by the factory or user, observing Tie Rod Nut tightening torque values shown on the above drawings. Annual reinspection/repair must be in accordance with instructions on file with the Approvals and Permits Division.

c. OPERATIONAL CONTROLS -

(1) At least once a year, the end caps, tie rods, and cylinder must be thoroughly cleaned with an appropriate solvent recommended by the manufacturer.

(2) The cylinder may be used only for materials that are being transported for purposes of analytical testing.

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 either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by OHMSAPD for a specific manufacturing facility.

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- 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. No modifications may be made to the cylinder which would affect its performance and its compliance with the requirements of this special permit until such modifications have been reviewed, tested and certified by an Independent Inspection Agency (IIA) as meeting the requirements of this special permit.
 - g. If the Associate Administrator or the IIA deems it necessary, the IIA may perform periodic inspections of the manufacturer's facility.
 - h. The IIA's design certification must include test results and documents related to the cylinder design approval. A copy of the design certification must be maintained at each facility where the cylinder is manufactured and by the IIA for a period of 15 years from the date of completion of the design certification.
 - i. For cases where an internal coating, not shown on the drawings on file with OHMSAPD, is required prior to filling the coating must be compatible with the material to be filled. The coating must not affect the cylinder properties.
 - j. Transportation of Division 2.1 materials (flammable gases) and Division 2.3 materials (gases which are toxic by inhalation) are not authorized aboard cargo vessel or aircraft unless specifically authorized in the Hazardous Materials Table (§ 172.101).
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only (see restrictions in paragraph 8.j. above).
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a current copy of this special permit 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 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, 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.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)- "The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. 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 Dr. Magdy El-Sibaie
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: SS/SG