

March 4, 2016



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 11378  
(TENTH REVISION)

**EXPIRATION DATE: October 31, 2018**

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: National Aeronautics and Space Administration (NASA)  
Washington, D.C.
2. PURPOSE AND LIMITATION:
  - a. This special permit authorizes the use of stainless steel non-DOT specification cylinders conforming to all regulations applicable to DOT specification 4BW, except as specified herein, for transporting materials authorized under this special permit. This special permit provides no relief from any Hazardous Materials Regulation (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.
  - c. Party status will not be granted to this special permit.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.40(a), 173.201, 173.226, and 173.227 only in that the prescribed cylinders are not authorized, except as specified herein, and § 173.40(c) in that alternative closures are authorized.
5. BASIS: This special permit is based on the application of National Aeronautics and Space Administration dated January 15, 2016, submitted in accordance with § 107.105.

March 4, 2016

6. HAZARDOUS MATERIALS (49 CFR 172.101):

| <b>Hazardous Materials Description</b>   |                               |                              |                       |
|--|-------------------------------|------------------------------|-----------------------|
| <b>Proper Shipping Name</b>  | <b>Hazard Class/ Division</b> | <b>Identification Number</b> | <b>Packing Group</b>  |
| Dimethylhydrazine, unsymmetrical   | 6.1                           | UN1163                       | I<br>Hazard<br>Zone B |
| Hydrazine, anhydrous or<br>Hydrazine aqueous solutions <i>with more than 64 percent hydrazine, by mass</i>   | 8                             | UN2029                       | I                     |
| Methylhydrazine  | 6.1                           | UN1244                       | I<br>Hazard<br>Zone A |
| Toxic by inhalation liquid, flammable, corrosive, N.O.S. <i>with an inhalation toxicity lower than or equal to 200 ml/m3 and saturated vapor concentration greater than or equal to 500 LC50</i> | 6.1                           | UN3488                       | I<br>Hazard<br>Zone A |

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings prescribed are non-DOT specification 5 and 30 gallon stainless steel cylinders which were designed, manufactured, and tested according to ASME Boiler and Pressure Vessel Code Section VIII for lethal substances. Cylinders must be constructed in conformance with NASA Kennedy Space Center procurement specification 81K04002 and with DOT specification 4BW (§§ 178.35 and 178.61) except as follows:

§ 178.35(a)(2) *Inspection by whom and where.*

Inspections and verifications must have been performed by a National Board Authorized Inspector.

§ 178.35(e) *Safety relief devices.*

**March 4, 2016**

Cylinders may not be equipped with safety relief devices.

§ 178.35(f) *Markings.*

Applies except that each cylinder be marked with "DOT-SP 11378" instead of "DOT-4BW".

§ 178.61(b) *Authorized steel.*

- (1) Material of construction must be SA240 type 304L.
- (2) Heads are torispherical in shape. The knuckle radius must be equal to 6% of the inside crown radius and the inside crown radius must be equal to the outside diameter of the skirt.

§ 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) The first finished cylinder out of each lot of 500 or less successively produced must be hydrostatically tested to 4 times service pressure without bursting.

§178.61(j) *Physical tests.*

Physical specimen tests are not required.

Prescribed packagings must be in conformance with § 173.40 except as follows:

§ 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.

**March 4, 2016**

Female ports must be UNJ straight threads and must meet Military Standard MS33649. The sealing gasket must be polytetraflouroethylene preformed packing per Military Standard MS9956 or ethylene propylene rubber preformed packing per NAS1613, Aerospace Industries Association of America Inc. MS9956 preformed packing must be deformed in assembly only once and any reassembly requires a new preformed packing.

§ 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 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.

b. TESTING - Cylinders must be retested in accordance with the requirements of § 180.205 applicable to DOT 4BW cylinders.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this special permit who receives a package covered by this special permit 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 special permit and the HMR.

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

c. No new construction of packagings authorized under this special permit is authorized.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo vessel.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel or motor vehicle used to transport packages covered by this special permit.

**March 4, 2016**

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.

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

Continuation of DOT-SP 11378 (10<sup>th</sup> Rev.)

**March 4, 2016**

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](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: AS/SG