

July 24, 2013



U.S. Department  
of Transportation

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

**Pipeline and Hazardous  
Materials Safety Administration**

DOT-SP 15493  
(FIRST REVISION)

**EXPIRATION DATE: June 30, 2017**

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Carleton Technologies Inc. dba Cobham Mission Systems Division  
Orchard Park, NY
2. PURPOSE AND LIMITATIONS:
  - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification cylinder conforming to all regulations applicable to a DOT specification 39, except as specified herein, for the transportation in commerce of a Division 2.2 material. 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. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.302a in that a non-DOT specification cylinder is not authorized, except as provided herein.
5. BASIS: This special permit is based on the application of Carleton Technologies Inc. dated July 9, 2013, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Helium, compressed	2.2	UN1046	N/A

**NOTE:** For the purpose of this exemption, a gas cylinder, system or component which contains a quantity of pyrotechnic materials must be classed and approved as provided for in § 173.56. If the pyrotechnic material augments the volume of the gas in the cylinder, or in any way enhances the performance of the compressed gas, the device must be tested in the same configuration as when shipped.

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings prescribed are non-DOT specification non-refillable welded stainless steel cylinders equipped with Division 1.4S pyrotechnic pressure relief devices. The cylinders and the assembled gas storage system must be in conformance with Carleton Technologies Inc.'s drawings B43956 dated October 3, 2000 and B43957 dated November 29, 2000 on file with the Approval and Permits Division. The cylinders must be in conformance with DOT Specification 39 (§§ 178.35 and 178.65) except as follows:

§ 178.65(a) *Type, size, service pressure and test pressure.* Welded, or brazed stainless steel shells consisting of cylindrical or spherical halves.

(1) *Size limitation.* Maximum water capacity may not exceed 6 cubic inches with a maximum service pressure of 10,200 psig at 73<sup>0</sup>F or 20 cubic inches with a maximum service pressure of 15,910 psig at 73<sup>0</sup>F.

(2) *Test pressure.* The minimum test pressures are 11,500 and 16,700 psig respectively for the 6 and 20 cubic inch cylinders.

\* \* \* \* \*

§ 178.65(b) *Material*. The cylinder must be constructed of PH13-8Mo H1025 stainless steel.

§ 178.65(c) *Manufacture*.

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

(4) Welding/brazing procedures and operators must be in accordance with CGA Pamphlet C-3 or MIL-STD-2219 and MIL-B-7883. Inspection of welds must be in accordance with MIL-STD-453, MIL-STD-6866 and MIL-STD-1907.

§ 178.65(f) *Pressure tests*.

(1) Each cylinder (6 and 20 cubic inch capacity) must be tested at an internal pressure of at least test pressure, and must be held at that pressure for at least 30 seconds.

(2) One cylinder taken from beginning of each lot must be hydrostatically tested to failure. The cylinder may be a complete assembly or individual bottles with a simulated housing and mating cylinder which replicates the complete assembly. The entire lot must be rejected (see 49 CFR paragraph 178.65(h)) if:

(i) A failure occurs at a gauge pressure less than 23,000 psig (6 cubic inch capacity) or 36,000 (20 cubic inch capacity);

\* \* \*

(3) A "lot" is defined as the quantity of pressure vessels fabricated from the same material, manufactured by same process and heat treated in the same equipment under same conditions of time, temperature and atmosphere and shall not exceed a quantity of 500.

§ 178.65(g) *Flattening test*.

(1) One sample ring representative of the cylinder must accompany each lot. The sample ring must be from the same material and be subjected to the same heat treatment as the lot of cylinders.

(2) The sample ring representative of the cylinder may be flattened. The sample ring may not include the heat affected zone or any weld.

(3) (Add) Flattening between flat plates is authorized. Flattening must continue until test specimen fails.

(4) Sample rings may not crack when flattened so that their outer surfaces are not more than 15 times wall thickness apart.

The failure point must be recorded in the inspector's test report as multiples of the cylinder wall thickness.

(5) If any sample ring cracks when subjected to the specified flattening test, the lot of cylinders represented by the test must be rejected (see 49 CFR §178.65(h)).

§ 178.65(i) *Markings.*

\* \* \*

(2)(i) Each cylinder must be marked "DOT-E 15493" in lieu of "DOT-39".

(2)(viii) does not apply.

(3) \* \* \*. For example:  
DOT-SP 15493 NRC 9400/14700 M \* \* \* \*.

b. TESTING - Prototype packagings must have been qualified under the qualification program as described in the application prior to initial shipment. Each completely charged cylinder must be leak tested to ensure a maximum leakage rate of  $1 \times 10^{-6}$  scc/sec is not exceeded.

c. OPERATIONAL CONTROLS -

(1) A copy of the inspectors report required by § 178.35(g) for the first lot of cylinders must be submitted to the Approval and Permits Division prior to first shipment.

(2) The cylinder must be shipped in strong outside packagings in accordance with § 173.301(a)(9).

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 packaging covered by this special permit, may reoffer it for transportation provided no modification or change is made to the packaging 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 the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

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

9. MODES OF TRANSPORTATION AUTHORIZED: Motor Vehicle, Cargo aircraft, Rail Freight.

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 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, 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

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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 -- OHMSPA, 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 Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

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: Majors:dl