April 20, 2011

U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety Administration**

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

DOT-SP 11025
(NINETH REVISION)

EXPIRATION DATE: March 31, 2015

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: MASS Systems, Inc.
A Unit of Ameron Global, Inc.
Baldwin Park, CA

2. PURPOSE AND LIMITATIONS:

a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification cylinders conforming with all regulations applicable to a DOT Specification 3HT cylinder, except as specified herein, for the transportation in commerce of the materials listed in paragraph 6 below. 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 §§ 173.302a(a)(2) and 173.5 in that a non-DOT specification cylinder is not authorized, except as specified herein.

5. BASIS: This special permit is based on the application of MASS Systems, Inc. dated September 27, 2010 submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi- fication Number**	**Packing Group**
Air, compressed	2.2	UN1002	N/A
Compressed gas, n.o.s. (Nitrogen gas with up to 30% carbon dioxide)	2.2	UN1956	N/A
Helium, compressed	2.2	UN1046	N/A
Nitrogen, compressed	2.2	UN1066	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a welded austenitic stainless steel non-DOT specification cylinder conforming with MASS Systems Inc.'s drawings on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) and with DOT Specification 3HT (§ 178.44), except as follows:

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

Welded sphere (two seamless hemispheres) circumferentially welded cylinder (2 seamless drawn shells), or one piece drawn cylinder with welded fittings, with volume not over 200 cubic inches water and a maximum service pressure of 3,800 psig.

§ 178.44(b) *Authorized steel.*

Type ARMCO Nitronic 40 (21-6-9) stainless steel with the following analysis:

Carbon	0.040 max
Manganese	8.00/10.00
Phosphorus	0.060 max
Sulfur	0.030 max
Silicon	1.00 max
Chromium	19.00/21.50

Nickel	5.50/7.50
Nitrogen	0.15/0.40

§ 178.44(d) *Manufacture*.

(Added) Each container must be subjected to a process treatment after welding and before stress relieving. Process treatment must consist of hydrostatic pressurization at a pressure (maintained for at least 3 minutes) of at least 100% but not more than 110% of prescribed test pressure. The process treatment must be witnessed by the independent inspector.

§ 178.44(e) *Welding or Brazing*.

(Added) Only welding as prescribed in § 178.44(a) of this special permit is authorized. All pressure welds must be 100 percent radiographed after hydrostatic test.

§ 178.44(f) *Wall thickness*.

(1) Minimum wall thickness for any cylinder must be 0.050 inch. The minimum wall thickness must be such that the wall stress at the minimum specified test pressure must not exceed 75 percent of the minimum tensile strength of the stainless steel and must not be over 105,000 psi.

(2) and (3) * * *

(4) Calculations for spheres must be made by the formula:

$$S = PD/4tE$$

where

E = 0.85 (weld efficiency factor which must be applied in the girth weld area and heat zones. Zones must extend a distance of 6 times wall thickness from the center of the weld.)

E = 1.0 (for all other areas)

§ 178.44(g) *Heat treatment*.

The hemispheres and half cylinders may be stress relieved or annealed for forming. Welded containers

must be stress relieved at a temperature of 900°F +/- 25° for one hour. Stress relieving is to be done after process treatment and before hydrostatic test.

§ 178.44(j) *Cycling test*.

(1) * * *

(2) Cycle test on each lot is not required.

(3) N/A

(4) * * *

§ 178.44(m) *Physical test*.

Physical tests not required.

§ 178.44(n) *Magnetic particle inspection*.

Magnetic particle inspection not required. Instead, each cylinder must be inspected using apparatus and procedures for liquid penetrant examination in accordance with ASTM E-165-65. Inspection must be performed externally on the finished cylinder after hydrostatic test. Evidence of discontinuities, which in the opinion of the independent inspector may appreciably weaken or decrease the durability for the cylinder, must be cause for rejection.

§ 178.44(p) *Acceptable results of tests*.

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

(4) Cycling: The design must be qualified by cycling three cylinders from zero to service pressure at a rate not to exceed ten cycles per minute to at least 50,000 pressurizations without evidence of distortion or failure.

§ 178.44(r) *Marking*.

Applies except that instead of "DOT-3HT", cylinders must be marked "DOT-SP 11025" followed by the service pressure.

§ 178.44(s) *Inspector's report*.

Inspector's report must be appropriately modified to

reflect identification and compliance with this special permit.

b. TESTING - Cylinders must be retested in accordance with § 180.209 as prescribed for DOT-3HT cylinders.

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 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 package is manufactured under this special permit. It must be made available to a DOT representative upon request.

f. Cylinders must be shipped in strong outside packagings in conformance with § 173.301(a)(9).

g. A cylinder is not authorized 20 years after the date of manufacture.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo aircraft only, and passenger-carrying aircraft.

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

    - All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, Parts 171-180.

    - 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.

    - 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 the 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: KFW/sln