U.S. Department
of Transportation
**Research and
Special Programs
Administration**

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

JUL 31 2002

DOT-E 12132
(THIRD REVISION)

EXPIRATION DATE: **June 30, 2004**

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Carleton Technologies, Inc.
Orchard Park, NY

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, mark, sale and use of a missile gas storage system consisting of a non-refillable, non-DOT specification cylinder equipped with a pyrotechnic relief device. The cylinder must conform with all regulations applicable to a DOT Specification 39 cylinder, except as specified herein, for the transportation in commerce of the materials authorized by this exemption. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. The safety analyses performed in development of this exemption 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 §§ 173.302(a)(1) and 175.3 in that a non-DOT specification cylinder is not an authorized packaging, except as specified herein.

5. BASIS: This exemption is based on the application of Carleton Technologies, Inc. dated July 1, 2002, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Material Description	Hazard Class/ Division	Identi-fication Number	Packing Group
Argon, compressed	2.2	UN1006	N/A

Note: A missile gas storage 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 - The packaging is described as a missile gas storage system and consists of a non-DOT specification non-refillable welded stainless steel cylinder equipped with a Division 1.4S pyrotechnic pressure relief device. The device begins releasing pressure at a maximum temperature of 365°F, corresponding to a maximum pressure of 12,800 psig. The packaging must conform with Carleton Technologies Inc.'s drawing B42235, technical specifications and performance data on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA), and must be fabricated in accordance with DOT Specification 39 cylinder (§ 178.65) except as follows:

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

(1) Maximum size is 8.0 cubic inches and maximum service pressure is 6,600 psig.

(2) * * *

§ 178.65(b) *Material.*

The cylinder must be constructed of 17-7PH stainless steel.

§ 178.65(c) *Manufacture.*

(4) Welding procedures and operation must be qualified in accordance with MIL-STD-2219.

§ 178.65(f) *Pressure tests.*

(1) Each cylinder must be tested at an internal pressure of at least 9,900 psig and must be held at that pressure for at least 30 seconds.

(2) * * *

(ii) A failure initiates in a braze, a weld, or a heat affected zone at a pressure less than 16,500 psi.

(3) A "lot" is defined as the quantity of cylinders successively produced per production shift having identical size, design, construction, material, heat treatment, finish and quality, and may not exceed a quantity of 250.

§ 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) Flattening between flat plates is authorized.

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

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

§ 178.65(i) *Markings.*

(2)(i) Each cylinder must be marked "DOT-E 12132" in lieu of "DOT-39".

b. <u>OPERATIONAL CONTROLS</u>:

(1) All welded joints must be 100% radiographically examined in accordance with MIL-STD-453.

(2) A copy of the inspector's report required by § 178.35(g) for the first lot of cylinders must be submitted to the OHMEA prior to first shipment.

(3) Cylinders must be shipped in strong outside packagings in accordance with § 173.301(k).

8. SPECIAL PROVISIONS:

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

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

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

d. Each packaging manufactured under the authority of this exemption must be marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

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

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo aircraft only.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each aircraft used to transport packages covered by this exemption. The shipper must furnish a copy of this exemption 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 exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

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

- Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

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

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.

Ann Mazzullo

for Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

JUL 31 2002
(DATE)

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

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

PO: SS/ALB