U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

SEP 7 2004

DOT-E 12221
(THIRD REVISION)

EXPIRATION DATE: August 31, 2006

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Advanced Technology Materials, Incorporated
Danbury, CT

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the transportation in commerce of certain non-DOT specification cylinders containing certain compressed gases and liquids adsorbed onto a microporous substrate. 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 §§ 173.192, 173.302a(a)(a), and 173.304a(a)(a) in that a non-DOT specification cylinder is not authorized, except as specified herein.

5. BASIS: This exemption is based on the application of Advanced Technology Materials, Inc. dated March 31, 2003, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101): SEP 7 2004

Proper Shipping Name/ Hazardous Materials Description	Hazard Class/ Division	Identi-fication Number	Packing Group
Ammonia Anhydrous	2.3 Hazard Zone D	UN1005	N/A
Arsine	2.3 Hazard Zone A	UN2188	N/A
Boron Trichloride	2.3 Hazard Zone C	UN1741	N/A
Boron Trifluoride	2.3 Hazard Zone B	UN1008	N/A
Carbon Monoxide, compressed	2.3 Hazard Zone D	UN1016	N/A
Chlorine	2.3 Hazard Zone B	UN1017	N/A
Compressed gas, n.o.s.	2.2	UN1956	N/A
Compressed gas, Flammable, n.o.s.	2.1	UN1954	N/A
Compressed gas, Toxic, n.o.s.	2.3 Hazard Zone A	UN1955	N/A
Compressed gas, toxic, corrosive, n.o.s.	2.3 Hazard Zone B	UN3304	N/A
Dichlorosilane	2.3 Hazard Zone B	UN2189	N/A
Germane	2.3 Hazard Zone B	UN2192	N/A
Hydrogen Bromide Anhydrous	2.3 Hazard Zone C	UN1048	N/A
Hydrogen Chloride Anhydrous	2.3 Hazard Zone B	UN1050	N/A
Hydrogen Selenide, Anhydrous	2.3 Hazard Zone A	UN2202	N/A
Hydrogen Sulfide	2.3 Hazard Zone B	UN1053	N/A
Methyl Mercapton	2.3 Hazard Zone C	UN1064	N/A
Nitric Oxide, compressed	2.3 Hazard Zone A	UN1660	N/A
Phosgene	2.3 Hazard Zone A	UN1076	N/A
Phosphorus Pentafluoride	2.3 Hazard Zone B	UN2198	N/A

Proper Shipping Name/ Hazardous Materials Description	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Phosphine	2.3 Hazard Zone A	UN2199	N/A
Silane, compressed	2.1	UN2203	N/A
Silicon Tetrafluoride,	2.3 Hazard Zone B	UN1859	N/A
Sulfur dioxide	2.3 Hazard Zone C	UN1079	N/A
Toxic liquids, flammable, organic, n.o.s., *inhalation hazard, Packing Group I, Zone B*	6.1 Hazard Zone B	UN2929	PG I
Tungsten Hexafluoride	2.3 Hazard Zone B	UN2196	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification cylinder filled with a microporous substrate onto which the gas is adsorbed. The gas remains adsorbed during transportation in essentially a solid state. The system is filled and operated at sub-atmospheric pressures, and is described as a sub-atmospheric gas delivery system (SDS). The welded cylinder is equipped with: internal baffles or with an internal cooling coil; and a separate fill port and a top protective ring. The cylinder must have pressure relief devices as prescribed for the hazardous material being transported in § 173.301(f). The cylinder must be designed and constructed in accordance with: NovaSource drawing 450-A1 Rev. 0 dated April 14, 1999 on file with the Office of Hazardous Materials Exemptions and Approvals; Section VIII, Division 1 of the ASME Code; and with the following specifications:

Capacity:	50 to 450 liters
Material:	ASTM A414 Carbon steel or Type 304 or 316 Stainless Steel
Minimum sidewall thickness:	0.187 inch
Maximum working pressure:	75 psig
Minimum design burst pressure:	300 psig

b. TESTING - Each cylinder must be hydrostatically pressure tested every ten years in accordance with the requirements of § 180.205 for DOT 3AA specification cylinders.

c. OPERATIONAL CONTROLS - Each cylinder must remain in dedicated product service for its entire life.

8. SPECIAL PROVISIONS:

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

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

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each motor vehicle used to transport packages covered by this exemption.

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, 49 CFR Parts 171-180.
- Persons operating under the terms of this exemption 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 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 this 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 inform the AAHMS, in writing, of any incident involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:

SEP 7 2004

Robert A. McGuire
For Associate Administrator for
Hazardous Materials Safety

(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.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S. Department of Transportation, 400 7th Street, S.W., Washington, DC 20590-0001, Attention: Records Center, 202-366-5046.

PO: CWF/sln