December 18, 2019

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 20341
(FIRST REVISION)

EXPIRATION DATE: 2023-11-30

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Air Products and Chemicals, Inc.
Allentown, PA

2. PURPOSE AND LIMITATION:

a. This special permit authorizes the transportation in commerce of certain Division 2.1 and 2.2 materials in DOT Specification 3A, 3AA, 3AX, 3AAX and 3T cylinders (tubes) having a water capacity over 125 lbs that are requalified every ten years rather than every five years. The 3AX, 3AAX, and 3T cylinders (tubes) must be mounted in an ISO frame or on a trailer frame. 3A or 3AA tubes may also be mounted in an ISO frame or tube trailer frame. 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.

c. No party status will 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 § 180.209(a) and (b), in that cylinders (tubes) with water capacity over 125 lbs may be requalified every ten years and 3A, 3AA, 3AX, 3AAX, and 3T cylinders (tubes) are not required to be removed from bundles or frames and hammer tested prior to each refill;

and § 180.209(b)(1)(iv) in that the approved combination acoustic emission and ultrasonic examination (AE/UE) or 100% UE methods are authorized in lieu of hydrostatic testing and visual inspection.

NOTE: This does not relieve the holder of this special permit from securing an approval for retesting cylinders from the Associate Administrator for Hazardous Materials Safety.

5. BASIS: This special permit is based on the application of Versum Materials, LLC dated September 20, 2019, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Argon, compressed	2.2	UN1006	N/A
Helium, compressed	2.2	UN1046	N/A
Hexafluoroethane or Refrigerant gas R 116	2.2	UN2193	N/A
Neon, compressed	2.2	UN1065	N/A
Nitrogen trifluoride	2.2	UN2451	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Nitrous oxide	2.2	UN1070	N/A
Sulfur hexafluoride	2.2	UN1080	N/A
Tetrafluoromethane or Refrigerant gas R 14	2.2	UN1982	N/A
Air, compressed,	2.2	UN1002	N/A
Oxygen	2.2	UN1072	N/A

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi- fication Number**	**Packing Group**
Hydrogen, compressed	2.1	UN1049	N/A
Silane	2.1	UN2203	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packaging prescribed are DOT 3A, 3AA, 3AX, 3AAX or 3T cylinders(tubes)of which the 3AX, 3AAX and 3T cylinders (tubes)must be mounted in an ISO frame that meets the requirements of ISO 1496 or mounted on a trailer frame (tube trailers). 3A and 3AA cylinders may be mounted in an ISO frame that meets the requirements of ISO 1496 or mounted on a trailer frame. The cylinders (tubes)are subjected to periodic requalification and marking specified in §§ 180.205, 180.209, and 180.213 except that:

(1) Each cylinder (tube) may be requalified once every 10 years in accordance with § 180.205 using either the hydrostatic testing and visual inspection described in § 180.205 or in accordance with current DOT special permits applicable to these DOT specification cylinders (tubes) using one of the following methods:

- 100% ultrasonic examination (UE) or
- Acoustic emission and follow-up ultrasonic examination (AE/UE)

The 10 year requalifcation period applies only to cylinders (tubes) that meet all requirements specified in § 180.209(b) except that the cylinders (tubes) may have a water capacity over 125 lbs and they are not hammer tested.

(2) Every five years, each cylinder (tube) including the cylinder(tube) neck and flange/sleeve must be subjected to an external visual inspection (without disassembly) in accordance with CGA Pamphlet C-6. Prior to use of this special permit, a cylinder (tube) with outside diameter (OD) ≥ 18″ with excessive corrosion around the neck or under the flange/sleeve

must be removed and examined in accordance with the DOT procedure for the inspection of DOT/TC cylinder (tube) mounting threads listed on PHMSA website at: http://www.phmsa.dot.gov/hazmat/library/reports

The results of the visual inspection for each cylinder or tube must be recorded and the report must be submitted to the Approvals and Permits Division upon request.

b. OPERATIONAL CONTROLS:

(1) Before being used under the terms of this special permit, each DOT 3T cylinder (tube) must be subjected to shear wave ultrasonic examination (UE). The UE must be performed by an authorized DOT UE special permit holder or the tube manufacturer. Maximum acceptance defect (sidewall crack) for a tube that is tested by UE shear wave is 5% of the minimum design wall thickness of the tube. The UE shear wave must cover 100% sidewall of the cylinder;

(2) Maximum cycling (fillings) of each cylinder (tube) in a 10 year period must be less than or equal to 600 for DOT 3A, 3AA, 3AX, 3AAX and 300 for DOT 3T cylinders (tubes). Air Products and Chemicals must record all fillings of each cylinder and submit the report to the Approval and Permits Division upon request;

(3) Each DOT 3A, 3AA 3AX, 3AAX, or 3T cylinder (tube) which is requalified under the terms of this permit must undergo an internal visual inspection (every 10-years) in accordance with CGA Pamphlet C-6;

(4) All gases must have a dew point at or below minus 52°F at one atmosphere;

(5) Carbon dioxide or corrosive gas in any concentration cannot be added to cylinders(tubes);

(6) Hydrogen or other gases that may cause hydrogen embrittlement are not authorized for transportation in DOT 3T cylinders (tubes);

(7) The external threads of each cylinder (tube) with OD≥18" must be examined once every 10 years in accordance with examined in accordance with the DOT procedure for the inspection of DOT/TC cylinder (tube)

mounting threads listed on PHMSA website at: http://www.phmsa.dot.gov/hazmat/library/reports

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 modification or change is 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 person may perform inspection and testing of cylinders(tubes) subject to the special permit unless, there it has a current copy of this special permit at each requalification location and complies with all the terms and conditions of this special permit.

c. MARKING:

(1) For the 3AX, 3AAX, and 3T cylinders (tubes) and any 3A or 3AA tubes mounted in an ISO frame or tube trailer frame, an exterior cylinder (tube) on each side of the ISO frame or the tube trailer must be plainly and durably marked "DOT-SP 20341" with letters and numbers at least 2inch high on a contrasting background.

(2) For the 3AX, 3AAX, and 3T cylinders (tubes) and any 3A or 3AA tubes mounted in an ISO frame or tube trailer frame, the current retest date must be marked on the rear or side of the ISO frame or the tube trailer at approximately eye level. In the event retest dates of cylinders (tubes) differ in the frame or tube trailer, the oldest retest date (meaning the date of the retest that must occur first) will be displayed.

(3) For the 3A and 3AA cylinders not mounted in an ISO frame or tube trailer frame, each cylinder must be plainly and durably marked with "DOT-SP 20341" as specified in § 172.301(c).

(4) Cylinders tested before September 28, 2016 and are marked with "DOT-SP 14298" may continue to be used under the terms of this special permit. When tested under the terms of this special pert after that date, these cylinders must be marked "DOT-SP 20341".

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

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, 49 CFR 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 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 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 William Schoonover
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials 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://www.phmsa.dot.gov/hazmat/regs/sp-a/special-permits/list
Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: RShafkey/SG