1. GRANTEE: Versum Materials, LLC
   Allentown, PA

2. PURPOSE AND LIMITATION:
   a. This special permit authorizes the transportation in commerce of certain Division 2.2 materials in certain DOT specification seamless steel cylinders. 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 or other uses not associated with transportation in commerce.

   c. No party status will be granted to this special permit.


4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.304a(a)(2) in that a higher permitted filling density is authorized.

5. BASIS: This special permit is based on the application of Air Products and Chemicals, Inc. dated July 24, 2014 submitted in accordance with § 107.109 and additional information submitted by Versum Materials, LLC dated January 5, 2016.
6. **HAZARDOUS MATERIALS (49 CFR 172.101):**

<table>
<thead>
<tr>
<th>Hazardous Materials Description</th>
<th>Hazard Class/Division</th>
<th>Identification Number</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide</td>
<td>2.2</td>
<td>UN1013</td>
<td>N/A</td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>2.2</td>
<td>UN1070</td>
<td>N/A</td>
</tr>
</tbody>
</table>

7. **SAFETY CONTROL MEASURES:**

   a. **PACKAGING** - Prescribed packagings are DOT Specification 3A, 3AA, 3AX, 3AAX, 3AL or 3T cylinders with a marked service pressure of at least 2,000 psig.

   b. **OPERATIONAL CONTROLS** -

      (1) The maximum permitted fill density is as follows:

      | Service Pressure, psig | Maximum Fill Density (Percent) (See Note 1) |
      |------------------------|--------------------------------------------|
      | 2,000                  | 70.3                                       |
      | 2,265                  | 73.2                                       |
      | 2,400                  | 74.5                                       |

**Note 1:** Fill density is defined as the percent ratio of the weight of the gas in a cylinder to the weight of the water that the cylinder will hold at 15°C (60°F).

(2) The pressure in the cylinder may not exceed 95 percent of the cylinders test pressure at 65°C (149°F).

(3) The pressure in the cylinder may not exceed 90 percent of the start-to-discharge pressure of the cylinders pressure relief device at 54.4°C (130°F).
The maximum tolerance of scales used must be +/- 0.5%.

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. **MARKING** - Each cylinder other than a tube trailer motor vehicle or ISO Module must be plainly and durably marked “DOT-SP 13599” as specified in § 172.301(c).

   d. Each tube trailer motor vehicle or ISO Module must be marked “DOT-SP 13599” in letters and numbers at least two inches high on a contrasting background on both sides.

   e. The former grantee, Air Products and Chemicals, Inc., may continue to use the special permit until December 31, 2016.

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 and 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:

    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.
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 Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety


Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at
Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Toughiry/TG