

December 15, 2011



U.S. Department  
of Transportation

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

**Pipeline and Hazardous  
Materials Safety Administration**

DOT-SP 14977  
(THIRD REVISION)

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: (See individual authorization letter)
2. PURPOSE AND LIMITATION:
  - a. This special permit authorizes the transportation in commerce of silane in certain DOT specification cylinders that are not equipped with pressure relief devices. 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 the development of this special permit only considered the hazards and risks associated with the transportation in commerce.
  - c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.301 (f) in that the DOT specification cylinders are not equipped with pressure relief devices.
5. BASIS: This special permit is based on the application of REC Advanced Silicon Materials LLC dated October 31, 2011 submitted in accordance with § 107.105.

December 15, 2011

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Silane, compressed	2.1	UN2203	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packagings prescribed are DOT 3A, 3AA, 3AX, 3AAX, 3T cylinders, and DOT UN refillable pressure receptacles for the transportation in commerce of the compressed gases listed in paragraph 6 that meet all requirements of the applicable specification except that they are not equipped with pressure relief devices (PRD) as prescribed in § 173.301(f). Additionally, each cylinder (tube) must have a marked service pressure of at least 2160 psig (2175 psia).

b. TESTING - Each cylinder must be requalified for use at least once every five years in accordance with § 180.209 as prescribed for DOT 3A, 3AA, 3AX, 3AAX, 3T cylinders and DOT UN refillable pressure receptacles for the transportation in commerce of the compressed gases listed in paragraph 6. As an alternative, each cylinder may be requalified by acoustic emission and ultrasonic examination (AE/UE) in accordance with a valid special permit and by a retest facility approved by the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) for AE/UE of these types of cylinders.

c. OPERATIONAL CONTROLS -

(1) Each cylinder must be charged to a filling density (filling ratio) less than or equal to 0.321 kg SiH<sub>4</sub>/liter (1457 psia @70°F).

(2) The driver of the transport vehicle must be instructed that when the vehicle is in an accident involving spilled fuel or fire, the vehicle must be move to a safe location unless moving the vehicle would directly endanger others.

(3) Emergency response information provided with the

**December 15, 2011**

Shipment and available via an emergency response telephone number must indicate that the cylinders (tubes) are not fitted with pressure relief devices and provide appropriate guidance for fire.

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. Each cylinder must be marked as follows:

(1) The exterior of the trailer cabinet of the vehicle chassis to which the cylinders are affixed must be marked with letters at least 2 inches high on a contrasting background "DOT-SP 14977".

(2) An exterior tube on each side of a multiple-element gas container must be marked with letters at least 2 inches high on a contrasting background "DOT-SP 14977".

(3) Each cylinder not affixed in a vehicle chassis or in a multiple-element gas container must be marked with "DOT-SP 14977" in addition to the specification marking.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo vessel.

10. MODAL REQUIREMENTS:

a. 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.

b. Transportation by motor vehicle is limited to private carriage.

**December 15, 2011**

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.
- o 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.

**December 15, 2011**

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 Material 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://hazmat.dot.gov/sp\\_app/special\\_permits/spec\\_perm\\_index.htm](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.

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