

June 15, 2016



U.S. Department
of Transportation

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

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 16584
(FIRST REVISION)

EXPIRATION DATE: 2018-03-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: VISURAY LLC
HOUSTON, TX
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of sulfur hexafluoride in a non-DOT specification cylinder, which is part of an oil well downhole logging tool. 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. 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 Parts 171-180, except as specified herein.
5. BASIS: This special permit is based on the application of Visuray LLC dated September 30, 2015 submitted in accordance with § 107.105 and the public proceeding thereon and additional information dated April 26, 2016.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/Division	Identification Number	Packing Group
Sulfur hexafluoride	2.2	UN1080	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a non-DOT specification dual chamber pressure vessel (SF6 Transport Vessel) that is part of an oil well downhole logging tool and must conform to Visuray drawing number 1005316_A, which is on file with the Office of Hazardous Materials Safety Approvals and Permits Division, and to the following:

(1) The dual chamber pressure vessel has a total volume of 7.5 liters. The chamber contains electronics with a volume of 3.9 liters of sulfur hexafluoride gas. The gas is introduced into the primary chamber and is pressurized to 10 bars at room temperature.

(2) The primary chamber is manufactured from two sections of 316 stainless steel in the annealed condition, which are electron beam welded to form a single body. The ends of the primary chamber are sealed with FRM elastomer O-rings that are held in place by large diameter threads.

(3) After manufacturing and before filling, each primary chamber undergoes a pressure test consisting of 2 cycles for 15 minutes each at 22 bars of pressure.

(4) After filling and pressurizing with the gas, the primary chamber is installed into a secondary chamber.

(5) The secondary chamber is composed of PH 17-a stainless steel in the H1025 condition, heat treated Inconel 718, 316 stainless steel and Beryllium I220H. The ends of the secondary chamber are held in place with large diameter Stub Acme threaded connections and sealed with dual FKM elastomer O-rings.

(6) During normal operation, the secondary chamber

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prevents borehole pressure in the oil well from reaching the inside components. Therefore, the secondary chamber is pressure tested during manufacturing to withstand 1480 bars of external pressure with 1 bar pressure inside.

b. OPERATIONAL CONTROLS -

(1) Materials offered for transportation by aircraft must be in conformance with the hazard communication requirements of Subparts C, D and E of Part 172.

(2) Marking Requirements: Each package, and overpack if used, prepared under the provisions of this special permit must be plainly marked DOT-SP 16584.

8. SPECIAL PROVISIONS:

a. Under the terms of this special permit, the grantee may only offer hazardous materials (i.e., the grantee is not authorized as a carrier).

b. 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.

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

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, passenger-carrying aircraft, and cargo aircraft.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft, or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit 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 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

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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

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 Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Andrew Eckenrode