



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

April 11, 2023

1200 New Jersey Avenue, SE
Washington, DC 20590

DOT-SP 20478
(SECOND REVISION)

EXPIRATION DATE: 2027-03-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Thermo MF Physics LLC
Colorado Springs, CO
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of high voltage accelerators for the transportation of sulfur hexafluoride. 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. In accordance with 49 CFR 107.107(a) party status may not be granted to a manufacturing permit. These packagings may be used in accordance with 49 CFR 173.22a.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.304(a) in that the prescribed packaging is not authorized except as specified herein.
5. BASIS: This special permit is based on Thermo MF Physics LLC application dated April 5, 2023, submitted in accordance with § 107.109.

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: Packaging prescribed is a high voltage accelerator system, consisting of a high voltage accelerator and other instrumentation assembled within an aluminum alloy shell. The outer housing is machined from a 4.25" x 7" x 8" block of 7075-T6 aluminum. The minimum wall thickness at any point of the housing is 0.400". The packaging is charged with sulfur hexafluoride, which serves as a dielectric material. The assembly must be in accordance with Thermo Physics' drawings on file with the Office of Hazardous Materials Safety (OHMS) and with the following requirements:

- (1) The high voltage accelerator system may not be charged with sulfur hexafluoride to a pressure exceeding 120 psig.
- (2) The high voltage accelerator system must be equipped with a safety relief device capable of limiting the pressure to 185 psig.

b. TESTING:

- (1) At Time of Manufacture:
 - (i) Each outer housing of the high voltage accelerator must be capable of withstanding a pressure of not less than 480 psig without failure or leaks.
 - (ii) All components must be 100% inspected for compliance with the manufacturing specifications related to the pressure integrity of the device.
- (2) Requalification:
 - (i) Only Thermo MF Physics in Colorado Springs is authorized to test/refurbish/certify new or used high voltage accelerators.
 - (ii) Each high voltage accelerator must be reinspected and retested in

accordance with Thermo MF Physics procedures detailed in the application for special permit on file with OHMS.

c. OPERATIONAL CONTROLS:

(1) The high voltage accelerator systems must be overpacked in the strong outside containers as described in the information on file with OHMS.

(2) Each outside packaging must be marked "DOT-SP 20478".

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 or its contents 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.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, cargo vessel, cargo only aircraft, and passenger-carrying 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 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-13, 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 <https://www.phmsa.dot.gov/approvals-and-permits/hazmat/special-permits-search>. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: AS/TG