



U.S. Department  
of Transportation

400 Seventh Street, S.W.  
Washington, D.C. 20590

Research and  
Special Programs  
Administration

APR 29 2004

Mr. Michael Lemchak  
Thermo MF Physics  
5074 List Drive  
Colorado Springs, CO 80919

Dear Mr. Lemchak:

This is in response to your November 24, 2003, application for modification of DOT-E 13181.

In accordance with 49 CFR 107.113(e) and (g), your application is denied for the following reason:

The new accelerator configuration meets all of the terms and conditions specified in the current exemption; therefore, a modification of the exemption is not necessary. However, the drawings of the new accelerator have been added to the exemption file to permit transportation of these items in accordance with the terms of the exemption. If there are future modifications to the design of the accelerator, an application for modification must be submitted to the Office of Hazardous Materials Exemptions and Approvals for evaluation prior to transportation of a new design.

If you have any questions, please do not hesitate to contact Diane LaValle of my staff at (202) 366-4535.

Sincerely,

Robert A. McGuire  
Associate Administrator for  
Hazardous Materials Safety



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400 Seventh Street, S.W.  
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**MAY 23 2003**

DOT-E 13181

**EXPIRATION DATE: April 30, 2005**

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Thermo MF Physics  
Colorado Springs, Colorado
2. PURPOSE AND LIMITATION:
  - a. This exemption authorizes the manufacture, marking, sale and use of high voltage accelerators for the transportation in commerce of sulfur hexafluoride. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.
  - b. The safety analyses performed in development of this exemption 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, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.304(a)(2) and 175.3 in that the prescribed packaging is not authorized except as specified herein.
5. BASIS: This exemption is based on Thermo MF Physics' application dated November 14, 2002 submitted in accordance with § 107.105 and the public proceeding thereon.

MAY 23 2003

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Material 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 aluminum shell is constructed of 6061-T6 seamless pipe with 6061-T6 end caps. The shell is filled with sulfur hexafluoride. The assembly must be in conformance with Thermo MF Physics' drawings on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA) and with the following requirements:

(1) The high voltage accelerator system may not be charged with sulfur hexafluoride to a pressure exceeding 120 psig at 70°F.

(2) The high voltage accelerator system must be equipped with a safety relief device capable of limiting the pressure to 180 psig.

b. TESTING -(1) At Time of Manufacture

(1) Each high voltage accelerator with all pressure containing components must be capable of withstanding a hydrostatic proof pressure test of not less than 450 psig.

(2) Prior to shipment, each high voltage accelerator system must be leak tested to at least 150 psig without evidence of leakage.

(2) Requalification

(i) Only the Thermo MF Physics in Colorado Springs is authorized to test/refurbish/certify new or used housings for shipment.

(ii) Each high voltage accelerator must be reinspected and retested in accordance with Thermo MF Physics procedures detailed in the application for exemption on file with OHMEA.

c. OPERATIONAL CONTROLS:

(1) The high voltage accelerator system must be overpacked in strong outside containers as described in the information on file with OHMEA. When so packed, the systems are exempt from labeling, except when offered for transportation by air.

(2) Each outside packaging must be marked "INSIDE CONTAINERS CONFORM WITH "DOT-E 13181".

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.

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

d. Each packaging manufactured under the authority of this exemption must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

**MAY 23 2003**

- e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, cargo vessel, cargo only aircraft, and passenger-carrying aircraft.
10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or aircraft used to transport packages covered by this exemption. The shipper must furnish a copy of this exemption 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 exemption and penalties prescribed by Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
  - 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 exemption must receive training on the requirements and conditions of this exemption in addition to the training required by § 172.700 through § 172.704.

No person may use or apply this exemption, including display of its number, when the exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must inform the AAHMS, in writing, of any incidents involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:



Robert A. McGuire  
Associate Administrator for  
Hazardous Materials Safety

**MAY 23 2003**

(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590.  
Attention: DHM-31.

Copies of this exemption may be obtained by accessing the Hazardous Materials Safety Homepage at <http://hazmat.dot.gov/exemptions>. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: SStaniszewski