U.S. Department of Transportation
**Research and Special Programs Administration**

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

MAR 24 1997

DOT-E 11778

EXPIRATION DATE: **March 1, 1999**

(FOR RENEWAL, SEE 49 CFR SECTION 107.109)

1. GRANTEE: National Aeronautic and Space Administration Washington, DC

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the transportation in commerce of the Faint Object Spectrometer (FOS) containing anhydrous ammonia, Division 2.2 and 2.3, in non-DOT specification containers known as heat pipes. This exemption provides no relief from any regulation other than as specifically stated herein.

b. The safety analyses performed in development of this exemption only considered the hazard and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks of 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 section 173.304 (a)(2) in that non-DOT specification packaging is authorized.

5. BASIS: This exemption is based on the application of National Aeronautic and Space Administration (NASA) dated October 22, 1996, submitted in accordance with 49 CFR 107.105 and the public proceeding thereon.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

| Hazardous materials description -- proper shipping name | Hazard Class/ Division | Identi-fication Number | Packing Group |
|---|---|---|---|
| Ammonia, anhydrous, liquefied | 2.2 & 2.3 | UN1005 | N/A |

7. PACKAGING AND SAFETY CONTROL MEASURES:

a. PACKAGING: Packagings prescribed are non-DOT specification containers known as heat pipes which form a part of the FOS. The heat pipes are built to the design qualifications of MIL-STD-1522A. The FOS is transported in an all metal container as shown on drawings FOS-MMC-PA-02 on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA).

b. TESTING - The FOS containers are tested in accordance with SN 18 Boiler Reflux Testing Procedure No. PD 1700008016-6 on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA).

c. OPERATIONAL CONTORLS -

I. Each heat pipe may not contain more than 0.25 pounds of anhydrous ammonia.

ii. At 130°F, the design burst pressure of the heat pipes must be at least 4 times the vapor pressure of the lading.

iii. Emergency response information provided with the shipment and available via an emergency response telephone number must indicate that the heat pipes are not fitted with pressure relief devices and provide appropriate guidance in case receptacles are exposed to fire.

8. SPECIAL PROVISIONS:

a. Persons who receive the packages covered by this exemption may reoffer them for transportation provided no modifications or changes are made to the packages, all terms of this exemption are complied with and a current copy of this exemption is maintained at each facility from which such reoffering occurs.

b. Shippers using the packaging covered by this exemption must comply with all provisions of this exemption, and all other applicable requirements contained in 49 CFR Parts 171-180.

c. MARKING - The all metal container containing the FOS must be marked on two sides in letters at least 2 inches high on a contrasting background, "DOT-E 11778."

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, cargo aircraft only.

10. MODAL REQUIREMENTS: A copy of this exemption must be carried aboard each aircraft and motor vehicle used to transport packages covered by this exemption. The shipper shall 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 the Federal hazardous materials transportation law, 49 U.S.C. Section 5101 et seq:

    - All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.

    - Registration required by 49 CFR 107.601 et seq., when applicable.

    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. (49 CFR 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 at Washington, D.C.:

MAR 24 1997

(DATE)

Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

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.

MAR 24 1997



The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Dist: FHWA, FAA
PO: MT