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

JAN 31 1997

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

DOT-E 11070
(SECOND REVISION)

EXPIRATION DATE: April 30, 1998

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

2. PURPOSE AND LIMITATION: This exemption authorizes the transportation in commerce of certain non-DOT specification packagings containing anhydrous ammonia. This exemption provides no relief from any regulation other than as specifically stated herein.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR 173.304(a)(2).

5. BASIS. This exemption is based on the application of the National Aeronautics and Space Administration (NASA) dated May 7, 1996, submitted in accordance 49 CFR 107.105 and supplemental letter dated January 28, 1997.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous materials description/proper shipping name	Hazard Class or Division	Identification number	Packing Group
Ammonia, anhydrous, liquefied	Division 2.2	UN1005	N/A

7. PACKAGING AND SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a closed loop thermal control system known as the Capillary Pumped Loop Flight (CAPL) Experiment. This equipment is described in the NASA application and by means of CAPL Assembly [Goddard Space Flight Center (GSFC)] Drawing No. GE1479737 (6 sheets) dated October 1, 1992, and detail drawings called out on the List of Materials, GSFC GE1479737 Sheet 1 of 6, and other drawings on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA). The CAPL system generally can be described as four non-DOT specification pressure systems consisting of aluminum heat pipes, heat exchangers, evaporator plates, and a stainless steel reservoir, valves, pumps, meters and control components, tubing and support hardware and structure.

Volume of the system may not exceed 163 cubic inches and may not contain more than 4.0 pounds of anhydrous ammonia. System pressure must be 300 psia at 70°F and 334 psia at 130°F. Filling density at 60°F must be 51.41 percent as compared to water. The anhydrous ammonia must be 100% liquid and 0% gas at 60°F.

For transport, the CAPL must be overpacked in a wooden crate meeting the requirements of MIL-C-104 as depicted on GSFC Drawing No. GC PKG-CAPL, dated May 27, 1993 or MIL-601 described on Figure 4. EDM-2 Reflux Mode Configuration submitted with the January 28, 1997 letter on file with the OHMEA.

b. TESTING - The CAPL must withstand a minimum proof test pressure of 1215 psig.

c. MARKING - Packaging must be plainly marked on two opposing sides in letters and numerals two inches high on a contrasting background "DOT-E 11070".

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.

9. MODES OF TRANSPORTATION AUTHORIZED. Motor vehicle.

10. MODAL REQUIREMENTS:

a. A copy of this exemption must be carried aboard each motor vehicle used to transport packages covered by this exemption.

b. Each motor carrier used to transport packages covered by this exemption must have a "Satisfactory" safety rating, as assigned by the Office of Motor Carrier Safety Field Operations, Federal Highway Administration.

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 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.:

JAN 31 1997

Alan I. Roberts
Associate Administrator
for Hazardous Materials Safety

(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.

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