

August 27, 2014



U.S. Department
of Transportation

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

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 16115

EXPIRATION DATE: June 30, 2016

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Advanced Cooling Technologies, Inc.
Lancaster, PA
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation of anhydrous ammonia in alternative packaging (heat pipes). This special permit provides no relief from the Hazardous Materials Regulations (HMR) or the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO TI) 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.
 - d. This special permit serves as an "exemption" as defined in 1;3.1.1 of the ICAO TI and as a "Competent Authority Approval" as defined under 49 CFR § 107.1.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180 and the ICAO TI.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 171.22(b)(4), Column (9B) of the 172.101 Table, and Columns 12 and 13 in 3;2, Table 3-1 of the ICAO TI in that transportation aboard cargo aircraft is not authorized, and §§ 173.301(f), 173.302(a)(1), 173.304(a)(2), and 4;11 Packing Instruction 200 of the ICAO TI in that DOT specification packaging is required, except as provided herein.

5. BASIS: This special permit is based on the application of Advanced Cooling Technologies, Inc. dated February 28, 2014 and additional information dated June 27, 2014, July 1, 2014, July 21, 2014, July 24, 2014, July 29, 2014 and July 30, 2014, submitted in accordance with § 107.105 and the public proceeding thereon.
6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Ammonia, anhydrous	UN1005	2.2/2.3*	n/a

* Division 2.3 for international transportation. Division 2.2 as an alternate when only domestic transportation is involved.

7. SAFETY CONTROL MEASURES:

- a. PACKAGING - Prescribed packaging are non-DOT specification pressure vessels called Isothermal Furnace Liners (heat pipes). The heat pipes have a maximum water capacity of 4 Liters and are constructed from Type 304L stainless steel in accordance with the specifications and drawings on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD).
- b. TESTING - The welds on each heat pipe must be subjected to a radiographic examination in accordance with MIL-STD-2219. Each heat pipe must also be subjected to a pneumatic proof pressure test to at least 1400 psig for a period of 30 minutes followed by a visual examination.
- c. OPERATIONAL CONTROLS -
- (1) The heat pipes may not contain more than 0.25 pounds of anhydrous ammonia.
 - (2) At 54.4°C (130°F), the design burst pressure of the heat pipes must be in accordance with calculations on file with the OHMSAPD.

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- (3) 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 the receptacles are exposed to fire.
- (4) Each heat pipe must be sealed in a polyethylene bag, wrapped in foam cushioning and overpacked in a DOT UN 4C or 4D wood box; or in a non-DOT specification wooden box that meets the requirements of §§ 178.513(b)(1) or 178.514(b)(1).

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 modifications or changes are made to the package and it is reoffered for transportation in conformance with this special permit, the HMR, and the ICAO TI.
- b. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.
- c. For purposes of transportation by aircraft, this special permit also constitutes an exemption to the ICAO TI in accordance with 1;1.1.3.
- d. For international flights, the ICAO TI may require exemption authorization by the States of origin, transit, over flight, and destination of the consignment, as well as the State of the air operator.
- e. This special permit in no way affects the need to obtain any required authorizations from other agencies of the United States Government or from the competent authorities of the States of origin, transit, over flight, and destination of the consignment, as well as the State of the air operator.
- f. 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-SP 16115".

9. MODES OF TRANSPORTATION AUTHORIZED: Motor Vehicle, Cargo aircraft only, Cargo Vessel.

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 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: BrMOORE