



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

June 24, 2025

1200 New Jersey Avenue, SE
Washington, DC 20590

DOT-SP 21938

EXPIRATION DATE: 2027-05-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Amazon.com, Inc.
Seattle, WA
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of spacecraft containing various hazardous materials including lithium ion batteries exceeding 35 kg with a state-of-charge that exceeds thirty percent, and non-DOT specification COPVs and heat pipes containing certain Division 2.2 and 2.3 liquefied and compressed gases. 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 approval under Special Provisions A2, A99, and State Variation US 3 of the ICAO TI, Packing Instruction 974 of the ICAO TI Supplement, 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.

Tracking Number: 2025024039

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.101 Hazardous Materials Table Column (9B) in that batteries contained in equipment may exceed 35 kg and that anhydrous ammonia is authorized for transportation via cargo-only aircraft; 49 CFR Part 172 Subparts D and E in that marking and labeling of the Composite Overwrapped Pressure Vessel (COPV) and heat pipes contained within the satellite is not required; § 173.301(f) in that COPVs are not required to be fitted with pressure relief devices; §§ 173.302a(a)(1) and 173.304a(a)(2), and Packing Instruction 200 of the ICAO TI in that non-DOT specification COPVs and heat pipes are authorized; and the “Q” value requirements for anhydrous ammonia in 4.1.1.9(e) of the ICAO TI are waived, as specified herein.
5. BASIS: This special permit is based on the application of Amazon.com, Inc. dated February 03, 2025 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*	2.2/2.3	UN1005	N/A
Lithium ion batteries contained in equipment <i>including lithium ion polymer batteries</i>	9	UN3481	N/A
Krypton, compressed	2.2	UN1056	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:

(1) Packagings prescribed are non-DOT specification containers which are installed in spacecraft or components of spacecraft and over-packed in a wood, metal, fiberglass, or acrylic box. The non-DOT specification COPVs, and heat pipes, are without valves or pressure relief devices and described as follows:

- (i) Heat pipes or variable conductance heat pipes, constructed of axially grooved tubing (aluminum alloy 6063) with an end cap and fill tube welded to opposing ends, not to exceed 1 liter in volume.
- (ii) The COPVs are designed, built, and tested in accordance with DOT-SP 21463.

(2) The lithium battery contained within the satellite must have a strong, impact-resistant outer casing and may not exceed a net weight of 100 kg.

(3) Packages offered for transportation must be in accordance with the requirements in Packing Instruction 974 of the Supplement to the ICAO TI, except that lithium-ion batteries may be offered for transport at a SOC not exceeding 50 percent.

(4) Details of the packagings, components, and transport container are as described in the information on file with the Office of Hazardous Materials Safety.

b. TESTING:

(1) Each lithium ion cell, as identified in the application, must be of a type tested in accordance with the UN Manual of Test and Criteria, 5th Revised Edition, Amendment 2.

(2) Each lithium ion battery, as identified in the application, must be of a type tested in accordance with the UN Manual of Test and Criteria, 6th Revised Edition.

(3) Heat pipes: Welds must be tested using an appropriate non-destructive examination (NDE) technique described in ASTM-E1742, NAS1514, (Air Force Space Command Manual) AFSPCMAN 91-910 Vol 3 or an equivalent specification. Each heat pipe must be pneumatically tested to pressure 1.5 times the vapor pressure of the lading at 100 °C (212 °F) without failure and must have minimum burst pressure of at least 1,400 psig.

(4) COPV testing must be in compliance with paragraph 7.a.(1)(ii) of this special permit.

c. OPERATIONAL CONTROLS:

- (1) Each heat pipe may not contain more than 0.35 pound of anhydrous ammonia.
- (2) At 54.4 °C (130 °F), the design burst pressure of the heat pipes must be at least 4 times the vapor pressure of the lading.
- (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 receptacles are exposed to fire.
- (4) The state of charge of the lithium ion battery contained in equipment may not exceed 50% during transport.
- (5) The batteries must be equipped with an effective means of preventing dangerous reverse current flow for cells that are connected in parallel.
- (6) Cells and batteries must be protected against short circuiting.
- (7) The batteries must be equipped with a battery management system (BMS) verified to prevent overcharge, short-circuiting, and over-discharge.
- (8) Cells or batteries that are leaking or liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive, or flammable gases, or vapors under normal conditions of transport may not be transported under this special permit.
- (9) Any changes to the battery or cells that results in a different type than those described in the information on file with the Office of Hazardous Materials Safety requires are not authorized under the current revision of this special permit.

d. MARKING: The satellite shipping container or other outer packaging must be plainly and durably marked on two opposite sides in letters at least 2 inches in height on a contrasting background, "DOT-SP 21398" as specified in §172.302(c). A "DO NOT STACK" label must be marked on the outer packaging on two opposite sides.

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 and cargo-only aircraft.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each 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.:

A handwritten signature in blue ink, appearing to read "William Quade", is written over a faint circular stamp.

for William Quade
Acting 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-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.

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