



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

June 12, 2025

1200 New Jersey Avenue, SE
Washington, DC 20590

DOT-SP 21514
(SECOND REVISION)

EXPIRATION DATE: 2027-04-30

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: National Aeronautics and Space Administration
Washington, DC
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the transportation in commerce of filled non-DOT specification cylinders without pressure relief devices. This special permit provides no relief from the Hazardous Materials Regulations (HMR) 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.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.301(a)(1) and 173.302(a)(1) in that a non-DOT specification cylinder is authorized; § 173.301(f)(1) in that a pressure relief device is not required on a cylinder filled with a gas; and § 173.301(h)(3) in that the cylinder valve assembly protection need not meet the performance requirement, as specified herein.
5. BASIS: This special permit is based on the emergency modification application of National Aeronautics and Space Administration dated May 20, 2025, submitted in accordance with § 107.117 and the determination that it is necessary to support an essential governmental function.

Tracking Number: 2025054657

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Nitrogen, compressed	2.2	UN1066	N/A
Air, compressed	2.2	UN1002	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Prescribed packagings are Resupply Gas Tanks. The tanks are non-DOT specification fully wrapped carbon-fiber aluminum lined composite cylinders without pressure relief devices and are used to transport breathing air to the International Space Station (ISS). The cylinders are manufactured by Luxfer Gas Cylinders under DOT-SP 10915 but have a valve assembly that is modified for spaceflight with a National Aeronautics and Space Administration (NASA) flow reducer to protect ISS launch vehicles from over-pressurization. Details of the cylinders, components, and transport container are described in the application on file with the Office of Hazardous Materials Safety.

b. MARKING:

(1) Each cylinder shipped under the terms of this special permit must be plainly and durably marked "DOT-SP 21514".

(2) Cylinders must be shipped in the Super Box Model HM224B shipping containers. The outer transport container must be plainly and durably marked on two opposite sides in letters at least 2 inches in height on a contrasting background, "DOT-SP 21514" as specified in § 172.301(c).

c. OPERATIONAL CONTROLS:

(1) The temperature of the cylinder during each charge event shall be verified by a NASA-certified fill procedure to not exceed the cylinder temperature limit of -58 °F to +115 °F (Enclosure B CMC3-HDW-000127 Resupply Gas Tanks Fill System Specifications and Procedures).

(2) Final pressure of the cylinder shall be verified by a NASA-certified fill procedure to not exceed the 5,500 psi operating pressure as permitted under DOT-SP 10915.

(3) Charged cylinders may only be shipped in Americase manufactured Super Box Model HM224B shipping containers, part number AT-OXB-AIRTANK-X4-LEIDOS (rigid outer packaging) to protect from over-pressurization due to fire.

8. SPECIAL PROVISIONS:

a. Under the terms of this special permit, the grantee may only offer hazardous materials (i.e., the grantee is not authorized as a carrier).

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

c. 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 motor vehicle and aircraft 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 William Quade
Acting Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials 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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