



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

September 18, 2025

1200 New Jersey Avenue, SE
Washington, DC 20590

DOT-SP 21968

EXPIRATION DATE: 2027-08-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Caterpillar Inc.
Irving, TX
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of lithium ion batteries that exceed 35 kg net weight aboard cargo-only aircraft. 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 A99 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.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 172.101 Hazardous Materials Table Column (9B) in that lithium batteries may have a mass exceeding 35 kg per package and 173.185(b)(5) in that lithium batteries that weigh 12 kg or more and have a strong, impact-resistant outer casing may be packed in a strong outer packaging, as specified herein.
5. BASIS: This special permit is based on the application of Caterpillar Inc. dated March 18, 2025, submitted in accordance with § 107.105 and the public proceeding thereon.

Tracking Number: 2025034720

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Lithium ion batteries <i>including lithium ion polymer batteries</i>	9	UN3480	N/A

7. SAFETY CONTROL MEASURES:a. PACKAGING:

- (1) Each battery with a mass of 12 kg or greater must have a strong, impact-resistant outer casing.
- (2) The batteries (except for R1700 Left and Right) must be individually packed in strong outer packagings (custom designed fully enclosed plywood crate) and seated on a wooden pallet.
- (3) No more than two (2) R1700 Left and Right batteries may be packaged in a UN 50A steel large packaging that is certified to the Packing Group I performance level (i.e., P/N 588-7277), as shown in the September 11, 2025, submission from Caterpillar Inc. on file with the Office of Hazardous Materials Safety.
- (4) The net weight of each battery within a package may not exceed the weight indicated in the table provided in paragraph 7.c.(1).
- (5) Each battery must be packaged in accordance with Packing Instruction 974 of the ICAO TI Supplement.

b. TESTING:

- (1) Lithium ion cells: All cells must be of a type that have passed all required tests as specified in the “UN Manual of Tests and Criteria, 6th Revised Edition” for SVOLT cells and “7th Revised Edition” for Saft and LG Chem cells.

(2) Battery modules: The battery modules for the R1700 Left and R1700 Right batteries must be of a type that have passed all required tests as specified in the “UN Manual of Tests and Criteria, 5th Revised Edition.”

(3) Lithium ion batteries: The lithium ion batteries must be of a type that have passed all required tests as specified in the “UN Manual of Tests and Criteria, 8th Revised Edition” for 2.2 50v, 2.2 300v and 2.2 600v batteries and “6th Revised Edition” for ESS JP3 and ESS JP4 batteries.

(4) The R1700 Left and R1700 Right battery do not need to be tested as the battery is equipped with a battery management system (BMS) as shown in paragraph 7.c.(6).

c. OPERATIONAL CONTROLS:

(1) The authorized lithium ion batteries are as specified in the application dated May 12, 2025 and summarized in the following:

Battery Name	Energy Rating (kWh)	Net Weight (kg/pounds)	Cell Type
2.2 50v	31.9	265/585	SVOLT
2.2 300 v	63.9	506/1,116	SVOLT
2.2 600 v	63.9	475/1048	SVOLT
R1700 Left and Right (when 1 battery box is packaged)	106.5	3,883/8,560	SAFT
R1700 Left and Right (when 2 battery boxes are packaged)	213	7,766/17,120	SAFT
ESS JP3	6.6	47/104	LG Chem
ESS JP4	14.9	88.7/196	LG Chem

(2) The battery must have a pressure relief vent.

(3) The battery must be equipped with an effective means to prevent dangerous reverse current flow for cells or modules connected in parallel.

- (4) All batteries must be protected against short circuiting.
- (5) The state of charge of the battery may be not more than 30 % during transportation.
- (6) The R1700 Left and Right batteries must be equipped with a BMS that has been verified as preventing overcharge, short circuits, and over-discharge between the modules.

d. MARKING: Each package must be marked with the special permit number, "DOT-SP 21968", in accordance with §172.301(c).

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.
- c. 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 countries of origin, transit, destination, and State of the Operator.

9. MODES OF TRANSPORTATION AUTHORIZED: Cargo-only aircraft.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each 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 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.

PO: Steve H/BB