



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

**June 03, 2024**

1200 New Jersey Avenue, SE  
Washington, DC 20590

DOT-SP 21638  
(FIRST REVISION)

**EXPIRATION DATE: 2026-01-31**

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: BAE Systems Controls Inc.  
Endicott, NY
2. PURPOSE AND LIMITATION:
  - a. This special permit authorizes the transportation in commerce of low production lithium ion batteries (ESS battery systems) exceeding 35 kg 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 Special Provision A88 and State Variation US 3 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, 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, as provided herein, § 173.185(a)(1) in that lithium batteries need not pass the criteria in Part III, subsection 38.3 of the UN Manual of Tests and Criteria, as provided herein, and § 173.185(b)(3)(i) and (ii) in that alternative packaging is authorized, as provided herein.

Tracking Number: 2024034846

5. BASIS: This special permit is based on the application of BAE Systems Controls Inc. dated March 19, 2024, 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
Lithium ion batteries <i>including lithium ion polymer batteries</i>	9	UN3480	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING:

- (1) ESS battery systems must be packaged in a strong outer packaging. Each ESS battery system must:
- (i) Be packed as outlined in the September 23, 2023, application on file with the Office of Hazardous Materials Safety;
  - (ii) Secured in a manner to prevent shifting, vibrations, and accidental activation; and
  - (iii) Contain no more than one ESS battery system per package.
- (2) The gross weight of a package containing an ESS battery system authorized under this special permit may not exceed 420 kg.
- (3) The ESS battery system and packaging must comply with the requirements in Packing Instruction 910 of the Supplement to the ICAO TI. Additionally, waste lithium batteries (ESS battery systems) and lithium batteries (ESS battery systems) being shipped for recycling or disposal are forbidden from air transport, and lithium ion batteries (ESS battery systems) must not be packed in the same outer packaging with substances and articles of Class 1 (explosives) other than Division 1.4S, Division 2.1 (flammable gases), Class 3 (flammable liquids), Division 4.1 (flammable solids), or Division 5.1 (oxidizers).

b. TESTING:

- (1) Each lithium ion cell (model number: INR-21700-P45B 16.2 Wh manufactured from Molicel) must be of a type that has successfully passed the required tests in accordance with 38.3 of the UN Manual of Tests and Criteria.
- (2) Any changes to the battery cell from the tested type invalidates this special permit.
- (3) The lithium batteries (ESS battery system) need not pass the criteria in Part III, subsection 38.3 of the UN Manual of Tests and Criteria

c. OPERATIONAL CONTROLS:

- (1) The authorized battery (ESS battery system) and cell are as follows:
  - (i) ESS battery system consisting of a rated energy capacity of 51 kWh, a nominal voltage of 700 V, and comprised of 3,072 lithium ion cells.
  - (ii) Lithium ion cells of model number INR-21700-P45B manufactured from Molicel, consisting of a nominal capacity of 4.5Ah, a nominal voltage of 3.6 V, and tested in accordance with 38.3 of the UN Manual of Tests and Criteria.
- (2) The ESS battery system may not exceed 340 kg or 51 kWh energy capacity.
- (3) The ESS battery system must be offered for transportation at a state of charge not exceeding 30 percent.
- (4) Only low production batteries (ESS battery systems) may be offered for transportation under the terms of this special permit. "Low production" is defined as a production run of no more than 100 batteries (ESS battery systems) annually of a particular type.
- (5) The cells incorporated into the ESS battery system must incorporate a safety venting device or otherwise be designed in a manner that precludes a violent rupture under conditions normally incident to transportation.
- (6) An effective means of preventing reverse current flow must be provided when the ESS battery system is connected in parallel.

(7) The ESS battery system must be packed to prevent accidental activation of the ESS battery system.

(8) Cells or batteries (ESS battery systems) 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.

d. MARKING: Each package, and overpack if used, prepared under the provisions of this special permit must be plainly marked with the special permit number: "DOT-SP 21638".

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 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, and destination and State of the Operator.

d. The special permit holder must maintain a record of all activity conducted under the authority granted in this special permit. The record must contain a complete listing and number of shipments made to include and upon request make this information available to a DOT representative or an enforcement official. The record must contain a listing and number of shipments made to include:

(1) Dates of shipment; and

(2) Description of each type of shipment.

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 Schoonover  
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: ae