

April 23, 2021



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 20821  
(FIRST REVISION)

**EXPIRATION DATE: 2025-03-31**

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Spaceflight Industries, Inc.  
Seattle, WA
2. PURPOSE AND LIMITATION:
  - a. This special permit authorizes the transportation in commerce of low production lithium ion batteries contained in equipment (spacecraft) via 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 and 171-180 and the ICAO TI.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.185(a) in that the batteries must be of the type proven to meet the

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criteria in Part III, subsection 38.3 of the UN Manual of Tests and Criteria; and § 173.185(b)(3) in that each lithium ion battery must be individually packed in a non-metallic inner packaging and then placed in an outer packaging at the Packing Group II level, except as specified herein.

5. BASIS: This special permit is based on the application of Spaceflight Industries, Inc. dated February 8, 2021 submitted in accordance with § 107.109.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Lithium ion batteries contained in equipment <i>including lithium ion polymer batteries</i>	9	UN3481	N/A

7. SAFETY CONTROL MEASURES:

a. OPERATIONAL CONTROLS: This Special Permit authorizes two separate shipments of packaged equipment each containing a battery identified as PAINANI-1 or PAINANI-2.

(1) PAINANI-1 - The battery contained in equipment is comprised of four (4) cells and contains an aggregate equivalent lithium content of 3.6 grams.

(2) PAINANI-2 - The battery contained in equipment is comprised of four (4) cells and contains an aggregate equivalent lithium content of 7.2 grams.

(3) Cells and the battery contained in equipment must be protected against short-circuiting.

(4) The batteries contained in equipment must be equipped with an effective means of preventing dangerous reverse current flow when a battery contains cells that are connected in parallel.

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b. TESTING:

(1) The cells within the PAINANI-1 battery must be of a type that has passed the required tests in accordance with the UN Manual of Tests and Criteria, 5<sup>th</sup> Revised Edition.

(2) The cells within the PAINANI-2 battery must be of a type that has passed safety performance tests equivalent to the UN's T.1 through T.8 tests as described in the January 2, 2019 application on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD).

(3) The batteries must be of a type that has passed the Spaceflight Industries' space environment tests equivalent to UN's T.1 and T.3 tests as described in the January 2, 2019 application on file with OHMSAPD.

c. PACKAGING REQUIREMENTS:

(1) Each battery must be contained in equipment designed for space application.

(2) The equipment containing the battery must be wrapped in a plastic electrostatic dissipative bag.

(3) The wrapped equipment must be packed in a foam-packed hard plastic case which is watertight and crushproof.

(4) The plastic case must be placed in an overpack crate made of high density polyethylene, when departing from the US.

(5) The net weight of batteries within each package must not exceed 12 kg.

d. MARKING: Each package prepared under the provisions of this special permit must be durably and legibly marked and displayed on a background of contrasting color with "DOT-SP 20821".

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

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change is made to the package or its contents and it is reoffered for transportation in conformance with this special permit and 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 each cell and battery type, the grantee must maintain the following record and upon request and make this record available to DOT representatives or enforcement officials. The record to be maintained is as follows:

- (1) A description of each cell and battery type;
- (2) Types of tests conducted;
- (3) Test results prior to offering for transportation; and
- (4) Dates and description of each shipment, to include number of cells and batteries.

9. MODES OF TRANSPORTATION AUTHORIZED: 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.

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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-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

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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](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: SH/TG