

October 01, 2020



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 21117

EXPIRATION DATE: 2021-01-31

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Spaceflight, Inc.
Seattle, WA
2. PURPOSE AND LIMITATION:
 - a. This emergency special permit authorizes the transportation in commerce of low production lithium ion batteries contained in equipment in alternative packaging. 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 § 173.185(e)(1)&(3) in that lithium ion batteries contained in equipment are not individually packed in an inner packaging and that the outer packaging is not a UN-Specification packaging, as specified herein.
5. BASIS: This emergency special permit is based on the application of Spaceflight, Inc. dated September 11, 2020, submitted in accordance with § 107.117 and a determination that it is necessary to prevent severe economic loss.

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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:

(1) This special permit is valid only for transportation of lithium ion batteries contained in equipment (spacecraft).

(2) Each battery module consists of 8 component cells, manufactured for Panasonic through its subsidiary Sanyo Electric, with the number of modules making up a battery and the total energy capacity of the battery as described in the Spaceflight's September 11, 2020 application and on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD).

(3) Each battery module must be equipped with a means of preventing dangerous reverse current flow for cells and modules connected in parallel.

(4) Not more than one spacecraft is permitted within a package.

(5) The spacecraft must be constructed to prevent against accidental operation during transport.

b. TESTING REQUIREMENTS:

(1) Each cell in the batteries must be a type that has passed the required tests in accordance with the UN Manual of Tests and Criteria, 7th Revised Edition.

(2) Each battery (integrated battery modules) contained in equipment must have passed selective

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testings resembling the UN 38.3 test requirements as related to T.1 (Altitude), T.2 (Thermal), T.3 (Vibration), and T.4 (Shock) tests of the "UN Manual of Tests and Criteria" as described in the Spaceflight's September 11, 2020 application and on file with the OHMSAPD.

c. PACKAGING:

(1) Each cell within the modules must be completely enclosed in a rigid protective enclosure made from a combination of 6061 Aluminum and ULTEM™.

(2) All modules making up a battery must be contained within a rigid aluminum box designed to house the spacecraft (spacecraft bus) which handles the rigors of operating in outer space.

(3) The battery contained in equipment (the aggregate spacecraft) must be placed in a custom-made shipping container made of wood with an aluminum plate affixed to the base of the container and this assembly must be mounted on a vibration-damping mounts affixed to the aluminum base

(4) The batteries contained in equipment must be protected from short-circuiting while in transportation.

8. MARKING REQUIREMENTS: Each package prepared under the provisions of this special permit must be plainly marked with the permit number "DOT-SP 21117".

9. 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.

10. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

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11. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each 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.
12. 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.

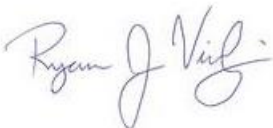
Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)– "The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation 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.

13. 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

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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 "Ryan J. Vail".

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.

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. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Steve H/Kenny Herzog