



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

February 08, 2022

1200 New Jersey Avenue, SE
Washington, DC 20590

DOT-SP 21299

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: (See individual authorization letter)
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce lithium ion batteries that exceed 35 kg net weight 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. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.
 - d. This special permit serves as an approval under Special Provision 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 and the ICAO TI.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.101 Hazardous Materials Table Column (9B) and ICAO TI Special Provision A99 in that a lithium battery may not exceed 35 kg, except as specified herein.
5. BASIS: This special permit is based on the application of Orbital Sciences LLC dated October 4, 2021 and supplemental information dated December 13, 2021 submitted in accordance with § 107.105 and the public proceeding thereon.

Tracking Number: 2021104648

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 module must weigh 12 kg or greater and have a strong, impact-resistant outer casing.
- (2) Each battery module must be packaged in a UN specification 4H2 plastic box that meets the Packing Group II performance level. The 4H2 box placed on a pallet serves as a strong outer packaging.
- (3) Packaging must comply with Packing Instruction 974 of the Supplement to the ICAO TI.
- (4) Only one battery module may be packaged in an outer packaging. The net weight of the battery module may not exceed 70 kg (154 pounds).

b. OPERATIONAL CONTROLS:

- (1) The battery modules authorized to be offered for transportation under the terms of this special permit are identified as the Halo Battery Modules with the part number 6471-PFS4340-01 Non-Flight Unit or 6471-PFS4340-02 Flight Unit and must conform to the application dated October 4, 2021 and on file with the Office of Hazardous Materials Safety (OHMS).
- (2) Each module is comprised of cells (GS Yuasa P/N LFS190-103) in a 12S1P configuration and a maximum energy content not exceeding 9.4 kWh.
- (3) The terminals of the cells and battery modules must be protected to prevent against external short circuits.

- (4) The battery modules must be packaged such that terminals are not subjected to the weight of materials that may be superimposed during transportation.
- (5) The state of charge for lithium ion battery modules must be not more than 30 % when offered for air transportation.
- (6) Not more than one battery module may be packaged within an outer packaging.
- (7) The module net mass in a package may not exceed 70 kg (154 pounds).

c. TESTING REQUIREMENTS:

- (1) The battery modules must consist of cells that have passed all required tests in accordance with Section 38.3 of the UN Manual of Tests and Criteria, 6th Revised Edition. The authorized cells must conform to the test submitted on December 3, 2021 and on file with OHMS.
- (2) The battery modules must consist of a type of two cell modules (ID: DRR180833 with a nominal voltage of 7.2 v and energy content of 1,368 Wh) which have passed all required tests in accordance with Section 38.3 of the UN Manual of Tests and Criteria, 6th Revised Edition as described in a test report dated February 25th, 2019.
- (3) The battery modules must have passed the requirements in NASA document JSC 20793 Rev D including the vibration tolerant to internal shorts, charge/discharge cycling and vacuum leaks tests as described in the Orbital's October 4, 2021 application.
- (4) A battery module must be of a type that has been verified as preventing overcharge, short circuits and over discharge between the modules in accordance with 38.3.3(g) of the UN Manual of Tests and Criteria.
- (5) Each different battery module type must comply with all the conditions of this special permit prior to being offered for transportation.

d. MARKING REQUIREMENTS: 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 21299.

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, 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. Under the terms of this special permit, the grantee may only offer hazardous materials (i.e., the grantee is not authorized as a carrier).
- d. 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 the State of operator.
- e. 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: SH/TG