

September 04, 2019



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 20323
(FIRST REVISION)

(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 of prototype and low production lithium ion cells and batteries including those contained in or packed with equipment. 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 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)(1) in that prototype and low production lithium batteries have not passed the criteria in Part III, subsection 38.3 of the UN Manual of Tests and Criteria.

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5. BASIS: This special permit is based on the application of General Dynamics Mission Systems, Inc. dated May 9, 2019 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	9	UN3480	N/A
Lithium metal batteries	9	UN3090	N/A
Lithium ion batteries contained in equipment	9	UN3481	N/A
Lithium ion batteries packed with equipment	9	UN3481	N/A
Lithium metal batteries contained in equipment	9	UN3091	N/A
Lithium metal batteries packed with equipment	9	UN3091	N/A

7. SAFETY CONTROL MEASURES:
- a. OPERATIONAL CONTROLS:

(1) Only prototype and low production lithium ion cells and batteries and lithium metal cells and batteries, including when contained in or packed with equipment, 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 cells or batteries annually of a particular type.) Each different cell and battery type must comply with all the conditions of this special permit prior to being offered for transportation.

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(2) The state of charge for prototype and low production lithium ion cells and batteries may not exceed 30% when offered for transportation.

(3) Equipment containing lithium cells or batteries must be protected against short circuits and unintentional activation.

b. TESTING AND INSPECTION FOR EACH TYPE:

(1) Each different cell and battery type must be subjected to the following tests:

(i) For cells of a type that have not been demonstrated by testing to pass all required tests as specified in the "UN Manual of Tests and Criteria, 5th Revised Edition," three cells must be stored at $55^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for at least 48 hours followed by a short circuit test (connecting a conductor across the positive and negative terminals and maintaining this short circuit for at least 1 hour after the case temperature has returned to $55^{\circ}\text{C} \pm 2^{\circ}\text{C}$); and

(ii) One battery assembled from the cells of a type that have not been demonstrated by testing to pass the required tests as specified in the "UN Manual of Tests and Criteria, 5th Revised Edition" must be stored at $55^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for at least 48 hours followed by a short circuit test (connecting a conductor across the positive and negative terminals and maintaining this short circuit for at least 1 hour after the case temperature has returned to $55^{\circ}\text{C} \pm 2^{\circ}\text{C}$); or

(iii) If batteries comprise cells of a type that have been demonstrated by testing to pass all required tests as specified in the "UN Manual of Tests and Criteria, 5th Revised Edition," a battery of a specific type must be subjected to a short circuit test (connecting a conductor across the positive and negative terminals and maintaining this short circuit for at least 1 hour), which may be conducted at a temperature range between room temperature (approximately 23°C) and $55^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

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(2) Cells and batteries are considered safe to transport under the terms of this special permit if the cells and batteries show no disassembly or fire after completion of these tests. A cell or battery type that has not passed these tests is not authorized to be offered for or transported under the terms of this special permit.

c. PACKAGING REQUIREMENTS:

(1) Cells, batteries, and equipment containing cells or batteries must be individually packed in inner packagings that completely enclose the cells, batteries, or equipment and surrounded by cushioning material that is non-combustible, and non-conductive;

(2) Cells and batteries must be protected against short circuiting;

(3) Except as provided in paragraphs 7.c.(4) and 7.c.(5) below, cells and batteries must be further packaged in a metal outer packaging that meets Packing Group I performance criteria;

(4) Prototype and low production lithium cells and batteries contained in or packed with equipment must be packaged in metal outer packaging that meets Packing Group I performance criteria. Equipment and cells and batteries must be secured against movement within the outer packaging and be packed so as to prevent accidental operation during transport;

(5) Lithium batteries with a mass of 12 kg or greater and having a strong, impact-resistant outer casing, or assemblies of such batteries may be packed in strong outer packagings or protective enclosures;

(6) All cells and batteries, including when contained in or packed with equipment, per completed package must not exceed the following limitations:

(i) FOR LITHIUM ION CELLS AND BATTERIES
(INCLUDING THOSE PACKED WITH OR CONTAINED IN
EQUIPMENT):

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CELLS:

(A) For lithium ion cells with a Watt-hour rating equal to or less than 62.5 Wh (or 5 g equivalent lithium content (ELC)), no more than 24 per package.

(B) For lithium ion cells with a Watt-hour rating greater than 62.5 Wh (or 5 g ELC), no more than 12 per package.

BATTERIES:

(A) For lithium ion batteries with a Watt-hour rating equal to or less than 312.5 Wh (or 25 g ELC), no more than 12 per package.

(B) For lithium ion batteries with a Watt-hour rating greater than 312.5 Wh (or 25 g ELC), no more than 6 per package.

(ii) FOR LITHIUM METAL CELLS AND BATTERIES (INCLUDING THOSE PACKED WITH OR CONTAINED IN EQUIPMENT):

CELLS:

(A) For lithium metal cells with a lithium content equal to or less than 5 g, no more than 24 per package.

(B) For lithium metal cells with a lithium content greater than 5 g, no more than 12 per package.

BATTERIES:

(A) For lithium metal batteries with a lithium content equal to or less than 25 g, no more than 12 per package.

(B) For lithium metal batteries with a lithium content greater than 25 g, no more than 6 per package.

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(iii) No single package may contain greater than 500 g of lithium content or greater than 500 g (6,250 Wh) equivalent lithium content. For packages containing both lithium metal and lithium ion cells or batteries, the total lithium content or equivalent lithium content may not exceed 500 g;

(7) The net weight of cells and batteries within a single package may not exceed 35 kg; and

(8) A cell or battery with a net mass of more than 30 kg must be limited to one cell or battery per outer packaging.

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 20323.

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.

d. 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 and types of tests conducted and test results prior to offering for transportation.

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(2) 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 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.

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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.

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/NICKS