



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

**June 05, 2023**

1200 New Jersey Avenue, SE  
Washington, DC 20590

DOT-SP 20493  
(FIFTH 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 lithium ion batteries exceeding 35 kg net weight aboard cargo 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.
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.
5. BASIS: This special permit is based on the applications of Tesla, Inc. dated December 8, 2022, and February 16, 2023, submitted in accordance with § 107.105 and the public proceeding thereon, and February 7, 2023, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

| Hazardous Materials Description |                           |                       |               |
|---------------------------------|---------------------------|-----------------------|---------------|
| Proper Shipping Name            | Hazard Class/<br>Division | Identification Number | Packing Group |
| Lithium ion batteries           | 9                         | UN3480                | N/A           |

7. SAFETY CONTROL MEASURES:a. Battery/Module Requirements:

## (1) Authorized Batteries, Battery Modules, and Cells:

(i) Batteries comprised of 1091596-00-CC battery modules as described in Tesla, Inc.'s applications dated July 6, 2017, September 10, 2021, or the new form factor cell described in Tesla, Inc.'s application dated March 14, 2022, and on file with the Office of Hazardous Materials Safety (OHMS).

(ii) Battery modules which do not differ from the tested type identified in paragraph 7.a.(1)(i).

(iii) Non-wire bonded battery modules (cells physically secured together without electrical connections in place) as described in Tesla, Inc.'s modification applications dated September 12, 2019, and September 10, 2021.

(iv) Each non-wire bonded battery module consisting of seven (7) bandoliers glued together may contain no more than the number of cells for each of three models as described in Tesla, Inc.'s application on file with the OHMS.

(v) Non-wire bonded bandoliers that consist of lithium ion cells, which are not electrically connected, as described in Tesla, Inc.'s application dated December 8, 2022, and on file with the OHMS.

## (2) The battery modules may not exceed 100 kg or 25 kWh energy capacity.

- (3) The batteries may not exceed 600 kg each in net weight or 120 kWh each in energy content.
- (4) The cells in non-wire bonded bandoliers, battery modules and batteries must be offered for transportation at a state of charge not exceeding 30 percent.
- (5) The cells incorporated into battery modules and batteries 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) Batteries composed of modules with an energy capacity  $\geq 6,200$  Wh must incorporate a battery management system verified to prevent overcharge, short circuits and over discharge between the battery modules. Additionally, batteries must be designed to meet Tesla, Inc.'s vibration and crush testing as described in the Tesla, Inc.'s application on file with the OHMS.
- (7) An effective means of preventing reverse current flow must be provided when the battery modules or batteries are connected in parallel.

b. Testing Requirements: All lithium ion cells and battery modules must be of a type that has passed all required tests as specified in the "UN Manual of Tests and Criteria, 5<sup>th</sup> Revised Edition, or 6<sup>th</sup> or 7<sup>th</sup> Revised Edition," as applicable, for the new cells or battery modules added in the September 10, 2021, March 14, 2022, and February 16, 2023 applications. All lithium ion cells comprising the bandoliers added in the December 8, 2022, application must be of a type that has passed all required tests as specified in the "UN Manual of Tests and Criteria, 6<sup>th</sup> Revised Edition."

c. Packaging Requirements:

- (1) Battery modules must be individually packaged in a fully enclosed inner packaging and separated from conductive materials in the packaging.
- (2) Battery modules and batteries must be protected against short circuiting.
- (3) Battery modules described in paragraphs 7.a.(1)(i) or (ii) must be further packaged in an outer packaging of a type specified in § 173.185(b) that meets Packing Group II performance criteria. No more than one battery module may be packaged within one package.
- (4) Non-wire bonded battery modules described in paragraph 7.a.(1)(iii) must be further packaged in a 4D plywood box that meets Packing Group I performance criteria. No more than one battery module containing no more than seven (7) bandoliers may be packaged within one package.

(5) Non-wire bonded bandoliers described in paragraph 7.a.(1)(v) must be placed in a non-metallic inner packaging that completely encloses the bandoliers in a tray with the number of bandoliers and trays stacked as described in the Tesla Inc.'s December 8, 2022 application which is on file with OHMS. The stacked trays serve as an inner packaging. The completed inner packaging must be closed by folding the excess bag over the trays and then packaged in a 4D plywood box that meets Packing Group I performance criteria. The number of bandoliers packaging within one package may not exceed those specified in the December 8, 2022, application on file with the OHMS.

(6) The gross weight of a package containing non-wire bonded bandoliers authorized under paragraph 7.c.(5) may not exceed 439 kg (968 pounds).

(7) Batteries weighing 12 kg or more must have a strong, impact-resistant outer casing. These batteries may be packaged in strong outer packagings. No more than one battery may be packaged within one package. The battery must be secured to prevent inadvertent movement and the terminals may not support the weight of other superimposed elements.

(9) Packagings must comply with the requirements in Packing Instruction 974 of the Supplement to the ICAO TI. Additionally, lithium batteries 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).

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, 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. 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, destination, and the State of Operator.

d. The grantee must maintain the following record and upon request make this record available to DOT representatives or enforcement officials. 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: Steve H