



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

September 03, 2021

1200 New Jersey Avenue, SE
Washington, DC 20590

DOT-SP 20904
(FIFTH REVISION)

EXPIRATION DATE: 2025-08-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Piston Automotive, L.L.C.
Redford, MI
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of certain lithium ion batteries each with a net weight greater than 35 kg aboard 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 "exemption" as defined in 1;3.1.1 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 Column 12 and 13 in the ICAO TI in that a lithium ion battery may not exceed 35 kg when transported by cargo aircraft; § 173.185(b)(6) in that transportation aboard aircraft is not authorized, and IA.3 of Packing Instruction 965 of the ICAO TI in that Large Packagings are not authorized, except as specified herein.
5. BASIS: This special permit is based on the modification application of Piston Automotive, L.L.C. dated May 18, 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	9	UN3480	N/A

7. SAFETY CONTROL MEASURES:a. PACKAGING:

(1) Each battery assembly must be packaged in accordance with § 173.185(b), Packing Instruction 965 of the ICAO TI, and the following:

(i) PHEV-A Battery Assembly:

(A) Inner Packaging: Each battery assembly must be surrounded by cushioning material that is non-combustible and nonconductive.

(B) Outer Packaging: The inner packaging must be further packaged within a UN 50D wooden crate meeting the Packing Group II performance standard. The crate must be securely attached to a pallet. The use of alternative packaging as described in D/N: 5953/5954, which complies with the packaging relief provided in § 173.185(b)(5) and complies with Packing Instruction 965 IA.2, Additional Requirements, Paragraph 3 of the ICAO TI, is authorized.

(ii) PHEV-C Battery Assembly:

(A) Inner Packaging: Each battery assembly must be housed within a non-metallic inner packaging in a form of arrays that completely encloses the battery assembly with the upper and bottom trays.

(B) Outer Packaging: The inner packaging must be further packaged within a 4C1 wooden crate that meets the Packing Group II performance standard and is attached to a pallet.

(2) The net weight of a battery assembly in a package may not exceed 172 kg.

- (3) Each outer package may contain not more than one battery assembly.
- (4) The gross weight of a package containing the battery assembly may not exceed 450 kg.

b. OPERATIONAL CONTROLS:

- (1) The authorized lithium ion battery assemblies are:
 - (i) Battery Assembly (PHEV A) of a 14.5 kWh rating with part number LX68-108759-GA composed of module arrays each having a nominal rating of 2.07 kWh in a 12S1P configuration with Samsung prismatic cells (Model No. MP0217NS002A); and
 - (ii) Battery Assembly (PHEV C) of a 13.6 kWh rating with part numbers LK2T-10C790-ABPV/Ab/AC, L1MB-10B759-ABPV/AC/AC/AD/AE/AF composed of module arrays each of which is made up with P39 LG pouch cells and nominally rated at 39 Ah.
- (2) Lithium ion battery assemblies that do not differ from the tested types and which contain lithium ion module arrays and cells that do not differ from the tested types inclusive of those listed in paragraphs 7.b.(1)(i) and (ii) may also be offered for transportation and transported within assemblies under the terms of this special permit.
- (3) For purposes of these testing requirements, a cell, module array or battery assembly type would be determined in accordance with 38.3.2.2 of the UN Manual of Tests and Criteria, 6th Revised Edition.
- (4) Each different cell, module array and battery assembly type must comply with all the conditions of this special permit prior to being offered for transportation. The grantee must submit a new request for a special permit for any different type prior to being offered for transportation.
- (5) The battery assembly must be equipped with an effective means to prevent dangerous reverse current flow when cells or batteries are connected in parallel.
- (6) All battery assemblies must be protected against short-circuiting.
- (7) The state of charge of the battery assemblies may be not more than 30% during transportation.
- (8) A battery assembly must be equipped with a battery management system that has been verified as preventing overcharge, short circuits, and over discharge between the module arrays.

c. TESTING:

(1) All lithium ion cells must be of a type that have passed all required tests as specified in the “UN Manual of Tests and Criteria, 6th Revised Edition.”

(2) All lithium ion module arrays must be of a type that have passed all required tests as specified in the “UN Manual of Tests and Criteria, 6th Revised Edition.”

(3) All lithium ion battery assemblies (14.5 kWh or 13.6 kWh) must be of a type that have passed all required tests as specified in the “UN Manual of Tests and Criteria, 6th Revised Edition”.

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 20904”.

8. SPECIAL PROVISIONS:

a. Under the terms of this special permit, the grantee may only offer hazardous materials (i.e., the grantee is not authorized as a carrier).

b. 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.

c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

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 the States of origin, transit, over flight, and destination of the consignment, as well as the State of the air operator.

e. The grantee must maintain a record of all activity conducted under the authority granted in this special permit and upon request make this information 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-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 <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: MK/TG