

July 23, 2021



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 20814
(SECOND 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 certain lithium batteries with a net mass 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. 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 49 CFR § 173.185(b)(5) 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) in that lithium batteries may not exceed a net mass of 35 kg, except as specified herein.

July 23, 2021

5. BASIS: This special permit is based on the application of SAFT America Inc. dated November 9, 2018 submitted in accordance with § 107.105 and the public proceeding thereon, additional information dated April 22, 2019, and the Pipeline and Hazardous Materials Safety Administration's editorial review under § 107.121 initiated on June 25, 2021.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identi- fication Number	Packing Group
Lithium ion batteries <i>including lithium ion polymer batteries</i>	9	UN3480	N/A

7. SAFETY CONTROL MEASURES:

a. OPERATIONAL CONTROLS:

(1) Batteries (modules) of which the battery assembly is comprised must be Saft batteries of tested types designated ENS MOD-24-VL30P-XX-EQU or ENS MOD-24-VL45E-XX EQU with a maximum rated energy capacity of not more than 2,583 Wh, each comprised of 14 Saft VL30P XX or VL45E XX cells, respectively, where XX refers to NG (tested) or EL (same type). Lithium ion batteries that do not differ (see 38.3.2.2 of the UN Manual of Tests and Criteria) from the tested types and which contain lithium ion cells that do not differ from the tested types inclusive of those listed in the Saft cell test report dated July 27, 2015 and on file with the Office of Hazardous Materials Safety may also be offered for transportation and transported within assemblies under the terms of this special permit.

(2) The maximum rated energy capacity of the battery assembly may not exceed 150 kWh.

(3) Each battery assembly must be comprised of 2 parallel-connected strings of up to 29 but no less than 4 batteries connected in series, and must be fitted with a Master Battery Management Module (MBMM) capable monitoring, controlling the state of charge in all

July 23, 2021

parallel strings, and preventing overcharge, overdischarge, short-circuiting, and any dangerous interaction between the strings including dangerous reverse current flow.

(4) Each battery string must be fitted with a Battery Management Module (BMM) that is capable of controlling battery charge and discharge, monitoring the state of each battery, preventing overcharge, and isolating the string from the battery assembly if necessary.

(5) The state of charge for lithium ion battery assemblies may not exceed 30% when offered for transportation.

(6) There may be no electrical connections from the interior to the exterior of the cabinet while the cabinet is in transport.

b. TESTING REQUIREMENTS:

(1) Cells comprising the batteries must be of a type that has been successfully tested in accordance with Part III, Section 38.3, of the UN Manual of Tests and Criteria, Fifth Revised Edition.

(2) Batteries of which the battery assembly is comprised must be of a type that has been successfully tested in accordance with Part III, Section 38.3, of the UN Manual of Tests and Criteria, Sixth Revised Edition.

c. PACKAGING:

(1) Each battery must have a mass of 12 kg or greater and must have a strong, impact-resistant outer casing.

(2) The battery assembly must be securely mounted within a rigid, water-resistant cabinet meeting National Electrical Manufacturer's Association (NEMA) 4 standards, equipped with access doors, and with approximate overall dimensions of 1,588 mm (62.5 in) high, 1,029 mm (40.5 in) wide and 2,556 mm (100.6 in) long.

(3) Within the cabinet, batteries must be stacked vertically and secured in racks, which are securely and permanently fastened to the structure of the cabinet in

July 23, 2021

conformance with the following:

(i) Batteries must be secured within racks in such a manner as to prevent short circuit, accidental operation and significant movement relative to the rack under the shocks, loadings and vibrations normally incident to transport.

(ii) Each rack must be permanently secured to the structure of the NEMA 4 cabinet in such a manner as to prevent significant movement relative to the cabinet under the shocks, loadings, and vibrations normally incident to transport.

(4) A cooling (air conditioning) unit containing not more than 12 kg of non-flammable, non-toxic refrigerant gas may be mounted external to the cabinet.

(5) The maximum mass of the complete unit including the cabinet with the mounted battery assembly within and its controllers may not exceed 2,000 kg (4,400 pounds).

(6) Not more than one battery assembly may be mounted within the cabinet.

(7) The complete unit consisting of the cabinet containing a battery assembly with its controllers connected and the externally mounted air conditioning unit must be placed on a pallet.

(8) The packaging must comply with Packing Instruction 974 of the Supplement to the ICAO TI. Additionally, waste lithium battery assemblies and lithium battery assemblies being shipped for recycling or disposal are forbidden from air transport, and lithium ion battery assemblies 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).

d. MARKING REQUIREMENTS: The outside of each package (cabinet) covered under the terms of this special permit must be durably and legibly marked and displayed on a background of contrasting color with "DOT-SP 20814".

July 23, 2021

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, 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, and destination and the State of the operator.

d. 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.

July 23, 2021

- 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

July 23, 2021

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