

April 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 20853
(SECOND REVISION)

EXPIRATION DATE: 2025-03-31

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: SolidEnergy Systems, LLC
Woburn, MA
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of prototype rechargeable lithium metal cells 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 § 173.185(a)(1) and 2;9.3 a) of the ICAO TI in that the cells are not of a type that have passed the criteria in Part III, subsection 38.3 of the UN Manual of Tests and Criteria.

5. BASIS: This special permit is based on the application of SolidEnergy Systems, LLC dated March 24, 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 metal batteries*	9	UN3090	N/A

* The authorized hazardous materials are rechargeable lithium metal cells.

7. SAFETY CONTROL MEASURES:

a. OPERATIONAL CONTROLS:

(1) Only prototype lithium metal cells may be offered for transportation under the terms of this special permit. Each different cell type must comply with all the conditions of this special permit prior to being offered for transportation.

(2) Cells identified as Part Number 3000021 each with a nominal energy rating of 25.5 Wh must be mounted within a "battery pack."

(3) Each "battery pack" may contain up to eight (8) cells that are not electrically connected to one another, and each cell must be taped off with insulating electrical tape to prevent short-circuiting.

(4) The state of charge (SOC) for the cells may not exceed ten (10) percent when offered for transportation aboard aircraft but the voltage of each cell may not go below 3.5 V, which is at the zero (0) percent SOC.

b. TESTING: Each cell must have passed the thermal test (T.2) and the external short circuit test (T.5) performed in accordance with the "UN Manual of Tests and Criteria, 6th

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Revised Edition."

c. PACKAGING REQUIREMENTS:

(1) Inner Packaging: Each "battery pack" must be individually packaged in a fully enclosed electrostatically dissipative bag. The enclosed battery pack must be placed in a Pelican 1050™ container. The void space within the latched Pelican™ case must be filled with non-flammable, non-conductive absorbent at the bottom in case of potential leak and fire retardant Porous Expanded Polypropylene (PEPP) foam sheet on the top. The completed Pelican™ case serves as inner packaging;

(2) Intermediate Packaging: Four inner packagings may be placed within a two-sided foam packaging specially machined from fire retardant PEPP foam to hold four inner packagings and to support the weight when used as stacked inserts in a 30-gallon steel drum. Foam inserts are intermediate packagings;

(3) Outer Packaging: The closed intermediate packagings must be further packaged in a UN 1A2 outer packaging that meets Packing Group I performance criteria. No more than seven (7) intermediate packagings per outer packaging are allowed. A blank Fire retardant foam insert must be placed on top of the stack to firmly hold the intermediate packagings in place during transportation. One or more blank inserts must be added as needed when fewer layers of intermediate packagings are stacked to ensure cells are securely held in place during shipment; and

(4) The net lithium content per outer packaging calculated as an equivalent content may not exceed 457 grams (equivalent to 5,712 Wh total).

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 20853.

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).

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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. 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.

(2) Dates and description of each shipment, to include number of cells and batteries.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo-only aircraft.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each aircraft or motor vehicle 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

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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

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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: Andrew Eckenrode/NICKS