DOT-SP 21315
(FIRST REVISION)

EXPIRATION DATE: 2024-01-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Umbra Lab, Inc.
   Santa Barbara, CA

2. PURPOSE AND LIMITATION:
   a. This special permit authorizes the transportation of prototype lithium ion battery modules contained in equipment (spacecraft). This special permit provides no relief from the Hazardous Materials Regulations (HMR) 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.


4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.185(a)(1) in that each lithium battery module need not be of the type proven to meet the criteria in Part III, subsection 38.3 of the UN Manual of Tests and Criteria and § 173.185(b) in that the packaging specified herein may be used.

5. BASIS: This special permit is based on the application of Umbra Lab, Inc. dated December 7, 2021 submitted in accordance with § 107.105 and the public proceeding thereon and additional information dated February 23, 2022.

Tracking Number: 2022024886
6. **HAZARDOUS MATERIALS (49 CFR 172.101):**

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>Hazard Class/Division</th>
<th>Identification Number</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium ion batteries contained in equipment <em>including lithium ion polymer batteries</em></td>
<td>9</td>
<td>UN3481</td>
<td>N/A</td>
</tr>
</tbody>
</table>

7. **SAFETY CONTROL MEASURES:**

   a. **PACKAGING:**

   (1) Each battery module must have a strong, impact-resistant outer casing.

   (2) Each battery module must be securely attached to the bus within the spacecraft to prevent movement and contained in equipment (spacecraft) designed for space application.

   (3) The battery modules contained in equipment must be packaged in the packaging specified in the December 7, 2021 application on file with the Office of Hazardous Materials Safety (OHMS).

   (4) The net weight of the battery modules within a package may not exceed those specified in the December 7, 2021 application on file with OHMS.

   (5) Not more than one spacecraft is permitted within a package.

   (6) The spacecraft must be constructed to prevent against accidental operation during transport.

   b. **TESTING:**

   (1) The battery modules contained in equipment must be composed of cells of a type that has passed all required tests as specified in the UN Manual of Tests and Criteria, 5th Revised Edition.
(2) Each battery module contained in equipment must have passed all required tests in accordance with the SMC document for space launch as described in Umbra Lab, Inc.’s December 7, 2021 application and compared to the UN Manual of Tests and Criteria, 7th Revised Edition.

c. OPERATIONAL CONTROLS:

(1) The integrated battery modules contained in equipment (spacecraft) within each package are composed of the number of lithium ion modules and cells as specified in the December 7, 2021 application on file with OHMS.

(2) The battery modules contained in equipment must be protected from short-circuiting while in transportation.

(3) The battery modules must be equipped with a means of preventing dangerous reverse current flow for cells connected in parallel.

(4) The nominal energy contents of each battery module and the cell are as specified in the December 7, 2021 application on file with OHMS.

d. MARKING: Each package must be marked with the special permit number DOT-SP 21315 in accordance with § 172.301(c).

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 and the HMR.

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

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each motor vehicle used to transport packages covered by this special permit.

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:
All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.

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.

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.:

[Signature]

for William Schoonover
Associate Administrator for Hazardous Materials Safety

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