1. **GRANTEE:** CU Aerospace LLC  
   Champaign, IL

2. **PURPOSE AND LIMITATIONS:**
   a. This special permit authorizes the transportation in commerce of refrigerant gases contained in a non-DOT specification article (spacecraft component). 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 development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.

   c. No party status will be granted to this special permit.

3. **REGULATORY SYSTEM AFFECTED:** 49 CFR Parts 106, 107 and 171-180.

4. **REGULATIONS FROM WHICH EXEMPTED:** 49 CFR § 173.232(f) in that the article is a non-DOT specification packaging; and § 173.232(g)(3) in that the receptacles containing refrigerant gases are non-DOT specification.

5. **BASIS:** This special permit is based on the application of CU Aerospace LLC dated June 2, 2022, submitted in accordance with § 107.105 and the public proceeding thereon.

Tracking Number: 2022064090
6. HAZARDOUS MATERIALS (49 CFR 172.101):

<table>
<thead>
<tr>
<th>Hazardous Material Description</th>
<th>Hazard Class/Division</th>
<th>Identification Number</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Articles containing non-flammable, non-toxic gas, n.o.s (R-236fa)</td>
<td>2.2</td>
<td>UN3538</td>
<td>N/A</td>
</tr>
<tr>
<td>Articles containing non-flammable, non-toxic gas, n.o.s (R134a)</td>
<td>2.2</td>
<td>UN3538</td>
<td>N/A</td>
</tr>
</tbody>
</table>

7. SAFETY CONTROL MEASURES:

a. PACKAGING: The prescribed packaging is a non-DOT specification, article described as a satellite subsystem (propulsion system) consisting of a propellant tank, which contains the gas. The propellant tank is constructed of a titanium alloy (Ti-6Al-4V), has an operating pressure of 110.9 psia at 60°C, is electron beam welded, and has a minimum thickness of 2 mm. The packaging must conform to CU Aerospace’s drawings, which are on file with the Office of Hazardous Materials Safety.

b. TESTING: The article must be tested with the following conditions:
   
   (1) Each article must be leakage tested to at least 30 psig and must not exceed $10^{-4}$ scc/s of He.
   
   (2) Each article must be proof pressure tested to at least 165 psig without leakage or deformation.
   
   (3) One article must be successfully burst tested at 300 psig or greater prior to transportation of any articles under this special permit.

c. OPERATIONAL CONTROLS: Each article (propulsion system) must be securely packed in a Pelican series 1300 or 1400 case for transportation.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this special permit, but receives a packaging covered by this special permit, may reoffer it for transportation provided no modification or change is made to the packaging and it is offered for transportation in conformance with this special permit and the HMR.
b. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

c. The applicant must submit copies of test reports for the tests listed in Paragraph 7.b. within six months of the issuance this special permit.

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 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.:

[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](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: ae