June 06, 2018

U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety Administration**

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

DOT-SP 16231
(THIRD REVISION)

EXPIRATION DATE:2021-06-30

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Thales Alenia Space
Cannes, la Bocca, France
(US Agent: ShipMate, Inc., Sisters, OR)

2. PURPOSE AND LIMITATION:

a. This special permit authorizes the transportation in commerce of certain non-DOT specification containers (satellite assemblies) containing installed lithium ion batteries, certain Division 2.2, and 2.3 liquefied and compressed gases and other hazardous materials identified in paragraph 6 of the special permit. 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 development of this special permit only considered the hazards and risks associated with transportation in commerce.

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

d. This special permit serves as an approval under special Provision A99 of the ICAO TI as a "Competent Authority Approval" as defined under 49 CFR §107.1.

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

Tracking Number: 2018029383

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR 172.101 Column (9B) in that lithium ion batteries contained in equipment may not exceed 35 kg, § 173.301(f) in that containers are not fitted with pressure relief devices, and §§ 173.302a(a)(1), and 173.304a(a)(2) in that non-DOT specification packagings are authorized.

5. BASIS: This emergency special permit is based on the application of Thales Alenia Space dated February 15, 2018, submitted in accordance with § 107.105 and the public preceding thereon.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper shipping name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Ammonia, anhydrous	2.2/2.3*	UN1005	N/A
Cartridges, power device**	1.4S	UN0323	N/A
Igniters**	1.4S	UN0454	N/A
Helium, compressed	2.2	UN1046	N/A
Lithium ion batteries contained in equipment***	9	UN3481	II

* Division 2.3 for international transportation. Division 2.2 as an alternate when only domestic transportation is involved.

** Devices must have a valid EX approval; and no packing group was assigned for international transportation.

*** Only low production lithium ion batteries may be offered for transportation. ("Low production" is defined as a production run of not more than 100 batteries annually of a particular type.) Each different battery type must comply with all the conditions of this Special Permit prior to being offered for transportation.

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packagings prescribed are up to 275 heat pipes, pressure vessels (tanks), two lithium ion batteries and other non-DOT specification containers which are installed in spacecraft or are components of the spacecraft. The spacecraft must be over-packed in a wood or metal box. The tanks are constructed in accordance with the ISO 7866 or ISO 9809-1 Standards. The tanks have a maximum working pressure of 200 bars and a maximum test pressure of 300 bars. The heat pipes are not equipped with pressure relief devices and are described as follows:

(1) Heat pipes must be constructed of aluminum alloy 6063-T5 and have a minimum wall thickness of 0.75 millimeters; heat pipes must be sealed on one end with a crimp and a soldered plug on the other end. Heat pipes must be in accordance with the application on file with the OHMSAPD.

(2) The tanks have a maximum working pressure of 200 bars and a maximum test pressure of 300 bars. The heat pipes are not equipped with pressure relief devices.

(3) Two lithium ion batteries (nominal voltage of 3.8V) consisting of not more than 12 cells (Model LSE190-101 with a rated capacity of 190 Ah) installed within the spacecraft must be protected against external shorts and must not be activated during transportation.

(4) Lithium batteries or modules must have a strong, impact-resistant outer casing.

(5) The total net weight of lithium ion batteries contained in equipment (spacecraft) may not exceed 150 kg.

b. TESTING:

(1) Heat Pipe: Each heat pipe must be proof pressure tested to a pressure of at least 100 bars (1450 psig) and must have minimum burst pressure of 208 bars (3017 psig).

(2) All cells within the lithium ion batteries contained in equipment must be of the type that has passed the tests in accordance with Sub-Section 38.3 of

the United Nations Manual of Tests and Criteria, Fifth Revised Edition.

(3) A battery of a specific type must be subjected to a short circuit test (connecting a conductor across the positive and negative terminals and maintaining this short circuit for at least 1 hour), which may be conducted at a temperature range between room temperature (about 23 °C) and 55 °C ± 2 °C.

(4) Any lithium ion battery differing from a specific type that has been tested must be subjected to a new short circuit test in accordance with 7.b.(3). (For the definition of a "specific type," refer to Section 38.3.2.2 of the UN Manual of Tests and Criteria, Sixth Revised Edition).

c. OPERATIONAL CONTROLS:

(1) Each heat pipe may not contain more than 180 grams of anhydrous ammonia.

(2) Emergency response information provided with the shipment and available via an emergency response telephone number must indicate that the heat pipes are not fitted with pressure relief devices and provide appropriate guidance in case receptacles are exposed to fire.

(3) During transport, the pressure in the tanks must be maintained in accordance with the values provided in the application on file with OHMSAPD.

(4) The state of charge of the lithium ion battery contained in equipment may not exceed 50% during transport.

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 modifications or changes are made to the package and it is reoffered 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. MARKING: The satellite shipping container or other outer packaging must be marked "DOT-SP 16231."

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

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a current 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:

- 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.:

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: BrMoore:SHwang/TD