June 30, 2023

U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

DOT-SP 21167
(THIRD REVISION)

EXPIRATION DATE: 2027-05-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: KULR Technology Corporation
San Diego, CA

2. PURPOSE AND LIMITATIONS:

a. This special permit authorizes the manufacture, mark, sale, and use of alternative packaging for the transportation in commerce of prototype and low production lithium cells and batteries, and those contained in or packed with equipment. 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. 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. In accordance with 49 CFR 107.107(a), party status may not be granted to a manufacturing special permit. These packagings may be used in accordance with 49 CFR 173.22a.

d. This special permit serves as an approval under Special Provision A88 and State Variation US 3 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.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 172.101 Hazardous Materials Table Column (9B) in that the net weight of each battery may not exceed 35 kg and § 173.185(a)(1) in that low production and prototype batteries have not passed the criteria in Part III, subsection 38.3 of the UN Manual of Tests and Criteria, except as specified herein.

5. BASIS: This special permit is based on the application of KULR Technology Corporation dated April 13, 2023, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Material Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Lithium ion batteries *including lithium ion polymer batteries*	9	UN3480	N/A
Lithium ion batteries contained in equipment *including lithium ion polymer batteries*	9	UN3481	N/A
Lithium ion batteries packed with equipment *including lithium ion polymer batteries*	9	UN3481	N/A
Lithium metal batteries *including lithium alloy batteries*	9	UN3090	N/A
Lithium metal batteries contained in equipment *including lithium alloy batteries*	9	UN3091	N/A
Lithium metal batteries packed with equipment *including lithium alloy batteries*	9	UN3091	N/A

7. SAFETY CONTROL MEASURES:

a. OPERATIONAL CONTROLS:

(1) Only prototype and low production lithium ion cells or batteries and lithium metal cells or batteries, and those lithium cells or batteries contained in or packed with equipment, may be offered for transportation under the terms of this special permit. (“Low production” is defined as a production run of not more than

100 cells or batteries annually of a particular type.) Each different cell and battery type must comply with all the conditions of this special permit prior to being offered for transportation.

(2) The state of charge for prototype and low production lithium ion cells or batteries may not exceed 30% when offered for transportation aboard cargo-only aircraft. This paragraph only applies to UN3480.

(3) The batteries including those packed with and contained in equipment must be equipped with an effective means of preventing dangerous reverse current flow when cells are connected in parallel.

(4) Cells and batteries including those packed with and contained in equipment must be protected against short circuits. Suitable methods of protecting the cells or batteries against short circuits include, but are not limited to, placing the batteries in individual plastic bags; or taping and covering the exposed terminals. The means of protection used to prevent short circuits must remain in place while the packages are in transportation.

(5) Equipment containing lithium cells or batteries must be protected from inadvertent activation.

(6) Transportation by ferry or cargo vessel is not authorized under the terms of this special permit.

b. TESTING:

(1) Each different cell and battery type must be subjected to the following tests:

(i) For cells of a type that have not been demonstrated by testing to pass all required tests as specified in the UN Manual of Tests and Criteria, 6th Revised Edition or any subsequent revision and amendment applicable at the date of the type testing (any subsequent revision and amendment to the UN Manual of Tests and Criteria may not be used unless incorporated by reference (see § 171.7)), three cells must be stored at 55 °C ± 2 °C for at least 48 hours followed by a short circuit test (connecting a conductor across the positive and negative terminals and maintaining this short circuit for at least 1 hour after the case temperature has returned to 55 °C ± 2 °C); and

(ii) One battery assembled from the cells of a type that have not been demonstrated by testing to pass all required tests as specified in the UN Manual of Tests and Criteria, 6th Revised Edition or any subsequent

revision and amendment applicable at the date of the type testing (any subsequent revision and amendment to the UN Manual of Tests and Criteria may not be used unless incorporated by reference (see § 171.7)) must be stored at 55 °C ± 2 °C for at least 48 hours followed by a short circuit test (connecting a conductor across the positive and negative terminals and maintaining this short circuit for at least 1 hour after the case temperature has returned to 55 °C ± 2 °C); or

(iii) If batteries comprise cells of a type that have been demonstrated by testing to pass all required tests as specified in the UN Manual of Tests and Criteria, 6th Revised Edition or any subsequent revision and amendment applicable at the date of the type testing (any subsequent revision and amendment to the UN Manual of Tests and Criteria may not be used unless incorporated by reference (see § 171.7)), 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 (approximately 23 °C) and 55 °C ± 2 C.

(2) Cells and batteries are considered safe to transport under the terms of this special permit if the cells and batteries show no disassembly or fire after completion of these tests. A cell or battery type that has not passed these tests is not authorized to be offered for or transported under the terms of this special permit.

c. PACKAGING:

(1) Prescribed packaging is as follows:

(i) Inner Packaging: Cells, batteries including those packed with and contained in equipment must be individually packed in a thermal runaway shield (TRS) packaging that consists of a proprietary polymer enclosure with a carbon fiber core containing a cooling liquid as described in KULR Technology Corporation's application dated December 18, 2020, and the test reports dated October 29, 2020, and October 15, 2021, which are on file with the Office of Hazardous Materials Safety (OHMS). The TRS packaging must completely enclose the cells, batteries or equipment containing cells or batteries.

(ii) Outer Packaging: The inner packaging must be placed into a UN 4G outer packaging of a tested design type provided the total gross mass of the package does not exceed the gross mass for which the design type has been tested. Other types of outer packagings, as currently authorized in Metal (4A, 4B, 4N), wooden (4C1, 4C2, 4D, 4F), or solid plastic (4H2)

boxes and metal (1A2, 1B2, 1N2), plywood (1D), or plastic (1H2) drums may additionally be used. The outer packaging must meet Packing Group I performance criteria.

(iii) Cells or batteries having a mass of 12 kg or greater and a strong, impact-resistant outer casing, including those packed with and contained in equipment, may be packed in rigid strong outer packagings, instead of packagings meeting the UN performance packaging requirements in paragraph 7.c.(1)(ii) of this special permit.

(iv) Cells and batteries must additionally be packaged in accordance with Packing Instruction 910 of the Supplement of the ICAO TI.

(2) A cell or battery with a net mass of more than 30 kg is limited to one cell or battery per outer packaging.

(3) For transportation aboard aircraft, the aggregate energy content of each inner package may not exceed 2.5 kWh or the equivalent lithium content (200 grams).

d. MARKING REQUIREMENTS: Each package, and overpack if used, prepared under the provisions of this special permit must be plainly marked with:

(1) DOT-SP 21167

(2) "FORBIDDEN FOR TRANSPORTATION BY VESSEL" at least 6 mm (0.25 inch) in height.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

b. A person who is not a holder of this special permit, but 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 offered 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. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Safety for a specific manufacturing facility.

e. A current copy of this special permit must be maintained at each facility where the packaging is manufactured under this special permit. It must be made available to a DOT representative upon request.

f. ADVANCED NOTICE OF FAA HAZARDOUS MATERIALS SAFETY PROGRAM: For shipments aboard cargo-only aircraft of hazardous materials authorized under this special permit, persons using the packaging authorized by this special permit must notify and be given authorization to offer shipments under the terms of this special permit by the FAA Office of Hazardous Materials Safety (9-AWA-AXH-SPFlightNotifications@faa.gov) before shipment aboard cargo-only aircraft may occur. This notification must be given at least five business days in advance of the need for authorization from FAA so that a fitness evaluation can be conducted. Adherence to the five business days notification does not guarantee persons using the packaging authorized by this special permit will be authorized by FAA to offer shipments aboard cargo-only aircraft.

g. 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.

h. For shipments aboard cargo-only aircraft under the terms of this special permit, flights must originate from a location within the United States of America. International destinations are not prohibited.

i. For each cell and battery type, persons using the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6 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, rail freight, 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:

    - 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 Materials Safety Administration, U.S. Department of Transportation, East Building PHH-13, 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 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: Jephthah Nti