



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

**March 24, 2025**

1200 New Jersey Avenue, SE  
Washington, DC 20590

DOT-SP 21739  
(FIRST REVISION)

**EXPIRATION DATE: 2026-09-30**

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: G-Shang Metal Corporation  
Taichung City, Taiwan

U.S. AGENT: Josette Chiu  
Huntington Beach, CA

2. PURPOSE AND LIMITATIONS:

a. This special permit authorizes the manufacture, mark, sale, and use of non-DOT specification cylinders that meet the design and construction requirements for UN composite cylinders specified in § 178.71(1)(ii) and in ISO Standard 11119-2, except as specified herein, for the transportation in commerce of the hazardous materials authorized by this special permit. 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. 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.

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

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.301b(a) in that a non-UN pressure receptacle is not authorized, except as specified herein.

NOTE: This does not relieve the holder of this special permit from securing an approval for manufacturing cylinders from the Associate Administrator for Hazardous Materials Safety.

5. BASIS: This special permit is based on the application of G-Shang Metal Corporation dated March 20, 2024, submitted in accordance with § 107.105 and the public proceeding thereon and additional information dated October 28, 2024.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Air, compressed	2.2	UN1002	N/A
Argon, <i>compressed</i>	2.2	UN1006	N/A
Compressed gas, n.o.s. (oxygen and air)	2.2	UN1956	N/A
Compressed gas, n.o.s. (oxygen and nitrogen)	2.2	UN1956	N/A
Helium, compressed	2.2	UN1046	N/A
Nitrogen, compressed	2.2	UN1066	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packagings prescribed are non-DOT specification fully wrapped fiber reinforced composite cylinders with an aluminum alloy 6061-T6 liner as described in G-Shang Metal Corporation's application on file with the Office of Hazardous Material Safety. The four (4) designs (G410CTP0003003, 181AL00030; G410CTP0003004, 181AL00030(A); G410CTP0004802-ISO, 181AL00048-ISO; G410CTP0004802-ISO(A), 181AL00048-ISO(A)) must meet the design and construction requirements for UN composite cylinders specified in § 178.71(1)(ii) and in ISO Standard 11119-2:2012 +A1: 2014 (Gas Cylinders of Composite Construction- Specification and Test Methods – Part 2: (Fully wrapped reinforced composite gas

cylinders with load-sharing metal liners), except that cylinders manufactured under this special permit are limited to a maximum service pressure of 310 bar (4497 psig) with a water volume of less than 0.5 L.

b. MARKING:

- (1) Each cylinder must be permanently marked (other than by stamping) in the composite on the sidewall. The marking must be easily visible and must be protected from external damage due to the environment and handling.
- (2) The marking must contain the following:
  - (i) DOT special permit number (DOT-SP 21739) followed by service pressure expressed in bar (psi).
  - (ii) A serial number and the manufacturer's identification number or a symbol as obtained from the Associate Administrator for Hazardous Materials Safety, located just below or immediately following the DOT marking above.
  - (iii) The DOT inspector's official mark must be placed near the serial number. The marking must contain the date (month and year) of the initial hydraulic proof pressure test for that cylinder.
  - (iv) The size of letters and numbers used must be at least 0.64 cm (1/4 inch) high if space permits.
  - (v) The following are examples of an authorized format for marking:  
  
DOT -SP 21739-310 bar (4497psi)  
  
1234-MMI (or symbol)  
  
II-MM/YY
  - (vi) Additional markings are permitted in the composite, provided the additional markings do not obscure the required marking and are not detrimental to the integrity of the cylinder.
  - (vii) Provisions for marking of the required requalification dates and RIN information must be made near the cylinder markings.

c. REQUALIFICATION:

(1) Each cylinder must be requalified once every 5 years by a qualified person holding a valid DOT RIN using a hydraulic proof pressure test equal to 1.5 times the marked service pressure. The pressure must be held for a minimum of 3 minutes without a loss of pressure. The test equipment must conform to the accuracy requirement of § 180.205(g).

(2) Visual Inspection: Each cylinder must be visually inspected in accordance with CGA Pamphlet C-6.2, Guidelines for Visual Inspection and Requalification of Fiber Reinforced High Pressure Cylinders.

(3) Persons who perform inspection and testing of cylinders subject to this special permit must comply with § 180.205(b) and with all the terms and conditions of this special permit.

(4) Requalification date (month/year) must be permanently marked on the cylinder as specified in paragraph § 180.213. The marking of the RIN symbol on the cylinder certifies compliance with all the terms and conditions of this special permit.

d. OPERATIONAL CONTROLS:

(1) Cylinders manufactured under this special permit are authorized for a maximum service use of 15 years from the date of manufacture.

(2) Cylinders used in oxygen service must conform with § 173.302(b).

(3) A cylinder that has been subjected to fire may not be returned to service.

(4) Transportation of oxygen is only authorized aboard aircraft when in accordance with § 175.501.

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 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 offered 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.
  - 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.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, passenger-carrying aircraft, and cargo aircraft.
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 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.:



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.

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