March 28, 2024

U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

DOT-SP 14453
(SEVENTEENTH REVISION)

EXPIRATION DATE: 2028-03-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: FIBA Technologies, Inc.
Littleton, MA

2. PURPOSE AND LIMITATION:

a. This special permit authorizes the transportation in commerce of certain Division 2.1 and Division 2.2 materials in DOT Specification 3A, 3AA, 3AX, 3AAX and 3T cylinders, and cylinders manufactured under DOT-SP 13230 and DOT-SP 13258. The cylinders have a water capacity over 125 lbs. and are requalified by 100% Ultrasonic Examination (UE) on a ten (10) year basis in lieu of every five years. 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.

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

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 180.209(a) and part of § 180.209 (b), in that cylinders with a capacity over 125 lbs. that may be requalified every ten years and they are not required to be removed from bundles (tube trailers) and hammer tested prior to each refill; and

§ 180.209(b)(1)(iv) in that ultrasonic examination is authorized in lieu of hydrostatic testing and visual inspection.

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

5. BASIS: This special permit is based on the application of FIBA Technologies, Inc. dated January 6, 2024, and submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Air, compressed	2.2	UN1002	N/A
Argon, compressed	2.2	UN1006	N/A
Helium, compressed	2.2	UN1046	N/A
Hexafluoroethane, compressed or Refrigerant gas R 116	2.2	UN2193	N/A
Hydrogen, compressed	2.1	UN1049	N/A
Liquefied gas, flammable, n.o.s.(Disilane)	2.1	UN3161	N/A
Neon, compressed	2.2	UN1065	N/A
Nitrogen trifluoride, compressed	2.2	UN2451	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Oxygen, compressed	2.2	UN1072	N/A
Silane	2.1	UN2203	N/A

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Sulfur hexafluoride	2.2	UN1080	N/A
Tetrafluoromethane, compressed or Refrigerant gas R 14	2.2	UN1982	N/A
Compressed gas, n.o.s. (mixture of air, hydrogen, argon, helium, neon, nitrogen and/or oxygen)	2.2	UN1956	N/A
Compressed gas, flammable, n.o.s. (mixture of air, hydrogen, argon, helium, neon, nitrogen and/or oxygen)	2.1	UN1954	N/A
1-Chloro-1, 1-difluiorethane *or* Refrigerant gas 142b	2.1	UN2517	N/A
Chlorodifluoromethane *or* Refrigerant gas R 22	2.2	UN1018	N/A
Cyclopropane	2.1	UN1027	N/A
1,1-Difluoroethylene *or* Refrigerant gas 1132a	2.1	UN1959	N/A
Ethylene, compressed	2.1	UN1962	N/A
Krypton, compressed	2.2	UN1056	N/A
Methane, compressed *or* Natural gas, compressed (with high methane content)	2.1	UN1971	N/A
Nitrous oxide	2.2	UN1070	N/A
Trifluoromethane *or* Refrigerant gas R 23	2.2	UN1984	N/A
Xenon, compressed	2.2	UN2036	N/A
Chlorinated hydrocarbons, fluorinated hydrocarbons or liquefied hydrocarbons	2.1, 2.2	Various	N/A

Hazardous Materials Description			
Proper Shipping Name	**Hazard Class/ Division**	**Identi-fication Number**	**Packing Group**
Mixtures of air, argon, cyclopropane, ethylene, helium, hydrogen, krypton, neon, nitrogen, nitrous oxide, oxygen, sulfur hexafluoride, and xenon, that are commercially free from corroding components and have a dew point at or below minus 52°F at 1 atmosphere	2.1, 2.2	Various	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packaging prescribed are DOT 3A, 3AA, 3AX, 3AAX and 3T cylinders, and non-DOT specification cylinders manufactured under DOT-SP 13230 and DOT-SP 13258 are subjected to periodic retesting, reinspection and marking prescribed in §§ 180.205 and 180.209, and 180.213 except that:

(1) The cylinder must meet all the requirements specified in § 180.209(b) except that the cylinder may have a water capacity over 125 lbs. and is not hammer tested prior to each refill;

(2) Each cylinder must be retested at least once every 10 years by utilizing the 100 percent ultrasonic examination (UE) procedures authorized in DOT-SP 10922 (FIBA Technology, Inc.) except as following:

(i) For cylinders with an outside diameter of 18 inches or larger the Standardization Ring must include a ½" diameter flat bottom hole (FBH) and the area corrosion flaw must be less or equal to 1.5 sq. inch;

(ii) The calibration ring for a DOT-3AA cylinder (ton cylinder) with two openings and DOT-3T, 3A, 3AX, or 3AAX cylinders, or non-DOT specification cylinders manufactured under DOT-SP 13230 and DOT-SP 13258 must include a simulated defect for a longitudinal sidewall crack (LSC). A longitudinal notch must be machined into the internal surface of the tube or the representative ring to simulate LSC line corrosion. Dimensions of the LSC notch for a DOT 3AA, 3A, 3AX, and 3AAX tubes, or non-DOT specification cylinders manufactured under DOT-SP 13230 must be 0.1 of t_m depth, 2-inch long and less than or equal to 0.02 inches in width. Dimensions of the LSC notch for a DOT 3T tube or non-DOT specification cylinders manufactured under DOT-SP 13258 must be

0.05 of t_m depth, 2-inch long and less than or equal to 0.02 inches in width;

(iii) The reference representative ring with machined LSC notch(s) must be placed in the UE system. Each notch must be detected by a minimum of two shear wave beams that strike the LSC from opposite directions (e.g. the first shear wave direction is clock wise and second shear wave direction is counter-clock wise). The UE gain must be increased until the signal from the notch is maximized at 80 percent of the screen height.

(3) Every five years, each cylinder/tube including the cylinder neck and flange/sleeve area must be subjected to external visual inspection (without disassembly) in accordance with CGA pamphlet C-6 by a valid Requalification Identification Number (RIN) holder. A tube with excessive corrosion around the neck or under the flange/sleeve must be removed and examined further in accordance with CGA Pamphlet C-23. The results of the visual inspection must be recorded for each cylinder/tube and the report submitted to the Office of Hazardous Materials Safety (OHMS) upon request. The RIN holder performing the 5-year visual inspection must mark their RIN number and the month and year of inspection on the packaging.

b. OPERATIONAL CONTROLS:

(1) Prior to use, the external neck threads and flange/sleeve of each tube with a diameter greater than or equal to 18” and mounted on tube trailers or modules must be inspected in accordance with CGA Pamphlet C-23. This inspection must be periodically repeated at least once every ten years.

(2) This special permit is limited to the DOT cylinders described in paragraph 7.a.

(3) Maximum cycling (number of fillings) of each cylinder in a 10-year period must be less than or equal to 600. FIBA must record all fillings of each cylinder and submit the report to OHMS upon request.

(4) Prior to use under this special permit, each DOT 3T cylinder or non-DOT specification cylinders manufactured under DOT-SP 13258 must be subjected to shear wave ultrasonic examination (UE). The UE must be performed by an authorized DOT UE special permit holder or cylinder manufacturer. Maximum acceptance defect (sidewall crack) for a tube that is tested by UE shear wave is 5% of the minimum design wall thickness of the tube.

(5) All gases and gas mixture must have a dew point at or below minus 52 °F at one atmosphere.

(6) Carbon dioxide or corrosive gas in any concentration cannot be added to cylinders.

(7) Hydrogen or hydrogen bearing gases are not authorized in DOT Specification 3T cylinders or non-DOT specification cylinders manufactured under DOT-SP 13258.

(8) No person may perform requalification of cylinders/tubes subject to this special permit using UE (or AE/UE) unless:

(i) That person is an employee of FIBA and has a current copy of this special permit at the location of such requalification, and

(ii) Complies with all the terms and conditions of requalification for this special permit.

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 modification or change is made to the package or its contents 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:

(1) Cylinders shipped in bundles or ISO frames. An exterior tube on each side of the bundle or ISO frame must be marked in letters and numbers at least 2 inches high on a contrasting background "DOT-SP 14453". Additionally, the current retest date must be marked on the rear or side of the bundle or ISO frame at approximately eye level. In the event retest dates of cylinders differ in a bundle or an ISO frame, the retest date displayed will be that of the oldest retest date, meaning the date of the retest that must occur first.

(2) Cylinders shipped individually. Each cylinder must be plainly and durably marked "DOT-SP 14453" near the existing DOT markings.

d. Transportation of Division 2.1 (flammable gases) materials are not authorized aboard cargo vessel or cargo-only aircraft unless specifically authorized in the Hazardous Materials Table (§ 172.101).

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, and cargo--only aircraft as currently authorized by the HMR for the hazardous materials being transported; and as authorized in DOT-SP 13230 and DOT-SP 13258.

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:

- 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-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: KH