

November 28, 2016



U.S. Department
of Transportation

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

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 20245

EXPIRATION DATE: 2018-10-31

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: Jaguar Instruments Inc.
Houston, TX
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification cylinders containing certain hazardous materials. 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.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302(a) and 173.304(a) in that non-DOT specification cylinders are not authorized, except as specified herein.
5. BASIS: This special permit is based on the application of Jaguar Instruments Inc. dated April 9, 2016, submitted in accordance with § 107.105 and the public proceeding thereon and additional information submitted October 4, 2016.

6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
1,2-Dichloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 114	2.2	UN1958	N/A
Air, compressed	2.2	UN1002	N/A
Ammonia solutions, relative density less than 0.880 at 15 degrees C in water, with more than 35 percent but not more than 50 percent ammonia	2.2	UN2073	N/A
Butane see also Petroleum gases, liquefied	2.1	UN1011	N/A
Carbon dioxide	2.2	UN1013	N/A
Compressed gas, flammable, n.o.s.	2.1	UN1954	N/A
Compressed gas, toxic, n.o.s. Inhalation Hazard Zone D	2.3	UN1955	N/A
Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone D	2.3	UN1953	N/A
Dichlorodifluoromethane or Refrigerant gas R 12	2.2	UN1028	N/A
Ethane	2.1	UN1035	N/A
Gasoline includes gasoline mixed with ethyl alcohol, with not more than 10% alcohol	3	UN1203	II
Helium, compressed	2.2	UN1046	N/A

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Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Hydrocarbon gas mixture, compressed, n.o.s.	2.1	UN1964	N/A
Hydrocarbon gas mixture, liquefied, n.o.s.	2.1	UN1965	N/A
Hydrocarbons, liquid, n.o.s.	3	UN3295	I, II or III
Isobutane see also Petroleum gases, liquefied	2.1	UN1969	N/A
Isopropanol or Isopropyl alcohol	3	UN1219	II
Kerosene	3	UN1223	III
Liquefied gas, flammable, n.o.s.	2.1	UN3161	N/A
Liquefied gas, n.o.s.	2.2	UN3163	N/A
Methane, compressed or Natural gas, compressed (with high methane content)	2.1	UN1971	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Oil gas, compressed	2.3	UN1071	N/A
Petroleum crude oil	3	UN1267	I, II or III
Petroleum distillates, n.o.s. or Petroleum products, n.o.s.	3	UN1268	I
Petroleum gases, liquefied or Liquefied petroleum gas	2.1	UN1075	N/A
Propane see also Petroleum gases, liquefied	2.1	UN1978	N/A

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Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Liquefied gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone A</i>	2.3	UN3160	N/A
Liquefied gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone B</i>	2.3	UN3160	N/A
Liquefied gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone C</i>	2.3	UN3160	N/A
Liquefied gas, toxic, flammable, n.o.s. <i>Inhalation Hazard Zone D</i>	2.3	UN3160	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification stainless steel cylinder. Cylinders must conform to Jaguar Instruments Inc. sketches, photographs, drawings and calculations on file with the Office of Hazardous Materials Safety Approvals and Permits Division. Cylinders must conform to all regulations applicable to DOT Specification 3E cylinders (§§ 178.35 and 178.42), except as follows:

§ 178.42 (a) *Type, size and service pressure.*

The cylinder is a seamless steel cylinder with an outside diameter not greater than 4.5 inches, a length less than 2 feet, maximum water capacity of 90 cubic inches and a service pressure of 1,800 psig.

§ 178.42 (d) *Manufacture.*

Cylinders must be constructed from seamless stainless steel tubing, with flanged flat head end enclosures at each end restrained by tie rods, and containing a floating piston which forms two pressure chambers. Each head shall be equipped with a safety relief device.

§ 178.42 (f) *Hydrostatic test.*

Cylinders must be tested as follows: One cylinder out of every 500 must be tested to failure. The unit must fail at greater than 6,000 psi with no fragmentation or otherwise showing lack of ductility. All other cylinders must be subjected to a hydrostatic pressure of 3,000 psig for 1 minute without distortion or indication of defects.

§ 178.42 (g) *Leakage test.*

All cylinders must be pressurized by gas or air pressure to 1,800 psig (service pressure) and observed for 15 seconds. No bubbles may be present during test or while reducing pressure. Any leaking cylinders must be rejected.

§ 178.42(i) *Marking.*

Cylinders must be marked in accordance with this section except that "DOT-SP 20245" must be marked in lieu of "DOT 3E".

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 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

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registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals 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. Transportation of Division 2.1 (flammable gases) and Division 2.3 (gases which are poisonous by inhalation) 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.
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.

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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
Acting 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-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: SMITH