U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

DOT-E 10646
(SEVENTH REVISION)

FEB 6 2003

EXPIRATION DATE: January 31, 2005

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Schlumberger Well Services, a Division of Schlumberger Technology Corporation, Sugar Land, Texas

2. PURPOSE AND LIMITATION:

a. This exemption authorizes the transportation in commerce of flammable gases in a non-DOT specification cylinder. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.

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

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.302a(a), 173.304a(a) and 175.3 in that a non-DOT-specification cylinder is not allowed, except as specified herein.

5. BASIS: This exemption is based on the application of Schlumberger dated January 29, 2003, 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**
Compressed gas, flammable, n.o.s.	2.1	UN1954	N/A
Liquefied gas, flammable, n.o.s	2.1	UN3161	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is an oil well sampling cylinder, threaded on both ends, with a design pressure of 20,000 psig. Each cylinder must comply with the design calculations, drawings, material specifications and engineering specifications submitted with Schlumberger's application on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA) and conforming with DOT 3A specification (§§ 178.35 and 178.36) except as follows:

§ 178.35(e) *Safety devices*

The cylinder assembly need not be fitted with a safety relief device. However, when subjected to pool fire the teflon seals used in the assembly must fail and provide adequate venting with a start to discharge pressure not exceeding hydrostatic test pressure.

§ 178.35(f) *Marking*

Applies except that cylinders must be marked "DOT-E 10646" in place of "DOT-3A" and that the size of the marking must be at least 3/16 inches high and clearly visible.

§ 178.36(b) *Steel*

The authorized materials of construction are Inconel 718, Titanium Beta-C, Monel K-500, and MP35N per Schlumberger Material Specifications SH400198-C, SH708280-C, SH708117-A, and SP170222 respectively, as revised in the supplemental information dated June 1, 1992. All materials must meet the requirements of the National Association of Corrosion Engineers (NACE) specification MR-01-75 for suitability in hydrogen sulfide (H_2S) service.

§ 178.36(d) *Manufacture*

Cylinders must be manufactured using equipment and processes adequate to ensure that each cylinder produced conforms to the requirements of this exemption. Material stock must be inspected to assure cleanliness and be free of defects that are likely to weaken the finished cylinder. The final dimensions of the finished cylinder must conform to Schlumberger Drawing No. DH433947 Revision AB, dated January, 1990, and drawings attached thereto on file with OHMEA.

§ 178.36(f) *Wall thickness*

Minimum wall thickness is for the cylinder may not be less than 0.324 inches.

§ 178.36(g) *Heat treatment*

The completed cylinder need not be heat treated. However, the heat treatment of the purchased stock material must conform to the Schlumberger Engineering Specifications SH400198-C, SH708280-C, SH708117-A, and SP170222-G, as applicable on file with OHMEA.

§ 178.36(k) *Physical tests*

Physical tests will be performed in accordance with Schlumberger Engineering Specification EH433570 on file with OHMEA.

§ 178.36(l) *Acceptable results* for physical tests

(1) For Inconnel 718 bar stock:
Tensile strength: 175,000 psi minimum
Yield strength: 125,000 psi minimum
Elongation: 20% on 1 inch gage specimen

(2) For Titanium Beta-C bar stock:
Tensile strength: 175,000 psi minimum
Yield strength: 165,000 psi minimum
Elongation: 5% on a 1 inch gage specimen

(3) For Monel K-500, Age hardened stock:
Tensile strength: 140,000 psi minimum
Yield strength: 100,000 psi minimum
Elongation: 25% on a 1 inch gage specimen

(4) All other physical test results must conform to the values specified in Schlumberger Material Specifications SH400198-C, SH708280-C, SH708117-A, and SP170222 on file with OHMEA.

b. <u>TESTING</u> - Each cylinder must be reinspected and hydrostatically retested every five years in accordance with § 180.209, as prescribed for DOT 3A specification cylinders. Reheat treatment or repair of rejected cylinders is not authorized. When a hydrostatic retest of a cylinder is performed due to equipment failure as authorized in §180.209(f), only two such retests are permitted.

c. OPERATIONAL CONTROLS - Each cylinder must be packed in strong outside packaging. The shipping container as shown in the Schlumberger drawing number DH708301 Rev. AA, is authorized for two cylinders.

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this exemption who receives a package covered by this exemption 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 exemption and the HMR.

b. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

c. Test reports: The test reports required under this exemption must be retained by the manufacturer as long as the cylinders made under this exemption are authorized, and must be made available to an authorized DOT representative upon request.

d. The cylinders are authorized for oil well sampling service only.

e. Transportation of Division 2.1 (flammable gases) are not authorized aboard cargo vessel or aircraft unless authorized in the Hazardous Materials Table (§ 172.202).

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

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or aircraft used to transport packages covered by this exemption. The shipper must furnish a copy of this exemption 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 exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, 49 CFR Parts 171-180.

- Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this exemption, including display of its number, when this exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must inform the AAHMS, in writing, of any incident involving the package and shipments made under the terms of this exemption.

Issued in Washington, D.C.:

Ann Mazzulla

for Robert A. McGuire
Associate Administrator for
Hazardous Materials Safety

FEB 6 2003
(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590. Attention: DHM-31.

Copies of this exemption may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/exemptions Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

PO: KFW/sln