DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
WASHINGTON, D.C. 20590

DOT-E 8382

1. Walter Kidde & Company, Incorporated, Belleville, New Jersey, is hereby granted an exemption from those provisions of this Department's Hazardous Materials Regulations specified in paragraph 5 below to manufacture, mark, and sell the packaging described in paragraph 7 below for use in the transportation of the nonflammable gases described in paragraph 3 below in commerce subject to the requirements specified herein. This exemption authorizes the use of a non DOT specification cylinder, and provides no relief from any regulation other than as specifically stated.

2. BASIS. This exemption is based on Walter Kidde's application dated February 6, 1980, supplemented by letters dated March 3 and April 8, 1980, submitted in accordance with 49 CFR 107.103 and the public proceeding thereon.

3. HAZARDOUS MATERIALS (Descriptor and class). Compressed air, helium, and nitrogen classed as nonflammable gases.

4. PROPER SHIPPING NAME (49 CFR 172.101). Air compressed, helium, or nitrogen, as appropriate.

5. REGULATION AFFECTED. 49 CFR 173.302(a), 175.3.

6. MODES OF TRANSPORTATION AUTHORIZED. Motor vehicle, rail freight, cargo vessel, passenger-carrying aircraft, cargo-only aircraft.

7. SAFETY CONTROL MEASURES. Packaging prescribed is a welded non-DOT specification stainless steel cylinder having a 20 cubic inch nominal water capacity, a service pressure of 6000 psig and complying with Walter Kidde drawing 878037 Rev. O, on file with the Office of Hazardous Materials Regulation (OHMR), and DOT specification 3HT (49 CFR 178.44) except as follows:

178.44. Inside container, stainless steel cylinder for aircraft use, made of definitely prescribed steel.

178.44-2. Type, size and service pressure.

(a). Cylinder must have a seamless shell with one end fitting welded on the dome and a nominal water capacity of 20 cubic inches.

(b). Marked service pressure is 6000 psi.

178.44-3 Inspection by whom and where.

Inspections and verifications must be performed by an independent inspection agency approved in writing by the Associate Director for OE. Chemical analysis and tests as specified must be made within the United States.

178.44-5. Authorized steel.

The cylinder must be made of Type 304L stainless steel complying with Federal Specification QQ-S-766C Amendment 5.

178.44-8. Manufacture.

(a). *** The thickness at the point of closure of cylinders must be equal to at least the wall thickness of the cylindrical shell.***

(b). (Added). Each cylinder shall be subjected to a process treatment after welding by pressurizing to at least 100 percent, but not more than 110 percent of the test pressure and maintaining pressure for 60 seconds. Total and permanent expansion shall be recorded and included in the inspectors report, except that recording of total and permanent expansion readings is not required for cylinders having a water capacity of less than 22 cubic inches. The process treatment must be witnessed by the independent inspector.

178.44-9. Welding or Brazing.

Welding or brazing for any purpose whatsoever is prohibited except that attachment of the end fitting to the hemispherical head of the shell by butt welding using the Electron Beam Method is authorized.

178.44-11. Heat treatment.

a. Not required. Instead the starting material and representative cylinders must be subjected to the "test for resistance to intergranular corrosion" as prescribed in paragraph 4.5.3 of Federal Specification QQ-S-766C Amendment 5. Results of tests must show material to be free from precipitated chrome-carbides. Tests must be performed on:

(1) Each heat, coil, sheet, plate or other unit of starting material.

(2) One cylinder from each lot of 200 cylinders. The test cylinder shall be sectioned through the weld and the weld zone tested for carbide precipitates.

(i) If all test cylinders from the first 2000 cylinders produced prove to be free from carbide precipitation, the test frequency may be reduced to one test cylinder from each 1000 or less cylinders successively produced.

178.44-13 Safety relief devices.

(b) (Added) Approval of the safety device must be submitted to the OHMR prior to initial shipment.

178.44-15. Cycling test.

(b). Cycling test on each lot is not required.

178.44-19. Magnetic Particle Inspection.

Not required. Instead each cylinder must be inspected by a dye or liquid penetrant inspection. Evidence of discontinuities which may appreciably weaken the cylinder shall be cause for rejection.

178.44-21. Acceptable results of test.

(a). Flattening required without cracking to six times the wall thickness of the cylinder.

(b). Physical tests.

(1) Elongation must be at least 8 percent in 2 inches gauge length

(2) Tensile strength shall not exceed 165,000 psi.

(c). Burst pressure shall be at least 1.4 times test pressure. Fracture must be in the sidewall of the cylinder in a longitudinal direction.

(d) Design qualification cycling: the representative sample cylinders must withstand at least 50,000 pressurizations without evidence of failure.

178.44-23. Marking.

(a). ***

(1). Instead of the DOT 3HT, each cylinder must be marked DOT-E 8382 followed by the service pressure.

(2). ***

(3). ***

(4). Stamping of the rejection elastic expansion is not required.

178.44-25. Inspectors Report.
The inspectors report must be appropriately modified to reflect identification and compliance with this exemption.

8. SPECIAL PROVISIONS.

a. Shippers may use the packaging covered by this exemption pursuant to 49 CFR 173.22a.

b. A copy of this exemption must be carried aboard each vessel, and aircraft, used to transport packages covered by this exemption.

c. The cylinders are limited to military weapons systems use only.

d. The cylinders must be shipped in strong outside packagings in compliance with 49 CFR 173.301(k).

e. Each cylinder must be reinspected and retested once every 3 years in accordance with 49 CFR 173.34(e) as prescribed for DOT 3HT cylinders except that the cylinder must be condemned at the termination of a 15 year period following the date of the original test and the rejection elastic expansion criteria does not apply.

9. REPORTING REQUIREMENTS. Any incident involving loss of contents of the package must be reported to the OHMR as soon as practicable.

10. EXPIRATION DATE. May 31, 1982

Issued at Washington, D.C.:

OCT 27 1980
(DATE)

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Address all inquiries to: Associate Director for Hazardous Materials Regulation, Materials Transportation Bureau, Research and Special Programs Administration, U.S. Department of Transportation, Washington, D.C., 20590. Attention: Exemptions Branch.

Dist: USCG, FAA, FHWA, FRA,