U.S. Department
of Transportation

**Research and
Special Programs
Administration**

JUN 5 2000

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

DOT-E 7446
(FOURTH REVISION)

EXPIRATION DATE: May 31, 2002

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Kaiser Aluminum & Chemical Corporation
Greenwood, South Carolina

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, mark, sale and of non-DOT specification aluminum cylinders used for the shipment of Division 2.2 materials. The cylinders are commonly used as fire extinguishers. This exemption provides no relief from any Hazardous Materials Regulation 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. 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).

5. BASIS: This exemption is based on the application of Kaiser Aluminum dated May 23, 2000, submitted in accordance with § 107.109.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Material Description	Hazard Class/ Division	Identi-fication Number	Packing Group
Compressed gas, n.o.s.	2.2	UN1956	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Packaging prescribed is a non-DOT specification seamless aluminum cylinder complying with DOT specification 3B (§ 178.38) except as follows:

§ 178.38(a) -Cylinder is made of aluminum instead of steel with a water capacity not over 50 pounds and a maximum service pressure of 500 psig.

§ 178.38(b) -Does not apply. Instead, analysis of aluminum must conform to Aluminum Association Standard Designation for alloy 6061.

§ 178.38(e) -Does not apply.

§ 178.38(f) -Change to: The wall stress at test pressure must not exceed 24,000 psi. Minimum wall thickness of 0.120 "for any cylinder over 6" outside diameter.

§ 178.38(j) -Change to: Between knife edges, wedge shaped, 601/4 angle, rounded to ½" radius; test 1 cylinder taken at random out of each lot of 200 less, before or after hydrostatic test.

§ 178.38(k)(2) - Remains the same except the first sentence is changed to read as follows:

Size of specimen must be either gauge length 2 inches with width not exceeding 1-1/2 inches or gauge length 4 times the specimen diameter (4D BAR) provided that when cylinder wall thickness is not over 3/16 inch, specimen having gauge length 24 times the thickness (24t) with width not over 6 times the thickness (6t) is authorized.

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§ 178.38(k)(3)(ii)

-Remains the same except the elastic extension calculations must be based on an elastic modulus of 10,000,000 instead of 30,000,000.

§ 178.38(k)(3)(iii)

-Remains the same except the stress figure of 12,000 psi is changed to 6,000 psi.

§ 178.38(l) -Change to: Acceptable results for physical, flattening and burst tests.

1. Minimum ultimate strength is 38,000 psi; minimum yield strength is 35,000 psi; elongation is at least 14 percent except that an elongation of 10 percent is acceptable when the specimen size is 24t x 6t.

2. Flattening is required, without cracking, to eight times wall thickness.

3. Minimum burst pressure is five times service pressure.

§ 178-38(m) -Does not apply.

§ 178.38(o) -Does not apply.

b. TESTING -

1. Cycle test. Sample cylinder of each new design must be cycle tested from zero psig to service pressure for 100,000 cycles with no sign of failure. Rate of cycling to be no more than 10 per minute.

2. Burst test. One cylinder taken at random out of each lot of 200 or less must be tested to burst. An appropriate statement thereon must be included in the inspector's report.

3. Cylinders must be periodically retested in accordance with § 173.34(e) as applicable to DOT-3B cylinders.

c. MARKING - In accordance with § 178.35(f) except substituting "DOT 3B" with "DOT-E 7446". Marking on neck is not permitted. Instead, marking may be on the outside diameter adjacent to the bottom provided stamping is not on the sidewall. Required size of marks must be at least 1/8 inch high.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

b. A person who is not a holder of this exemption, but 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 offered for transportation in conformance with this exemption and the HMR.

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

d. Each packaging manufactured under the authority of this exemption must be marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.

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

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel used to transport packages covered by this exemption.

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, Parts 171-180.
- Registration required by § 107.601 et seq., when applicable.

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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 the 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 also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued at Washington, D.C.

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Robert A. McGuire
For Acting Associate Administrator for
Hazardous Materials Safety

(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.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S. Department of Transportation, 400 7th Street, Washington, DC 20590-0001, Attention: Docket Section, 202-366-5046.

PO: kw/sln