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**DEPARTMENT OF TRANSPORTATION****Research and Special Programs  
Administration****49 CFR Parts 171, 173, and 178**

[Docket No. HM-176; Amdt. Nos. 171-63,  
173-152, 178-69]

**Specification and Usage Requirements  
for 3AL Seamless, Aluminum  
Cylinders; Correction**

**AGENCY:** Materials Transportation  
Bureau (MTB), Research and Special  
Programs Administration, DOT.

**ACTION:** Final rule; correction.

**SUMMARY:** This document corrects a final rule (46 FR 62452, December 24, 1981) relating to new aluminum cylinders which are designated DOT Specification 3AL. This action is necessary to correct typographical errors and omissions. In addition, several comments to the final rule were received which suggested changes of an editorial nature and requested clarification of some of the sections. While a few of the adopted changes have merit, others are of such a nature that MTB will not attempt to resolve them within the scope of this document. MTB has requested additional information from the commenters in order to properly consider the feasibility of the suggested changes, and upon receipt of information will resolve these matters as appropriate. It should be noted that the effective date of the rule now reflects that compliance with these amendments is authorized beginning April 1, 1982.

**EFFECTIVE DATE:** July 2, 1982. However, shipments may be prepared, offered for transportation, and transported in accordance with these amendments beginning April 1, 1982.

**FOR FURTHER INFORMATION CONTACT:** Arthur Mallen, Chief, Technical Division, Office of Hazardous Materials Regulation, Materials Transportation Bureau, U.S. Department of Transportation, 400 7th Street, SW., Washington, D.C. 20590 (202-755-4906).

**SUPPLEMENTARY INFORMATION:** This correction is necessary because, in addition to correcting typographical errors and certain discrepancies in the referenced sections, the final rule did not address the fact that shipments of flammable gases and poison A gases are authorized in DOT specification 3AL aluminum cylinders only when transported by highway, rail and, in certain cases, cargo-only aircraft as is provided currently in the effected exemptions. The omission of this limitation was inadvertent, and MTB is amending each of the affected sections in Part 173 accordingly.

A few petitions were filed late and could not be considered as "Petitions for reconsideration" in accordance with § 106.35 of Title 49, Code of Federal Regulations. However, MTB is considering the information as "comments" in this document.

Two commenters requested clarification of § 173.23(c), relative to the placement of the specification identification markings, and also strongly recommended that MTB prohibit the practice of peening out the existing exemption mark. MTB concurs with the views of the commenters, and has revised paragraph (c) to incorporate that prohibition.

One commenter expressed concern over the requirement which allows manifolding of liquefied petroleum gas but not hydrocarbon gas. MTB has reviewed the requirement in light of this comment, and believes that such a prohibition is no longer applicable and has corrected § 173.301 accordingly.

One commenter pointed out that cylinders used in nitric oxide service should be made subject to the same cleanliness requirements as cylinders used in oxygen (§ 173.302) and nitrous oxide (§ 173.304) service (both of which are in the rule). MTB agrees. Since the oxidizing properties of nitrogen dioxide (§ 173.336) and nitric oxide (§ 173.337) are similar, from a hazardous materials point of view, MTB believes that the same cleanliness requirements should be required for all four materials. In

addition, the exemptions which authorize aluminum cylinders in oxygen service, also specify such cleanliness requirements. The omission of nitric oxide and nitrogen dioxide from such provisions in the notice of proposed rulemaking and final rule was inadvertent.

One commenter questioned whether or not § 178.46-4(b) is controlled by the requirements of § 178.46-4(d)(6). The answer is no. Section 178.46-4(b) requires witnessing the chemical analysis of the incoming materials and § 178.46-4(d)(6) refers to the witnessing of the production test.

One commenter objected to § 178.46-7(c) which provides for a 0.125 inch minimum wall thickness. The commenter suggested that the minimum wall thickness should relate to the cylinder diameter and provided MTB with the following formula:

$$t = D + .040 / 100$$

MTB has not adopted this suggestion. MTB has determined that the suggested formula would not provide an adequate level of safety for cylinders having outside diameters over 5 inches. Such a formula would produce a thinner wall than is prescribed in the regulations for steel specification cylinders. Aluminum high pressure cylinders would need a minimum wall thickness much greater than .100 inch (as required for steel cylinders for diameter over 5") in order to have structural integrity equal to steel specification cylinders.

MTB has determined that there is no environmental impact associated with these changes.

**PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS**

The following corrections are made in FR Doc. No. 81-36318 appearing at page 62452 in the issue of December 24, 1981:

**§ 171.7 [Corrected]**

1. On page 62455, "§ 171.7(d)(19)" is corrected to read as follows: "(19) Federal Specification RR-C-901 b is titled "Cylinders, Compressed Gas: With Valve or Plug and Cap; ICC 3AA, August 1, 1967."

**PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS**

2. On page 62455, "§ 173.23(c)" is revised to read as follows:

**§ 173.23 Previously authorized packaging.**

\* \* \* \* \*

(c) After July 2, 1982, a seamless aluminum cylinder manufactured in conformance with and for use under DOT exemption E 6498, E 6576, E 6688, E 7042, E 7446, E 8384, or E 8422, may be continued in use if marked before or at the time of the next retest with the specification identification "3AL" immediately above the exemption number, or the DOT mark (i.e., DOT 3AL 1800) is added in proximity to the exemption marking.

**§ 173.136 [Heading Corrected]**

3. On page 62455, "§ 173.136" the section heading is corrected to read as follows: "§ 173.136 *Methyl dichlorosilane and trichlorosilane.*"

**§ 173.301 [Corrected]**

4. On page 62456, "§ 173.301(d)(3)," the eighth line from the top of the paragraph, the words "and liquefied hydrocarbon gas" is removed.

**§ 173.302 [Corrected]**

5. On page 62456, "§ 173.302(a)(5)" is corrected by adding a sentence just before the last sentence of the paragraph to read as follows: "Flammable gases shipped in 3AL cylinders are authorized only when transported by highway, rail and cargo-only aircraft."

**§ 173.302 [Corrected]**

6. On page 62456, "§ 173.302(f)" is corrected by adding a sentence at the end to read as follows: "Specification 3AL cylinders are authorized only when transported by highway, rail and cargo-only aircraft."

**§ 173.304 [Corrected]**

7. On page 62456, "§ 173.304(a)(2)" the following entries are corrected to read as follows:

Bromotrifluoromethane (R-13B1 or H-1301).....	124	DOT-3A400; DOT-3AA400; DOT-3B400; DOT-4A400; DOT-4AA400; DOT-4B400; DOT-4BW400; DOT-3E1800; DOT-39; and DOT-3AL400.
Chlorodifluoromethane (See Note 8).....	(R-22) 105	DOT-3A240; DOT-3AA240; DOT-3B240; DOT-4B240; DOT-4BA240; DOT-4BW240; DOT-4B240ET; DOT-4E240; DOT-39; DOT-41; DOT-3E1800; and DOT-3AL240.
Chloropentafluoroethane (See Note 8).....	(R-115) 110	DOT-3A225; DOT-3AA225; DOT-3B225; DOT-4A225; DOT-4B225; DOT-3E1800; DOT-39; and DOT-3AL225.
Chlorotrifluoromethane (See Note 8).....	(R-13) 100	DOT-3A1800; DOT-3AA1800; DOT-3; DOT-3E1800; DOT-39; and DOT-3AL1800.
Cyclopropane (See Notes 8 and 9).....	55	DOT-3A225; DOT-3A480X; DOT-3AA225; DOT-3B225; DOT-4A225; DOT-4AA480; DOT-4B225; DOT-4BA225; DOT-4BW225; DOT-4B240ET; DOT-3; DOT-3E1800; DOT-39; and DOT-3AL225.

Dichlorodifluoromethane (R-12) (See Note 8).....	119.....	DOT-3A225; DOT-3AA225; DOT-3B225; DOT-4A225; DOT-4B225; DOT-4BA225; DOT-4BW225; DOT-4B240ET; DOT-4E225; DOT-9; DOT-39; DOT-41; DOT-3E1800; and DOT-3AL225.
Ethylene (See Notes 8 and 9).....	31.0.....	DOT-3A1800; DOT-3AX1800; DOT-3AA1800; DOT-3AAX1800; DOT-3; DOT-3E1800; DOT-3T1800; DOT-39; and DOT-3AL1800.
Ethylene (See Notes 8 and 9).....	32.5.....	DOT-3A2000; DOT-3AX2000; DOT-3AA2000; DOT-3AAX2000; DOT-3T2000; DOT-39; and DOT-3AL2000.
Refrigerant gas, n.o.s. or Dispersant gas, n.o.s. (See Note 8).....	Not liquid full at 130° F.....	DOT-3A240; DOT-3AA240; DOT-3B240; DOT-3E1800; DOT-4A240; DOT-4B240; DOT-4BA240; DOT-4BW240; DOT-4E240; DOT-9; DOT-39; and DOT-3AL240.
Sulfur dioxide (See Note 8).....	125.....	DOT-3A225; DOT-3AA225; DOT-3B225; DOT-4A225; DOT-4B225; DOT-4BA225; DOT-4B240ET; DOT-3; DOT-4; DOT-25; DOT-26-150; DOT-38; DOT-39; DOT-3E1800; and DOT-3AL225.

**§ 173.304 [Corrected]**

8. On page 62457, "§ 173.304(a)(3)," bottom of page, "carbonyl sulfide," is added after the word "silane," the last word in the paragraph is corrected to read "either," and the following sentence is added at the end of the paragraph to read as follows: "Shipments of flammable gases are authorized only when transported by highway, rail and cargo-only aircraft."

**§ 173.304 [Corrected]**

9. On page 62457, "§ 173.304(d)(3)(i)," the following sentence is added at the end of the paragraph to read as follows: "Shipments of flammable gases in 3AL cylinders are authorized only when transported by highway, rail and cargo-only aircraft."

**§ 173.328 [Corrected]**

10. On page 62457, "§ 173.328(q)(2)(i)," the last sentence is corrected to read as follows: "Specification 3AL cylinders containing arsine or phosphine may only be transported by highway and rail."

**§ 173.332 [Corrected]**

11. On page 62458, "§ 173.332(a)(2)," after the phrase, "above floor level," the following sentence is added to read as follows: "Shipments in 3AL cylinders are authorized only when transported by highway and rail."

**§ 173.336 [Corrected]**

12. On page 62458, "§ 173.336(a)(2)," the following sentence is added at the end of the paragraph to read as follows: "Shipments in 3AL cylinders are authorized only when transported by highway, and rail." Paragraph "(a)(2)(i)" is added to read as follows:

- (a) \* \* \*
- (2) \* \* \*

(i) Each cylinder must be cleaned in compliance with the requirements of Federal Specification RR-C-901b paragraphs 3.7.2 and 3.8.2. Cleaning agents equivalent to those specified in RR-C-901b may be used; however, any cleaning agent must not be capable of reacting with oxygen. One cylinder selected at random from a group of 200 or less cleaned at the same time must be

tested for oil contamination in accordance with Specification RR-C-901b paragraph 4.4.2.3 and meet the standard of cleanliness specified.

**§ 173.337 [Corrected]**

13. On page 62458, "§ 173.337(a)(1)," the entry "3AL 2800" is corrected to read "3AL 1800", and in paragraph "(a)(1)(ii)," immediately after the word "caps" the phrase "or other equally protective guards" is added. Paragraph (a)(1)(iii) is added to read as follows:

- (a) \* \* \*
- (1) \* \* \*

(iii) Each cylinder must be cleaned in compliance with the requirements of Federal Specification RR-C-901b paragraphs 3.7.2 and 3.8.2. Cleaning agents equivalent to those specified in RR-C-901b may be used; however, any cleaning agent must not be capable of reacting with oxygen. One cylinder selected at random from a group of 200 or less cleaned at the same time must be tested for oil contamination in accordance with Specification RR-C-901b paragraph 4.4.2.3 and meet the standard of cleanliness specified.

**§ 173.337 [Corrected]**

14. On page 62458, "§ 173.337(a)(1)(ii)," a sentence is added after the last word "specifications," to read as follows: "Shipments in 3AL cylinders are authorized only when transported by highway and rail."

**PART 178—SHIPPING CONTAINER SPECIFICATIONS**

**§ 178.46-3 [Corrected]**

15. On page 62458, "§ 178.46-3," in the third line from the bottom, "Associated" is corrected to read "Associate."

**§ 178.46-5 [Corrected]**

16. On page 62459, "§ 178.46-5(d)," chart designated "(1) Chemical Composition Limits" the heading of the first column is corrected to read "Aluminum Association alloy designation No."

**§ 178.46-5 [Corrected]**

17. On page 62459, "§ 178.46-5(d)," the chart designated "(2) Mechanical Property Limits", "214" is corrected to read "142" wherever it appears.

**§ 178.46-15 [Corrected]**

18. On page 62461, "§ 178.46-15(a)(3)," is corrected to read as follows:

- (a) \* \* \*

(3) \* \* \* Inspectors official mark, near serial number, date of test (such as 5-81 for May 1981), so placed that dates of subsequent tests can be easily added.

**§ 178.46-16 [Corrected]**

19. On page 62461, "§ 178.46-16", the line that reads, "Identifying symbol (registered) \_\_\_\_\_" is removed.

(49 U.S.C. 1803, 1804, 1808; 49 CFR 1.53, App. A to Part 1)

Note.—The Materials Transportation Bureau has determined that this document (a) will not result in a "major rule" under the terms of Executive Order 12291; (b) is not a significant regulation under DOT's regulatory policy and procedures (44 FR 11034); and, (c) does not require an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321 et seq.) A regulatory evaluation and an environmental assessment are available for review in the docket.

Issued in Washington, D.C., on March 23, 1982.

L. D. Santman,

Director, Materials Transportation Bureau.

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