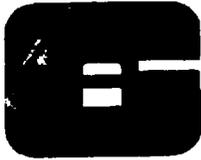


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COMPRESSED GAS ASSOCIATION, INC.

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August 1, 2000

Associate Director
Office of Hazardous Materials
U.S. Department of Transportation
400 7th St. SW Room 8422
Washington, DC 20590

SUBJECT: 110% filling of DOT specification 3A, 3AA, 3AX, and 3AAX cylinders with flammable gases

Dear Associate Director:

In October 1969, CGA subcommittee 69-47 was formed. The purpose of this subcommittee was to investigate the technical and safety considerations of filling cylinders with flammable gases to 110% of their marked service pressure.

On November 17, 1969, CGA sent a letter to DOT requesting changes to 49CFR173.302(c) to permit 110% filling of DOT 3A, 3AA, 3AX, and 3AAX cylinders. Several letters were exchanged and there were several meetings between CGA and DOT. As a result of the letters, meetings, and technical data, Special Permit 6530 was issued in October 1971, for the 110% filling of hydrogen into DOT 3A, 3AA, 3AX, and 3AAX steel cylinders not over 35 years old.

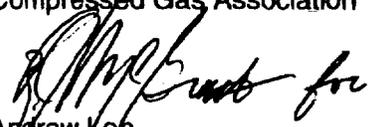
On December 9, 1971, CGA submitted a letter to the Secretary Hazardous Materials questioning the reason for limiting the 110% filling to cylinders less than 35 years old. Over the years, there have been additional meetings, letters, and exchanges of technical data requesting elimination of the 35 year restriction.

173.34(e)(2)(ii)

Please review the attached revised changes to 49CFR173.302(c) and a new paragraph 49CFR173.302(i). It is recommended that DOT revise 49CFR173.(e)(2)(ii) to require the DOT registered cylinder retester to demonstrate the Brinell hardness test to a DOT authorized independent inspector before being allowed to perform the hardness test.

If you would like to discuss this renewed request, members of the subcommittee can meet at DOT to discuss the request.

Very Truly yours
Compressed Gas Association


Andrew Lee
Chairman, CGA Docket 69-47

**PROPOSED AMENDMENT OF DOT HAZARDOUS MATERIALS REGULATIONS FOR 110%
FILLING OF HYDROGEN CYLINDERS**

173.302(c) Revised to read as follows:

*173.302(c) Special Filling Limits for Specifications 3A, 3AX, 3AA, 3AAX and 3T Cylinders.

Specifications 3A, 3AX, 3AA, 3AAX and 3T(178.36, 178.37 and 178.45 of this subchapter) cylinders may be charged with compressed gases, other than liquefied, dissolved, poisonous or flammable gases (except as provided in 173.302(i) to a pressure 10 percent in excess of their marked service pressure provided:

[No change in subparagraphs (1) through (5)]

173.302(i): Add a new paragraph to read as follows:

173.302(i): Hydrogen and mixtures of hydrogen. Hydrogen and mixtures of hydrogen and inert gases may be shipped in 3A, 3AA, 3AX, or 3AAX specification cylinders charged to a pressure 10 percent in excess of their marked service pressure, provided:

(1) That such cylinders meet the requirements of 173.302(c)(2),(3),(4) and (5).

(2) That such cylinders are equipped with safety relief devices as follows:

(i) Cylinders not over 65 inches long must be equipped with a frangible disc device backed with fusible alloy e.g. CG-4 or CG-5 as listed CGA publication S-1.1.

(ii) Cylinders over 65 inches long must be equipped with a pressure relief device at both ends of the cylinder. Such devices may be either a frangible disc backed with a fusible metal alloy (e.g. CG-4 or CG-5 as listed in CGA publication S-1.1) or a frangible disc (without fusible metal backing e.g. CG-1 as listed in CGA publication S-1.1).

(3) It must be verified by the gas shipper that such cylinders at the time of filling have a maximum UTS of 135 KSI by use of the original manufacturer's test report and comply with sections (ii) and (iii) below or : (if original manufacturer's test report is unavailable be meeting all three of the following conditions):

(i) cylinders not over 65 inches long must be given a one time hardness test by a DOT registered cylinder retester on the cylinder sidewall

or

cylinders over 65 inches long must be given a one time hardness test by a DOT registered cylinder retester at two spots on the cylinder wall 180 degrees apart on opposite ends of the cylinder or tube

(ii) The hydrogen special filling limit must be recorded on the cylinder shoulder near the retest dates, e.g. ■ H2 where the ■ is the cylinder tester's RIN (Retesters Identification Number), and the H2 represents the acceptance for H2 special filling service.

Maximum allowable UTS is 135KSI as determined by the original manufacturer's test report.
Maximum allowable hardness as determined by ASTM E-10-96 is Brinell 269 when no original manufacturer's test report is available

iii) Packaging prescribed are DOT specification 3A, 3AA, 3AX, or 3AAX steel cylinders manufactured subsequent to 1 January 1950."