CGA C-10—2013

GUIDELINES TO PREPARE CYLINDERS AND TUBES FOR GAS SERVICE AND CHANGES IN GAS SERVICE

FIFTH EDITION

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Work Item 09-014
Specialty Gases Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendix A (Informative) is for information only.

FIFTH EDITION: 2013
FOURTH EDITION: 2005
REAFFIRMED: 1999
THIRD EDITION: 1993

Contents **Page**

Appendix

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1 Introduction

This publication has been prepared as a guide to assist those persons establishing procedures for changing cylinders from one gas service to another. It is necessary that this guide is general in nature, although some specific recommendations are included, particularly regarding seamless steel and welded steel cylinders. It is assumed that persons using this publication are knowledgeable in the handling of compressed gases and familiar with the chemical and physical properties of the commodities they charge into cylinders and the contaminants that are likely to be found there. Cylinders that have been restricted to certain applications such as medical cylinders and have been filled with gases of a known quality may justifiably be processed in a manner other than those covered by these general recommendations.

It is occasionally desirable to change compressed gas cylinders from one gas service to another. Some of these service changes can be made easily. Others require a careful inspection of the interior and exterior of the cylinder to detect the presence of corrosion products or contaminants that shall be removed for safety reasons or to avoid undesirable contamination of the contained gas. Also, there are some compressed gas cylinders that shall be restricted to the service that they are in and not changed at all.

When cylinders are changed from one gas service to another, a thorough inspection of the cylinders shall be made. This inspection is done to accumulate information on how well the cylinder performed in its previous service, to ensure the cylinder is suitable for its proposed new gas service, and to determine the necessary action to be taken to properly prepare the cylinder for the change of service.

This publication does not attempt to identify each and every aspect of an inspection of the cylinder, valve, and pressure relief device (PRD); that is the responsibility of the party changing service.

2 Scope

2.1 Cylinders and tubes for which procedures apply

The cleaning recommendations contained in this publication are intended for cylinders of water capacities from 0.5 L to 454 L and tubes up to 3000 L that are fabricated in accordance with specifications promulgated by the U.S. Department of Transportation (DOT) in the United States and the Canadian Transport Commission (CTC) or Transport Canada (TC) in Canada and are authorized for reuse [1, 2, 3, 4].[1] Unless otherwise specified, when the word “cylinder” is used in this publication, it applies to both cylinders and tubes.

The references made in this publication, in general, apply equally to DOT specifications and regulations in the United States and TC specifications and regulations in Canada [1, 2, 3, 4].

In the United States new cylinders are prefaced by “DOT” and in Canada new cylinder specifications are prefaced by “TC”. Older U.S. cylinders are prefaced by “ICC” and older Canadian cylinders are prefaced by “CTC”. Cylinders marked “CTC/DOT” or “TC/DOT” are authorized for service in both the United States and Canada. These procedures also apply to these older cylinder specifications.

These recommendations do not apply to:

- nonrefillable and composite cylinders;
- cylinders with internal linings, plating, or treatments;
- cylinders being changed into medical and food gas service; and
- cargo tanks, portable tanks, and tank cars.

These containers may require special techniques that can best be prescribed by the container manufacturer. These containers may have other requirements set forth by additional government agencies, such as DOT, Food and Drug Administration (FDA), TC, and Canadian Health Products and Food Branch Inspectorate (HPFBI).

[1] References are shown by bracketed numbers and are listed in order of appearance in the reference section.