



CGA M-18—2022
STANDARD FOR THE CHANGE
OF PRODUCT AND CHANGE OF
GRADE FOR HIGH PRESSURE
AND REFRIGERATED LIQUID
CONTAINERS

SECOND EDITION

Currently in preview, click buy full version

PLEASE NOTE:

The information contained in this document was obtained from sources believed to be reliable and is based on technical information and experience currently available from members of the Compressed Gas Association, Inc. and others. However, the Association or its members, jointly or severally, make no guarantee of the results and assume no liability or responsibility in connection with the information or suggestions herein contained. Moreover, it should not be assumed that every acceptable commodity grade, test or safety procedure or method, precaution, equipment or device is contained within, or that abnormal or unusual circumstances may not warrant or suggest further requirements or additional procedure.

This document is subject to periodic review, and users are cautioned to obtain the latest edition. The Association invites comments and suggestions for consideration. In connection with such review, any such comments or suggestions will be fully reviewed by the Association after giving the party, upon request, a reasonable opportunity to be heard. Proposed changes may be submitted via the Internet at our web site, www.cganet.com.

This document should not be confused with federal, state, provincial, or municipal specifications or regulations; insurance requirements; or national safety codes. While the Association recommends reference to or use of this document by government agencies and others, this document is purely voluntary and not binding unless adopted by reference in regulations.

A listing of all publications, audiovisual programs, safety and technical bulletins, and safety posters is available via the Internet at our website at www.cganet.com. For more information contact CGA. Phone: 703-788-2700, ext. 799. E-mail: customerservice@cganet.com.

Work Item 22-007
Medical Gases Committee

NOTE—Technical changes from the previous edition are underlined

SECOND EDITION: 2022

FIRST EDITION: 2018

© 2022 The Compressed Gas Association, Inc. All rights reserved.

All materials contained in this work are protected by United States and international copyright laws. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopying, recording, or any information storage and retrieval system without permission in writing from The Compressed Gas Association, Inc. All requests for permission to reproduce material from this work should be directed to The Compressed Gas Association, Inc., 8484 Westpark Drive, Suite 220, McLean VA 22102. You may not alter or remove any trademark, copyright or other notice from this work.

Contents	Page
1 Introduction.....	1
2 Scope	1
3 Definitions.....	1
4 Operator requirements	2
5 Guidelines to determine containers suitable for change of service and change of grade	2
6 Change of container service and grade	2
6.1 Change of service	3
6.2 Change of grade.....	3
6.3 Labeling.....	5
6.4 Record keeping	5
7 References	6

Currently in preview, click buy full version

This page is intentionally blank.

Currently in preview, click buy full version

1 Introduction

This standard describes a process the compressed gas industry uses to develop a standard operating procedure (SOP) for changing grade of non-U.S. Food and Drug Administration (FDA)/Health Canada (HC) regulated product to FDA/HC regulated product for compressed gas containers. This standard also describes the process for change of service (COS) within regulated products. This standard also references CGA C-10—2019, *Guideline to Prepare Cylinders and Tubes for Gas Service and Changes in Gas Service* for SOPs for the change of service (COS) from one product to another for compressed gas containers, including tube trailers and cryogenic liquid containers other than liquid bulk trailers [1].¹

2 Scope

The scope of this standard is the qualification of the change of grade (COG) process, which involves the conversion of a non-FDA/HC regulated compressed gas container to a FDA/HC regulated compressed gas container. This standard also addresses the COS between FDA/HC regulated products including from one pure gas or gas mixture product to another referring to the process details covered in CGA C-10 [1]. This standard also addresses the record keeping requirements for FDA/HC regulated gas COG and COS. This standard addresses high pressure cylinders including tube trailers and cryogenic liquid containers.

This standard does not apply to liquid bulk trailers, or large cryogenic bulk storage containers. This standard also does not apply to containers previously containing corrosive, poisonous, pyrophoric, radioactive, and toxic gases see Appendix A of CGA C-10 [1].

3 Definitions

For the purpose of this publication, the following definitions apply.

3.1 Publication terminology

3.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

3.1.2 Should

Indicates that a procedure is recommended.

3.1.3 May

Indicates that the procedure is optional.

3.1.4 Can

Indicates a possibility or ability.

3.1.5 Will

Is used only to indicate the future, not a degree of requirement.

3.2 Technical definitions

3.2.1 Change of grade (COG)

Converting a container that previously contained non-FDA/HC regulated grade to a FDA/HC regulated grade of the same product, for example, nonmedical oxygen to medical oxygen, USP.

3.2.2 Change of service (COS)

Converting a container that previously contained one product to a different product, for example, oxygen to nitrogen or nitrogen for food use to nitrogen for medical use.

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