

SAFETY ALERT

POTENTIAL FOR HIDDEN CRYOGENIC LIQUID CYLINDER CONTAMINATION

All cylinders have the potential for exposure to external contamination during their service life. External contamination can occur while in storage or in use in areas where contaminants are present in the form of airborne mist or particulate matter. External contamination can also occur during transportation. Road-film and salts thrown up by vehicle traffic, oil leaks from the transport vehicle, and even unburned engine fuel can result in the accumulation of contaminants. Ambient weather and local service conditions can cause wide variations in the potential for accumulation. Such contamination is of special concern where oxidizing gases are involved.

Although it is recommended that all cylinders undergo a thorough prefill inspection, in some cryogenic liquid cylinder designs the area beneath the liquid level sight-glass is hidden by a protective cover. Two cryogenic oxygen cylinder fires have been reported that might have been caused by small leaks at the base of the liquid level sight-glass, augmented by hydrocarbon contamination in the same area.

Liquid oxygen containers and components shall be properly cleaned for oxygen service and shall be kept clean and free of grease, oil, or other hydrocarbon materials that can combine with oxygen with explosive violence. Detailed information on methods of cleaning is provided in CGA G-4.1, *Cleaning of Equipment for Oxygen Service* [1].

Containers previously used for carbon dioxide service should not be placed in any other service due to increased likelihood of hydrocarbon contamination.

Reference

Unless otherwise specified, the latest edition shall apply.

[1] CGA G-4.1, *Cleaning of Equipment for Oxygen Service*, Compressed Gas Association, Inc.
www.cganet.com

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 at Phone: 703-788-2700, ext. 799. E-mail: customerservice@cganet.com.

Work Item 20-022
Bulk Distribution Equipment and Standards

FIRST EDITION: 2020

© 2020 The Compressed Gas Association, Inc. All rights reserved.

All materials contained in this work are protected by United States and international copyright laws. You may not alter or remove any trademark, copyright or other notice from this work.