CGA

Compressed Gas Association

The Standard For Safety Since 1913

CGA P-16—2020

GUIDELINE FOR NITROGEN PURGING OF CONTAINERS

FOURTH EDITION

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NOTE—Technical changes from the previous edition are underlined.

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1 Introduction

Member companies of the Compressed Gas Association, Inc. (CGA) recognize the need for a guideline to safely use nitrogen vaporized from a liquid nitrogen source to purge containers.

WARNING: *Nitrogen is extremely cold in the liquid state and special precautions are necessary to protect equipment that might not be designed to withstand extremely low temperatures from cold purge gas. Introduction of liquid nitrogen or cold nitrogen gas into containers not designed for cryogenic liquid temperatures or cold gas, can result in a container failure or bodily harm, resulting in serious injury or death.*

WARNING: *Nitrogen is an asphyxiant and has no warning properties. It is undetectable because in its gaseous phase it is colorless, odorless, and tasteless. Accumulation of nitrogen in containers that are being purged, and in OSHA-confined spaces where work is performed can place personnel at risk, resulting in serious injury or death.*

This publication is intended to protect personnel during the vaporization of liquid nitrogen and the subsequent use of gaseous nitrogen for purging containers. It should be read thoroughly before using nitrogen to purge a container.

2 Scope

This publication describes a recommended procedure for nitrogen purging of containers to ensure the safest possible work environment during the nitrogen application process. It also describes protecting the container from hazards associated with exposure to liquid nitrogen.

3 Definitions

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

3.1.5 Can
Indicates a possibility or ability.

3.2 Technical definitions

3.2.1 Container
Vessels of various shapes, sizes, materials of construction (cylinders or portable or stationary tanks), and designs meeting the specifications of American Society for Mechanical Engineers (ASME), Transport Canada (TC), U.S. Department of Transportation (DOT), or the applicable pressure vessel authority.

3.2.2 Maximum allowable working pressure (MAWP)
Maximum gauge pressure permissible at the top of a vessel in its operating position for a designated temperature.