CGA P-16–2014

RECOMMENDED PROCEDURES FOR NITROGEN PURGING OF TANK CARS

THIRD EDITION

CGA
Compressed Gas Association
The Standard For Safety Since 1913

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NOTE—Technical changes from the previous edition are underlined.

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Contents **Page**

Figures

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1 Introduction

The member companies of the Compressed Gas Association (CGA), recognized the need for a safe procedure for the application of nitrogen from a liquid nitrogen supply source to compressed gas tank cars. Nitrogen is extremely cold in the liquid state and special precautions are necessary to protect workers. Introduction of liquid nitrogen or cold nitrogen gas into tank cars not designed for cryogenic liquid temperatures or cold gas, can result in a tank failure.

This publication is intended to protect workers during the vaporization of liquid nitrogen and the subsequent use of gaseous nitrogen for purging compressed gas tank cars. It should be read thoroughly before using nitrogen to purge a tank car.

2 Scope

This publication describes a recommended procedure for nitrogen purging of compressed gas tank cars to ensure the safest possible work environment during the nitrogen application process. It also takes into consideration protecting the tank 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 Can
Indicates a possibility or ability.

3.1.4 May
Indicate that the procedure is optional.

3.2 Technical definitions

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

3.2.2 Minimum design metal temperature (MDMT)
Lowest temperature at which a container is designed to operate at a given pressure.

3.2.3 Padding
Introduction of an inert gas under pressure into the vapor space of a tank car tank in order to create a non-flammable or moisture-free atmosphere.

NOTE—Padding procedures for tank cars are specific with respect to each commodity and are beyond the scope of this publication. Although the term padding is not used in this publication, the definition is included because padding is often confused with purging.