CGA

Compressed Gas Association

The Standard For Safety Since 1913

CGA-G-8.5—2020

(Formerly SB-6)

STANDARD FOR NITROUS OXIDE SECURITY AND CONTROL

FIRST EDITION

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Work Item 19-016
Medical Gases Committee

NOTE—Technical changes from SB-6—2014 edition are underlined.

FIRST EDITION: 2020

Contents **Page**

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1 Introduction

There is concern by many in the medical profession, government, and industry about an increase in the abuse of nitrous oxide. A number of states have enacted legislation that makes unauthorized use of nitrous oxide illegal. Theft of cylinders from suppliers and medical sources has made nitrous oxide available to many people, in many cases young, school-age people, who are unaware of the hazards of handling and using nitrous oxide but are seeking the euphoric qualities of the gas. The abuse of nitrous oxide can impair an individual's ability to make and implement life-sustaining decisions and can cause death by reducing the oxygen necessary to support life.

2 Scope

This publication is intended to help bulk manufacturers commercial carriers, container fillers, distributors, and legitimate medical, commercial, and industrial users take effective steps to help prevent theft or improper use of nitrous oxide. This publication does not list all the possible dangers in the handling and use of nitrous oxide.

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

3.1.5 Can
Indicates a possibility or ability.

4 Nitrous oxide properties

Nitrous oxide (N_2O) is a clear, colorless, oxidizing liquefied gas with barely perceptible sweet odor and taste. The product is stable at room temperature. While classified by the U.S. Department of Transportation (DOT) as a nonflammable gas, nitrous oxide will support combustion and can detonate at temperatures in excess of 650 °C (1202 °F). Contact your supplier to obtain a nitrous oxide safety data sheet (SDS) for information on the safe handling and security of this product.

5 What are the principal applications of nitrous oxide?

Nitrous oxide finds beneficial use in a number of legitimate applications such as:

- medical/dental anesthesia and analgesia;
- food processing propellant;
- semiconductor manufacturing;
- analytical chemistry;