CGA P-2—2013

CHARACTERISTICS AND SAFE HANDLING OF MEDICAL GASES

TENTH EDITION

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Work Item 10-064
Medical Gases Committee

NOTE—Due to the extensive changes in this document, technical changes from the previous edition are not identified.

NOTE—Appendices A, B, C, D, E, F, and G (Informative) are for information only.

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1 Introduction

This publication provides information about and guidance for the safe handling of compressed medical gases. It is intended to protect personnel in health care facilities, including hospitals, nursing homes, doctor and dental offices, and clinics or as otherwise defined in NFPA 99, *Health Care Facilities Code* [1] [1].

2 Scope

This publication describes the properties of common medical gases, medical gas containers, and safe practices and handling of these gases.

This publication does not address the following:

- manufacture of, distribution to the customer location, or the administration of medical gases;
- oxygen 93% and nitrogen 97%, since these are health care facility manufactured or produced products; and
- oxygen concentrators or the containers filled by these devices that are used by individuals in health care facilities.

3 Definitions

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

3.1 Container

Portable compressed gas cylinders and liquid containers made in accordance with the U.S. Department of Transportation (DOT) or Transport Canada (TC) specifications or liquid oxygen base reservoirs and portable vessels with service pressures under 40 psi (276 kPa).[2]

3.2 Distributor

Any person or firm who markets filled medical gas cylinders and who has not performed any manufacturing steps, such as filling, or relabeling.

3.3 Filling density

Percent ratio of the weight of gas in a container to the weight of water the container will hold at 60 °F (15.6 °C).

3.4 Manufacturer

Any person or firm who produces, fills, or relabels medical gas cylinders.

3.5 Transfilling

Process of transferring compressed gas or refrigerated liquefied gas from one container to another.

4 General characteristics

4.1 Single component medical gases

Medical gases are prepared under carefully controlled conditions. Purity specifications for medical gases are prescribed in the *United States Pharmacopeia* and *National Formulary* (*USP–NF*) [2]. Specific properties and additional information about most gases used in medical service are contained in Appendix A to Appendix F.

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

[2] kPa shall indicate gauge pressure unless otherwise noted as (kPa, abs) for absolute pressure or (kPa, differential) for differential pressure. All kPa values are rounded off per CGA P-11, *Metric Practice Guide for the Compressed Gas Industry* [3].