CGA®

Compressed Gas Association

The Standard For Safety Since 1913

CGA P-36—2022

THE SAFE PREPARATION OF GAS MIXTURES

THIRD EDITION

PREFACE:

As part of a program of harmonization of industry standards, the Compressed Gas Association (CGA) has issued CGA P-36, *Safe Preparation of Gas Mixtures*, jointly produced by members of the International Harmonization Council and originally published by the European Industrial Gases Association (EIGA) as EIGA Doc 39, *Safe Preparation of Gas Mixtures*.

This publication is intended as an international harmonized standard for the worldwide use and application of all members of the Asia Industrial Gases Association (AIGA), Compressed Gas Association (CGA), European Industrial Gases Association (EIGA), and Japan Industrial and Medical Gases Association (JIMGA). Each association's technical content is identical, except for regional regulatory requirements and minor changes in formatting and spelling.

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Work Item 18-049
Specialty Gases Committee

NOTE—Technical changes from the previous edition are underlined.

NOTE—Appendix A (Informative) is for information only.

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1 Introduction

For many years, the gas industry has produced a wide range of gas mixtures. All gas mixing operations require the normal safety procedures, practices and controls that are followed when filling standard industrial gases. Additional controls are required when mixing potentially incompatible gases. For this reason, great care is necessary during the preparation of such mixtures to ensure that no uncontrolled reactions take place.

Regulations and procedures for gas mixing vary in some details from one manufacturer to another, however, they should always be based on the same safety principles. Details concerning the safe manufacture of oxidant-fuel mixtures are described in CGA P-58, *Safe Preparation of Compressed Oxidant-Fuel Gas Mixtures in Cylinders* [1].[1]

Manufacturers of gas mixtures for medical use should also refer to Title 21 of the U.S. *Code of Federal Regulations* (21 CFR) and Health Canada's *Good Manufacturing Practices (GMP) for Medical Gases* [2, 3].

2 Scope and Purpose

The sole aim of this publication is to set out the basic requirements to ensure that gas mixtures are manufactured safely. This publication is not intended to be a manual on how to manufacture gas mixtures.

3 Definitions

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

3.1 Publications 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 Cylinder
Any transportable receptacle that can be filled with gas under pressure

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