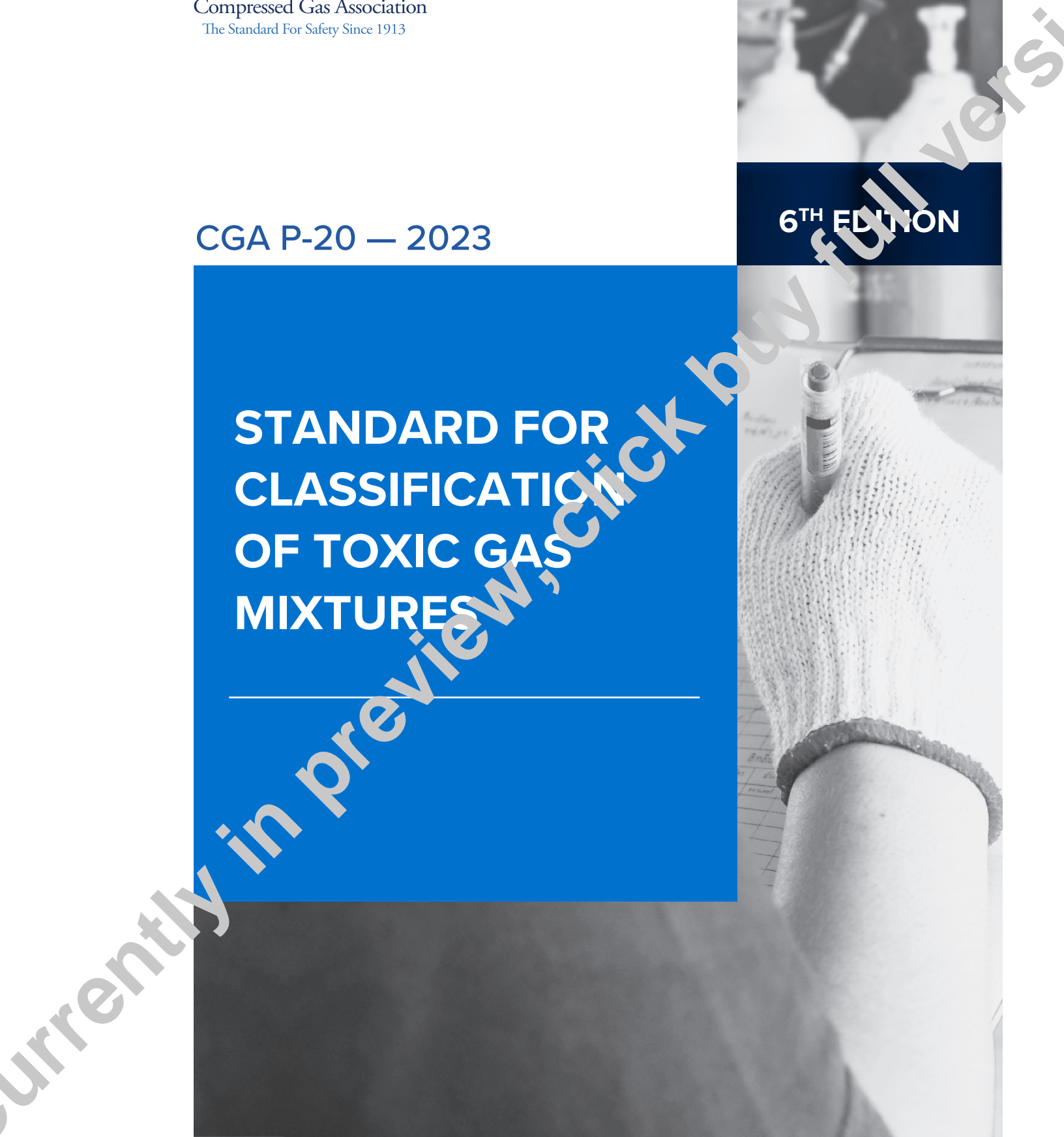


CGA P-20 — 2023

6TH EDITION

**STANDARD FOR
CLASSIFICATION
OF TOXIC GAS
MIXTURES**



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Work Item 21-052
Specialty Gases Committee

NOTE—Technical changes from the previous edition are underlined

SIXTH EDITION: 2023
FIFTH EDITION: 2017
FOURTH EDITION: 2009
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SECOND EDITION: 1995

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Contents	Page
1 Introduction.....	1
2 Scope and purpose	1
2.1 Scope	1
2.2 Purpose	1
3 Definitions.....	1
4 Description of method for determining gas mixture toxicity	2
4.1 DOT hazard zones of toxic gas mixtures.....	2
4.2 GHS acute toxicity categories	2
4.3 Classification procedures for toxic gas mixtures	3
4.4 DOT limiting concentrations for gas mixture toxicity.....	3
4.5 GHS limiting concentrations for gas mixture acute toxicity.....	4
5 Principles of method for determining gas mixture toxicity	11
5.1 More than one toxic component	11
5.2 Determination of DOT hazard zone.....	11
6 Selection of DOT and TC transportation labels and GHS pictograms for toxic gas mixtures	11
7 DOT sample calculations	11
7.1 Calculation formula for gas mixtures containing one toxic component.....	11
7.2 Calculation formula for gas mixtures containing more than one toxic component	12
8 References	14
9 Additional references.....	14
Tables	
Table 1—DOT toxic hazard zone limits.....	5
Table 2—GHS acute toxicity categories	7
Table 3—Modified Haber factors for time normalization of LC ₅₀ data to 1 hour.....	9
Table 4—Animal ranking (in order of preference).....	10
Table 5—DOT and TC labeling of pure products.....	12
Figure	
Figure 1—LC ₅₀ selection algorithm	10

1 Introduction

Toxic designations for pure gases are well known. However, the list of gases included in this standard varies because the toxicity values that are used to determine whether or not a gas meets the definition of “toxic” or “poison”, in U.S. Department of Transportation (DOT) *Hazardous Materials Regulations* and Transport Canada’s (TC) *Transportation of Dangerous Goods (TDG) Regulations* also vary [1, 2]. Subsidiary hazard classes and multiple labels for pure gases reflect DOT and TC requirements. Additional labels denoting subsidiary hazards in addition to the hazard class 2.3 may be required. The data within this publication may be used for acute toxicity categorization with the United Nations (UN) *Globally Harmonized System of Classification and Labelling of Chemicals* (GHS) [3].

Information on toxicity of gases has been obtained from a variety of sources. Specifically, LC₅₀ and LC₁₀₀ data were obtained from the National Institute for Occupational Safety and Health (NIOSH), *Registry of Toxic Effects of Chemical Substances* (RTECS) and Sax’s *Dangerous Properties of Industrial Materials*, Sixth Edition, and ISO 10298, *Gas Cylinders - Gases And Gas Mixtures - Determination Of Toxicity For The Selection Of Cylinder Valve Outlets* [4, 5, 6].

2 Scope and purpose

2.1 Scope

This publication applies to users, transporters, and manufacturers affected by label requirements and addresses classifications for gas mixtures that contain a toxic component(s). This standard categorizes gas mixtures under the transportation regulations that establish a toxicity threshold criterion based on LC₅₀ rat 1 hr values.

2.2 Purpose

The purpose of this publication is to establish a means to categorize toxic gas mixtures based on acute toxicity.

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.