



**CGA G-6.1—2022**  
**STANDARD FOR**  
**LARGE INSULATED LIQUID**  
**CARBON DIOXIDE SYSTEMS**  
**AT USER SITES**

**EIGHTH EDITION**

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NOTE—Technical changes from the previous edition are underlined.

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## 1 Introduction

This publication is one of a series compiled by the Compressed Gas Association, Inc., to meet the demand for information on the production, transportation, handling, and storage of carbon dioxide in gaseous, liquid, and solid states. There are other CGA publications that provide similar information on other products.

This publication addresses the hazards specifically associated with insulated liquid carbon dioxide systems at user sites with individual containers each greater than 1000 lb liquid capacity [1].<sup>1</sup>

CGA G-6, *Carbon Dioxide*, contains information critical to safe storage and handling of carbon dioxide [2]. To ensure personnel safety and proper system design, reference to CGA G-6 is highly recommended. Without obtaining CGA G-6, the reader will not be provided significant information related to the physical properties and common hazards associated with storage, production, transportation, and handling of carbon dioxide.

## 2 Scope and purpose

### 2.1 Scope

This publication covers the design, location, installation, operation, and maintenance of large insulated liquid carbon dioxide supply systems located at user sites where each container has a liquid capacity of greater than 1000 lb. Industry often refers to these as bulk systems. The system covered is from the container fill connections to the user's process piping.

It also contains minimum requirements and recommended practices for the design, construction, installation, operation, and maintenance of such systems.

This publication is intended to serve as a guide for regulatory authorities in writing regulations and to assist designers, inspectors, and other interested parties.

Small, stationary, insulated carbon dioxide systems with containers having individual capacities of 1000 lb or less and designed, manufactured, and certified in accordance with ASME Boiler & Pressure Vessel Code, Section VIII, Division 1 requirements are not covered by this publication, refer to CGA G-6.5, *Standard for Small Stationary Insulated Carbon Dioxide Supply Systems* [1, 3].

Stationary, uninsulated carbon dioxide systems are outside the scope of this publication.

NOTE—Many of the provisions and design philosophies in this publication apply to storage units in production and depot service. However, the operation, operating conditions, and control systems of those units may require further engineering, controls and safety equipment than required by storage units at a user site.

### 2.2 Purpose

The purpose of this publication is to provide a standard for stationary insulated liquid carbon dioxide storage and supply systems at user sites.

## 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.

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<sup>1</sup> References are shown by bracketed numbers and are listed in order of appearance in the reference section.