



**CGA G-10.1—2023**  
**COMMODITY SPECIFICATION**  
**FOR NITROGEN**

**NINTH EDITION**

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NOTE—Technical changes from the previous edition are underlined.

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## 1 Scope

This publication describes specification requirements for gaseous and liquid nitrogen.

This publication does not attempt to recommend or establish end usage designations for specific types of grades of products. Users requiring this kind of information should contact individual gas suppliers.

## 2 Definitions

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

### 2.1 Publication terminology

#### 2.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

#### 2.1.2 Should

Indicates that a procedure is recommended.

#### 2.1.3 May

Indicates that the procedure is optional.

#### 2.1.4 Will

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

#### 2.1.5 Can

Indicates a possibility or ability.

### 2.2 Technical definition

#### 2.2.1 Container

Portable compressed gas cylinders and liquid containers made in accordance with Title 49 of the U.S. *Code of Federal Regulations* (49 CFR) Parts 100-199; Transport Canada's *Transportation of Dangerous Goods Regulations*; or the ASME *Boiler and Pressure Vessel Code*, Section VIII, Div 1 [1, 2, 3].<sup>1</sup>

## 3 Classification

### 3.1 Types

Gaseous nitrogen is denoted as Type I and liquid nitrogen as Type II.

### 3.2 Quality verification levels (grades)

Table 1 presents the component maximum in parts per million (ppm [v/v]) unless otherwise stated for the quality verification levels (QVLs) of nitrogen. A blank indicates no maximum limiting characteristic. The absence of a value in a listed QVL does not imply that the limiting characteristic is or is not present, but merely indicates that the test is not required for compliance with the specification. Typical uses are listed in Table 2.

### 3.3 Quality tests

By standard practice, the supplier ensures the QVL of nitrogen. If otherwise required, alternative control procedures are described in 4.3.1, 4.3.2, and Sections 5 and 6. Other control procedures not listed in this specification are acceptable if agreed upon between the supplier and the customer.

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