CGA

Compressed Gas Association

The Standard For Safety Since 1913

CGA G-10.1—2016

COMMODITY SPECIFICATION FOR NITROGEN

EIGHTH EDITION

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Work Item 13-014
Atmospheric Gases and Equipment Committee

NOTE—Technical changes from the previous edition are underlined.

EIGHTH EDITION: 2016
SEVENTH EDITION: 2008
SIXTH EDITION: 2004
FIFTH EDITION: 1997

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Tables

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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].[1]

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.

WARNING: *Nitrogen can act as an asphyxiant by displacing the amount of oxygen necessary to support life. For additional information, see CGA P-9,* The Inert Gases: Argon, Nitrogen, and Helium [4]*.*

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