



Designation: D7323 – 13

Standard Practice for Handling, Transportation, and Storage of IG-100 (Nitrogen)¹

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1. Scope

1.1 This practice covers guidance and direction to suppliers, purchasers, and users in the handling, transportation, and storage of IG-100 (nitrogen).

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *CGA Standards:*²

C-1 Methods for Pressure Testing Compressed Gas Cylinders

C-6 Standards for Visual Inspection of Steel Compressed Gas Cylinders

C-7 Guide to Preparation of Precautionary Labeling and Marking of Compressed Gas Containers

P-1 Safe Handling of Compressed Gases in Containers

2.2 *U.S. Government Standards, Code of Federal Regulations (CFR):*³

CFR Title 40, Part 82.106 Environmental Protection Agency, Warning Statement Requirements

CFR Title 49, Part 172 U.S. Department of Transportation (DOT), Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

CFR Title 49, Part 172.101 U.S. DOT, Tables of Hazardous Materials and Special Provisions

¹ This practice is under the jurisdiction of ASTM Committee D26 on Halogenated Organic Solvents and Fire Extinguishing Agents and is the direct responsibility of Subcommittee D26.09 on Fire Extinguishing Agents.

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² Available from Compressed Gas Association.

³ Available from U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20036.

CFR Title 49, Part 173 U.S. DOT Specification, Shippers-General Requirements for Shipping and Packaging

CFR Title 49, Part 178 U.S. DOT Specification, Specifications for Packaging

CFR Title 49, Part 180 U.S. DOT, Continuing Qualification and Maintenance of Packagings

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *containers*—storage vessels for IG-100.

3.1.2 *cylinders*—containers of IG-100.

3.1.3 *IG-100 (nitrogen)*—compound used to inert or suppress a fire or explosion hazard.

3.1.4 *insulated*—placed in an isolated situation to protect and prevent the transfer of damage.

4. Significance and Use

4.1 This practice provides requirements for the handling, transportation, and storage of IG-100 encountered in distribution through both commercial and military channels. It is intended to ensure that IG-100 is handled, transported, and stored in such a way that its physical property virtues are not degraded. Transport may be by various means, such as, but not limited to, highway, rail and water.

5. Practice

5.1 To ensure safe handling, loading, unloading, storing, and transporting of material, personnel shall be trained in the CGA publications and CFR regulations as listed in Sections 2.1 and 2.2, respectively.

5.2 *Handling:*

5.2.1 Handling shall be in accordance with CGA P-1.

5.2.1.1 Personnel who handle or store, or both, cylinders of IG-100 shall be trained properly to recognize and identify the characteristics of the product and the proper methods of safely handling full, partially full, and empty cylinders.

5.2.2 IG-100 handling shall be in nonsmoking, heater-free, ventilated areas to preclude product accumulation. Provisions shall be made to ensure that service areas limit IG-100 concentrations to not exceed 52 % (10 % Sea Level Oxygen equivalency) for 30 s and 7 % (19.5 % Sea Level Oxygen equivalency) for 8 h.