



**CGA P-35—2021  
GUIDELINE FOR UNLOADING  
TANKERS OF CRYOGENIC  
OXYGEN, NITROGEN, AND  
ARGON**

**SECOND EDITION**

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NOTE—Technical changes from the previous edition are underlined.

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## 1 Scope

This publication was developed to provide general safety and unloading guidelines to be used by service providers and providers of drivers and equipment to the compressed gas industry for the distribution of cryogenic liquids by bulk cargo tank. These guidelines assist drivers when there are physical differences between the cargo tanks, pumping systems, and customer storage tanks that the driver will operate during the unloading of cryogenic liquids.

NOTE—In this guideline, the use of “driver,” “operator,” and “unloading personnel” are interchangeable.

Specific details for pumping power systems are not included in this publication. The operator should refer to the appropriate operating manual before unloading liquid product at the customer station.

A warm storage vessel fill procedure is not within the scope of this publication. Warm storage vessels should be filled with the assistance of a cryogenic tank technician in accordance with a written procedure.

## 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.

## 3 Safety while unloading at a customer’s site

While unloading product at a customer’s site, follow these general safety guidelines:

- Unauthorized persons are not allowed in the immediate area while unloading;
- Clean, loose-fitting, insulated gauntlet gloves, hard hats, safety glasses, full-face shields, hearing protection, and safety shoes should be worn for protection. Some companies also require the use of personal atmospheric monitors and/or flame-retardant clothing. High-visibility clothing may be used. For additional information on personal protective equipment, see CGA P-44, Selection of Personal Protective Equipment [1];<sup>1</sup>

**CAUTION: Full-face shields shall be lowered during loading and unloading to protect the driver from cryogenic splash or spray.**

- Use only low ignition energy tools when unloading oxygen. See CGA PS-55, CGA Position Statement on Use of Nonsparking Tools, for additional information about low ignition energy tools [2];
- No smoking, flames, or other ignition sources are permitted within 25 ft (7.6 m) in any direction around a liquid oxygen trailer and tractor;

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