



CGA G-19.3—2020

STANDARD FOR REPURPOSING INDUSTRIAL GAS EQUIPMENT INTO NATURAL GAS SERVICE

FIRST EDITION

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Work Item 17-118
Natural Gas Technology Committee

FIRST EDITION: 2020

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1 Introduction

This publication contains requirements for repurposing industrial gas equipment into natural gas service. There are additional risks associated with natural gas operations beyond those of industrial gas operations. The additional risks drive different and/or specialized designs for natural gas equipment. Some types of industrial gas equipment are directly usable in natural gas operations; however, most types will require modifications to ensure the safety of the operations.

More requirements for equipment in natural gas service can be found in CGA G-19, *Guideline for Natural Gas Safe Handling and Operations*, CGA G-19.1, *Standard for Natural Gas Supply Systems*, and CGA G-19.2, *Standard for Natural Gas Transportation and Transfer* [1, 2, 3].¹

2 Scope

The intent of this publication is to provide requirements for repurposing industrial gas equipment into natural gas service and not the reverse. Natural gas equipment, after its first use, is typically saturated with hydrocarbons. Such equipment, if improperly cleaned, poses a serious risk of oxygen related fire or explosion.

For that reason, this publication does not address repurposing natural gas equipment into other industrial gas service. Typically, industrial gas equipment is interchangeable between nitrogen, oxygen, or argon (per manufacturer's instructions) and thus could pose a heightened risk of oxygen-related fire or explosion.

Equipment that has been used in any of the following industrial gases is covered by this publication:

- oxygen;
- helium;
- hydrogen;
- argon; and
- nitrogen.

This publication covers the following types of equipment:

- transport trailers;
- ISO tank containers;
- multi-element gas containers (MEGCs);
- cryogenic fluid bulk tanks;
- pressure vessels;
- cylinders;
- portable tanks;
- vaporizers; and
- pumps and process related equipment.

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