



CGA E-9—2017
STANDARD FOR
ETFE-LINED AND PTFE-LINED
FLEXIBLE HOSES FOR
COMPRESSED GAS SERVICE

FIFTH EDITION

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NOTE—Technical changes from the previous edition are underlined.

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1 Introduction

Flexible lined hoses are used in the filling and discharging of compressed gas cylinders and bundles and as components of other compressed gas distribution systems.

2 Scope

This publication provides a minimum standard for braided, ethylene tetrafluoroethylene (ETFE)-lined and poly-tetrafluoroethylene (PTFE)-lined flexible hoses that have a nominal inside diameter (ID) of 0.25 in (6.4 mm) or less and shall have a maximum allowable working pressure (MAWP) of 3000 psi (20 680 kPa) at 70 °F (21.1 °C).^{1, 2} These flexible hoses are sometimes referred to as pigtails.

This standard does not cover requirements for other polymeric or elastomeric line hoses.

3 Definitions

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

3.1.1 **Publication terminology**

3.1.2 **Shall**

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

3.1.3 **Should**

Indicates that a procedure is recommended.

3.1.4 **May**

Indicates that the procedure is optional.

3.1.5 **Will**

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

3.1.6 **Can**

Indicates a possibility or ability.

4 Materials

A basic flexible hose includes the tube, braid reinforcement, and permanently attached end fittings. PTFE-lined flexible hoses should only be used with gases that are compatible with their materials of construction.

ETFE-lined and PTFE-lined flexible hoses shall not be used with poisonous, toxic, or pyrophoric gases because permeation of gas through the hose material creates a potential hazard.

ETFE-lined and PTFE-lined flexible hoses should not be used with cryogenic liquids because of temperature incompatibility.

PTFE-lined flexible hoses should not be used for hydrogen or helium service because of the potential for excessive effusion.

ETFE-lined flexible hoses are not recommended for oxygen use.

¹ kPa shall indicate gauge pressure unless otherwise noted as (kPa, abs) for absolute pressure and (kPa, differential) for differential pressure. Also, kPa values are rounded off per CGA P-11, *Metric Practice Guide for the Compressed Gas Industry* [1].

² References are shown by bracketed numbers and are listed in order of appearance in the reference section.