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NATIONAL STANDARD

ANSI/CAN/UL/ULC 252:2025

STANDARD FOR SAFETY

Compressed Gas Regulators

Approved American National Standard
ANSI

ANSI/UL 252-2025

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UL Standard for Safety for Compressed Gas Regulators, ANSI/CAN/UL/ULC 252

Eleventh Edition, Dated October 27, 2022

Summary of Topics

This revision of ANSI/CAN/UL/ULC 252 dated February 28, 2025 includes the following changes in requirements:

– Aligning with UL/ULC 252A with respect to glossary terms and Excess Pressure Test; 5.6 and 14.5.

– Revising line regulator definition and requirements for connections; 5.4 and 8.2

– Removing MPS gas from the standard and clarifying that the terms "LP-Gas" and "propane" are interchangeable; 1.5, 1.6, 5.2, Table 5.1, 7.2, Table 16.1, 16.1.3, and 16.3.1 – 16.3.5

Text that has been changed in any manner or impacted by ULSE's electronic publishing system is marked with a vertical line in the margin.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated August 16, 2024 and November 29, 2024.

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Standard for Compressed Gas Regulators

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Third Edition – August, 1960
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Eleventh Edition

October 27, 2022

This ANSI/CAN/UL/ULC Safety Standard consists of the Eleventh Edition including revisions through February 28, 2025.

The most recent designation of ANSI/UL 252 as an American National Standard (ANSI) occurred on February 28, 2025. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, Preface or SCC Foreword.

The Department of Defense (DoD) has adopted UL 252 on September 26, 1988. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

This standard has been designated as a National Standard of Canada (NSC) on February 28, 2025.

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CONTENTS

Preface 5

INTRODUCTION

1 Scope 7
2 Components 7
3 Units of Measurement 8
4 Referenced Publications 8
5 Glossary 9

CONSTRUCTION

6 Assembly 10
7 Materials 10
8 Connections 11
9 Accessories 12
10 Hydrogen Material 12

PERFORMANCE

11 General 13
12 Torque Test 13
13 Seat- and External-Leakage Test 14
14 Excess Pressure Test 15
15 Endurance Test 15
16 Volume-Change and Weight-Loss Tests 16
16.1 General 16
16.2 Tests using n-Hexane and IRM 903 Oil 16
16.3 Tests using liquid MPS gas 17
17 Accelerated-Aging Test 17
18 Accelerated Aging Test for Nonmetallic Bonnet Bodies 17
19 Accelerated Hydrogen-Pressure Aging Test 17
20 Hydrogen Low Temperature Test 17
21 Embrittlement Test 18
22 Comparative Corrosion Tests 18
22.1 General 18
22.2 Tests in the presence of salt spray (fog) 18
22.3 Tests in the presence of moist hydrogen sulfide-air mixture 18
22.4 Tests in the presence of moist sulfur dioxide-carbon dioxide-air mixture 19

MANUFACTURING AND PRODUCTION TESTS

23 General 19

MARKINGS

24 General 19

INSTRUCTIONS

25 General 20

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ANNEX A (normative) – REGULATORS FOR OXYGEN AND ACETYLENE WELDING

INTRODUCTION

A1 Scope 21
A2 Glossary 21

CONSTRUCTION

A3 General 21
A4 Connections 22
A5 Relief Valves 22
A6 Pressure Gauges 22

PERFORMANCE

A7 General 23
A8 Performance Characteristics Test 23
A9 Pressure Regulation Test 23
A10 Flow Regulation Test 23
A11 Static Increment (Lock-Up) Test 24
A12 Flow Capacity Test 24
A13 Proof Pressure Test 24
A14 Burst Pressure Test 25
A15 Endurance Test 25
A16 Immersion Tests 25

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Preface

This is the Eleventh Edition of ANSI/CAN/UL/ULC 252, Standard for Compressed Gas Regulators.

UL is accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC) as a Standards Development Organization (SDO). ULC Standards is accredited by the Standards Council of Canada (SCC) as a Standards Development Organization (SDO).

This Standard has been developed in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization.

This ANSI/CAN/UL/ULC 252 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization. In the event that no revisions are issued for a period of four years from the date of publication, action to revise, reaffirm, or withdraw the standard shall be initiated.

Annex A is identified as Normative, as such, forms mandatory parts of this Standard.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

This joint American National Standard and National Standard of Canada is based on, and now supersedes, the Tenth Edition of UL 252 and ULC/ORD-C252-75.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a “yes” or “no” answer based on the literal text of the requirement concerned.

Comments or proposals for revisions on any part of the Standard may be submitted at any time. Proposals should be submitted via a Proposal Request in the Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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This Edition of the Standard has been formally approved by the Technical Committee (TC) on Compressed Gas Regulators and Accessories, TC 252.

This list represents the TC 252 membership when the final text in this standard was balloted. Since that time, changes in the membership may have occurred.

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TC 252 Membership

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This Standard is intended to be used for conformity assessment.

The intended primary application of this standard is stated in its scope. It is important to note that it remains the responsibility of the user of the standard to judge its suitability for this particular application.

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INTRODUCTION

1 Scope

1.1 These minimum requirements cover regulators used to reduce the pressure of compressed industrial gases from a source or storage cylinder pressure of not more than 5500 psig (37.91 MPa) to the use pressure.

1.2 Regulators covered by these requirements are intended for use with compressed gases such as air, carbon dioxide, inert gases, fuel gases, nitrogen, nitrogen oxide, and oxygen.

1.3 Products covered by this Standard are intended to be installed and used in accordance with the applicable Codes and Regulations as determined by the Authority Having Jurisdiction (AHJ), such as, but not limited to:

In the United States:

a) The Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes, NFPA 51;

b) Occupational Safety and Health Administration (OSHA) 29 CFR 1926.350 – Gas welding and cutting.

In Canada:

a) Safety in welding, cutting, and allied processes, CSA W117.2.

1.4 Regulators for welding, cutting, and heating operations are intended for use in accordance with the Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes, NFPA 51, or Safety in Welding, Cutting, and Allied Processes, CSA W117.2. Refer to Annex A.

1.5 These requirements do not cover:

a) Liquified Petroleum Gas (LP-Gas) pressure regulators for equipment intended for installation and use in accordance with requirements of the Liquefied Petroleum Gas Code, NFPA 58, or the Natural Gas and Propane Installation Code, CSA B149.1. Refer to the Standard for LP-Gas Regulators and Regulator Systems, UL 144.

b) Regulators for handling liquids under cryogenic temperatures.

c) The regulating performance flow characteristics of the regulator, and the physiological effects of regulators to be used with medical gases.

1.6 For the purposes of this Standard the terms “LP-Gas” and “Propane” are interchangeable.

2 Components

2.1 Except as indicated in 2.2, a component of a product covered by this standard shall comply with the requirements for that component.

2.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

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b) Is superseded by a requirement in this standard.

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3.2 Unless otherwise indicated, all voltage and current values mentioned in this standard are root-mean-square (rms) value.

4 Referenced Publications

4.1 The documents shown below are referenced in the text of this Standard. Unless otherwise stated elsewhere in this Standard such referenced shall be considered to indicate the most recent edition and/or revisions of the document at the date on which the Committee approved this UL/ULC Standard.

ANSI B1.20.3, *Dryseal Pipe Threads*

ASME B1.20.1, *Pipe Threads, General Purpose*

ASTM A53, *Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless*

ASTM B117, *Standard Practice for Operating Salt Spray (Fog) Testing Apparatus*

ASTM D471, *Standard Test Method for Rubber Property-Effect of Liquids*

ASTM D572, *Standard Test Method for Rubber Deterioration by Heat and Oxygen*

ASTM E145, *Standard Specification for Gravity-Convection and Forced-Ventilation Ovens*

CGA V-1, *Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections*

CGA E-3, *Low Pressure Pipeline Station Outlet Regulator Inlet Connection Standard*

CGA-G-4.1, *Cleaning Equipment for Oxygen Service*

CGA V-1, *Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections*

CSA C22.2 No. 0.15, *Adhesive Labels*

ISO 3253, *Gas welding equipment – Hose connections for equipment for welding, cutting and allied processes*

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NFPA 51, *Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes*

NFPA 58, *Liquefied Petroleum Gas Code*

UL/ULC 252A, *Compressed Gas Regulators Accesories*

UL/ULC 404, *Gauges, Indicating Pressure, for Compressed Gas Service*

UL 429, *Electrically Operated Valves*

UL 969, *Marking and Labeling Systems*

5 Glossary

5.1 For the purpose of this standard the following definitions apply.

5.2 FUEL GAS – Acetylene, hydrogen, natural gas, LP-Gas, propylene, and other liquefied and nonliquefied flammable gases that are stable because of their composition or because of the conditions of storage.

5.3 INERT GAS – Helium, neon, argon, krypton, xenon and radon.

5.4 REGULATOR:

a) BACKPRESSURE REGULATOR – A regulator provided with a valve that is installed at the end of a system to provide an obstruction to flow and regulate upstream (back) pressure.

b) CYLINDER REGULATOR – A regulator provided with inlet fittings complying with the Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections, CGA V-1 and intended to reduce the pressure from that of the cylinder to the operating pressure.

c) LINE REGULATOR – A regulator that is provided with inlet connections complying with 8.2 and intended to be installed in a compressed gas system to reduce the source pressure to the use pressure.

d) PRESSURE REGULATOR – A regulator provided with a valve that is installed to a cylinder at the beginning of a system or before pressure sensitive equipment to regulate or reduce higher pressure. A regulator attached to a cylinder is provided with inlet fittings complying with the Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections, CGA V-1 and intended to reduce the pressure from that of the cylinder to the operating pressure.

e) STATION REGULATOR – A regulator that is provided with an inlet connection complying with the Low Pressure Pipeline Station Outlet/Regulator Inlet Connection Standard, CGA E-3 and intended to reduce a pressure of less than 200 psig (1.38 MPa) to the use pressure.

5.5 REGULATOR CLASS – Defines the maximum end use pressure for the product based on the gas pressure or the CGA connection provided on the compressed gas regulator. See Table 5.1. For backpressure regulators the maximum operating pressure is supplied by the manufacturer.

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