



**CGA P-66—2015**  
**GUIDELINE FOR THE**  
**SELECTION OF PRESSURE**  
**RELIEF DEVICES AND**  
**VALVE OUTLETS FOR**  
**UN MARKED CYLINDERS**

**FIRST EDITION**

**PLEASE NOTE:**

The information contained in this document was obtained from sources believed to be reliable and is based on technical information and experience currently available from members of the Compressed Gas Association, Inc. and others. However, the Association or its members, jointly or severally, make no guarantee of the results and assume no liability or responsibility in connection with the information or suggestions herein contained. Moreover, it should not be assumed that every acceptable commodity grade, test or safety procedure or method, precaution, equipment or device is contained within, or that abnormal or unusual circumstances may not warrant or suggest further requirements or additional procedure.

This document is subject to periodic review, and users are cautioned to obtain the latest edition. The Association invites comments and suggestions for consideration. In connection with such review, any such comments or suggestions will be fully reviewed by the Association after giving the party, upon request, a reasonable opportunity to be heard. Proposed changes may be submitted via the Internet at our web site, [www.cganet.com](http://www.cganet.com).

This document should not be confused with federal, state, provincial, or municipal specifications or regulations; insurance requirements; or national safety codes. While the Association recommends reference to or use of this document by government agencies and others, this document is purely voluntary and not binding unless adopted by reference in regulations.

A listing of all publications, audiovisual programs, safety and technical bulletins, and safety posters is available via the Internet at our website at [www.cganet.com](http://www.cganet.com). For more information contact CGA at Phone: 703-788-2700, ext. 799. E-mail: [customerservice@cganet.com](mailto:customerservice@cganet.com).

Work Item 12-137  
Cylinder Valve Committee

---

FIRST EDITION: 2015

© 2015 The Compressed Gas Association, Inc. All rights reserved.

All materials contained in this work are protected by United States and international copyright laws. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopying, recording, or any information storage and retrieval system without permission in writing from The Compressed Gas Association, Inc. All requests for permission to reproduce material from this work should be directed to The Compressed Gas Association, Inc., 8484 Westpark Drive, Suite 220, McLean, VA 22102. You may not alter or remove any trademark, copyright or other notice from this work.

<b>Contents</b>	<b>Page</b>
1 Introduction.....	1
2 Scope .....	1
3 Definitions.....	1
4 Pressure relief devices .....	1
5 CGA valve outlets.....	2
6 Frequently asked questions about PRDs and CGA valve outlet selection.....	3
7 References .....	3
<b>Table</b>	
Table 1—Differences in PRD ratings for DOT and UN marked cylinders .....	2

This page is intentionally blank.

## 1 Introduction

With an increasing number of cylinders with United Nations (UN) stamp markings being transported in the U.S. and Canada, numerous questions arise as to what requirements are for the selection of pressure relief devices (PRDs) and Compressed Gas Association (CGA) valve outlets for these cylinders.

## 2 Scope

This publication provides guidelines to assist in the selection of a PRD for a cylinder with UN stamp markings and the selection of a CGA valve outlet for a cylinder with UN stamp markings. It is important to note that some UN marked cylinders may also be marked with U.S. Department of Transportation (DOT) and/or Transport Canada (TC) markings. This publication also applies to the determination of specific setting of PRDs on comparable DOT specification and UN marked cylinders. It also details the proper stamp marking that needs to be on the PRD.

This publication applies to high pressure seamless steel and aluminum alloy cylinders.

This publication does not apply to CGA valve outlets on manifolded cylinders and tubes or to tubes.

## 3 Definitions

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

### 3.1 Publication terminology

#### 3.1.1 Shall

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

#### 3.1.2 Should

Indicates that a procedure is recommended.

#### 3.1.3 May

Indicates that the procedure is optional.

#### 3.1.4 Will

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

#### 3.1.5 Can

Indicates a possibility or ability.

## 4 Pressure relief devices

Requirements for PRDs on UN marked cylinders are found in Title 49 of the U.S. *Code of Federal Regulations* (49 CFR) [1].<sup>1</sup> Sections 173.301b(b) and 173.301(f) require that PRDs are in accordance with CGA S-1.1, *Pressure Relief Device Standards—Part 1—Cylinders for Compressed Gases* [2].<sup>2</sup> The previous references mandate that for Division 2.1 or 2.3 materials, the PRD is set at the test pressure of the cylinder. Refer to 49 CFR 173.301(f). For Division 2.2 materials, the PRD may be set as high as the test pressure but a lower value may also be used. Per requirements in 173.301(g) and 173.301b(b), PRDs on manifolded horizontal cylinders or bundles of cylinders may be based on the lowest marked pressure [1].

The test pressure (PH) for a UN cylinder for compressed (nonliquefied) gases is 1.5 times the working pressure (PW) and both pressures are required to be clearly marked on the cylinder. For example, a UN 207 bar cylinder has a maximum working pressure (PW) of 207 bar. This cylinder would have a test pressure of 311 bar. Therefore, the PRD would be rated and marked at 311 bar (PH) as required by DOT for Division 2.1 and 2.3 gases

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

<sup>2</sup> Requirements for PRDs for DOT marked cylinders are found in 49 CFR 173.301(f).