CGA V-12—2020

LEAK DETECTION FLUIDS USE WITH GAS CYLINDER PACKAGES

THIRD EDITION

CGA
Compressed Gas Association
The Standard For Safety Since 1913

PREFACE

As part of a program of harmonization of industry standards, the Compressed Gas Association (CGA) has issued CGA V-12, *Leak Detection Fluids Use with Gas Cylinder Packages* jointly produced by members of the International Harmonization Council and originally published by the European Industrial Gases Association (EIGA) as EIGA Doc 78, *Leak Detection Fluids Use with Cylinder Packages*.

This publication is intended as an international harmonized standard for the worldwide use and application of all members of the Asia Industrial Gases Association (AIGA), Compressed Gas Association (CGA), European Industrial Gases Association (EIGA), and Japan Industrial and Medical Gases Association (JIMGA). Each association's technical content is identical, except for regional regulatory requirements and minor changes in formatting and spelling.

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Work Item 19-008
Cylinder Valve Committee

NOTE—Technical changes from the previous edition are underlined.

THIRD EDITION: 2020
SECOND EDITION: 2014
FIRST EDITION: 2008

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1 Introduction

Over the years leak detection techniques have varied from the use of simple household soap-based solutions to specialized leak detection fluids (LDFs). These specialized LDFs are far superior to household soap-based solutions that can contain contaminants or other detrimental constituents. As such, household soap-based solutions should not be used.

There are various national regulations and international guidelines to ensure that cylinders and valves are checked for leak tightness. Though such a postfill check is an essential part of a quality control procedure to ensure that customers receive a nonleaking package, the choice of the LDF needs to be carefully considered because of potential hazards from LDFs. These potential hazards include inducing stress corrosion cracking (SCC) and incompatibility with materials and cylinder contents such as oxygen.

2 Scope

This publication applies to gas cylinder packages. It covers the selection and use of specialized LDFs that are suitable for industrial gases including medical and food gases that have particular compatibility requirements.

This publication may be used as a guideline when fluids are used for leak detection in other gas applications.

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 Types of leak detection materials

These LDFs can include foams as well as liquids. They include detergent-based liquids and liquids packaged with propellants for aerosol application. Whatever material(s) is selected, the final packaged LDF shall meet the criteria and considerations to satisfy the specific application.

5 Using a leak detection fluid

A method commonly used for general leak testing procedures is to either apply an LDF by means of a brush to joints and other potential leakage points, or by spraying an LDF on the required points on the cylinder/valve package.