CGA

Compressed Gas Association

The Standard For Safety Since 1913

CGA P-75—2023

STANDARD FOR PROPER HANDLING OF INSULATED TANKS THAT ARE IN OBVIOUS SIGNS OF LOSS OF VACUUM

SECOND EDITION

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Work Item 22-046
Bulk Distribution Equipment and Standards Committee

NOTE—Technical changes from the previous edition are underlined.

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1 Introduction

Vacuum-insulated tanks are widely used to store cryogenic and refrigerated liquids. These tanks use a vacuum between the inner, process vessel, and the outer tank jacket to reduce heat leak into the stored product. This vacuum can be lost, either through normal tank aging or by a leak. The cause of any vacuum loss shall be investigated and the remedial actions taken.

2 Scope

This publication addresses vacuum-insulated tanks containing cryogenic and refrigerated liquids. This publication is particularly important for those systems with a large stored volume and/or systems that may be unattended.

The scope of this publication covers equipment including:

- bulk storage;
- dewars; and
- transportation equipment.

Although this publication addresses vacuum-insulated tanks, some of the principles may also be used for vacuum-insulated equipment such as piping, pumps, etc.

3 Definitions

For the purposes 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.

3.2 Technical definitions

3.2.1 Annular space
Volumetric space between the inner vessel and outer tank jacket that contains insulation materials and is evacuated to lessen heat flux.

3.2.2 Cryogenic liquids
Refrigerated, liquefied gas having a boiling point below –130 °F at 14.7 psia (–90 °C at 101.3 kPa, abs).[1, 2]

[1] psi, bar, and kPa shall indicate gauge pressure unless otherwise noted as (psia; bar, abs; and kPa, abs) for absolute pressure or (psid; bar, dif; and kPa, dif) for differential pressure. All kPa values are rounded off per CGA P-11, *Guideline for Metric Practice in the Compressed Gas Industry* [1].

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