

December 7, 2017

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UL 1349

Outline of Investigation for LP-Gas Vaporizers

Issue Number: 2

DECEMBER 7, 2017

Summary of Topics

This second issue of the Outline of Investigation for LP-Gas Vaporizers, Subject 1349, which covers requirements for stationary vaporizers used in LP-Gas systems in accordance with LP-Gas Code, NFPA 58, is being issued to harmonize UL 1349, Section 4.4, with NFPA 58, Section 5.24.9.4 and to update the Moist Ammonia Air Stress Cracking Test.

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INTRODUCTION

1 Scope

1.1 These requirements cover liquefied petroleum gas (LP-Gas) vaporizers of the stationary type.

1.2 Vaporizers covered by these requirements are intended for use, and installation in propane systems and applications covered by the Liquefied Petroleum Gas Code, NFPA 58, and electrical components installed in accordance with the National Electrical Code, NFPA 70.

2 General

2.1 Components

2.1.1 Except as indicated in this clause, a component of a product covered by this standard shall comply with the requirements for that component. See the Standards for Components appendix for a list of standards covering components generally used in the products covered by this standard.

2.1.2 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
- b) Is superseded by a requirement in this standard.

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

2.1.4 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.

2.2 Units of measurement

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

2.3 Undated references

2.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

3 Glossary

3.1 For the purpose of this outline, the following definitions apply.

3.2 LIQUEFIED PETROLEUM GAS (LP-GAS or LPG) – Any material having a vapor pressure not exceeding that allowed for commercial propane composed predominantly of the following hydrocarbons, either by themselves (excluding propylene) or as mixtures: propane, propylene, butane (normal butane or iso-butane) and butylenes.

3.3 VAPORIZER – A piece of equipment, which includes a container, that receives LP-Gas in liquid form and adds sufficient heat energy to convert the liquid to a gaseous state. They are further classified by the type of energy used and how the energy is applied to the LP-Gas.

3.4 VAPORIZER, DIRECT-FIRED – A type of vaporizer in which the heat energy is furnished by direct flame impingement onto a heat exchange surface in contact with liquid LP-Gas.

3.5 VAPORIZER, ELECTRIC – A type of vaporizer in which electrical energy is used as a source of heat. They are further classified by how the electrical energy is applied to the LP-Gas.

3.6 VAPORIZER, ELECTRIC, DIRECT-IMMERSION – A type of vaporizer that has an electric element immersed directly into the LP-Gas liquid and vapor.

3.7 VAPORIZER, ELECTRIC, INDIRECT – An immersion-type vaporizer that has the electric element immersed into an interface solution that is in contact with the LP-Gas heat exchanger or applies electrical energy to an intermediate heat sink.

3.8 VAPORIZER, INDIRECT (or INDIRECT-FIRED) – A vaporizer in which heat energy is furnished by steam, hot water, the ground, surrounding air, or other heated medium to a vaporizing chamber or to tubing, pipe coils, or other heat exchange surface containing the liquid LP-Gas. The heating of the medium is at a point remote from the vaporizer portion containing the LP-Gas. This definition includes a direct-fired water-bath vaporizer (the water bath is the heat transfer medium).