

Addenda to the First Edition

ANSI Z21.94-2006 • CSA 6.31-2006

American National Standard/
CSA Standard for
**Automatic Flammable
Vapor Sensor Systems and
Components**

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Preface

The standards set forth herein apply to the first edition of the Standard for Automatic Flammable Vapor Sensor Systems and Components, ANSI Z21.94-2006 • CSA 6.31-2006, and supersede corresponding standards therein. Following their preparation by the supervising Technical Advisory Group, they were accepted by the American National Standards Institute (ANSI) and the Interprovincial Gas Advisory Council (IGAC), and subsequently approved.

NOTE: Changes, other than editorial, are denoted by a vertical line in the margin.

APPROVED



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IGAC

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Part II: Performance

2.2 Flammable Vapor Sensitivity

The sensor or system under test shall produce a signal indicating that the flammable vapor limit has been reached, within the period of time specified by the manufacturer, but not to exceed 60 seconds, after being exposed to the flammable vapor limit, when tested in accordance with the following Method of Test.

Method of Test

The sensor or the system's sensor components under test shall be tested in a chamber such as the typical chamber shown in Figures 1, Typical Flammable Vapor Sensor Test Chamber (Side view external wall) through 3, Typical Flammable Vapor Sensor Test Chamber (Top view), which is capable of maintaining the temperature and relative humidity conditions specified in Table VII, Temperature/RH Conditions.

The accuracy and precision of the measurement test equipment shall be as shown in Table VIII, Requirements of Flammable Vapor Measurement Test Equipment.

The accuracy and precision of the test chamber shall be as shown in Table IX, Requirements of Flammable Vapor Measurement Test Chamber.

The chamber shall be capable of generating and maintaining the flammable vapor at a uniform concentration throughout the test chamber equivalent to the flammable vapor limit (as specified by the manufacturer) by the injection of winter blend gasoline, through a means such as atomized into a fine mist.

The chamber shall be capable of causing the gasoline vapor concentration surrounding the sensor to increase from zero percent, to the flammable vapor limit (as specified by the manufacturer) within a period of 5 seconds.

The signal from the sensor or system shall be monitored throughout each test.

The sensor or system shall be maintained at test condition 1 of Table VII for a minimum period of two hours or until the sensor's or system's signal does not change by 5 percent over a period of 15 minutes. There shall be no gasoline vapor in the chamber during this period.

Once the sensor or system has stabilized, it shall be exposed to a gasoline vapor concentration equivalent to the flammable vapor limit. The time required for the gasoline vapor concentration to increase to the flammable vapor limit at the sensor location shall not exceed 5 seconds. This gasoline vapor concentration shall be maintained throughout the remainder of the test. A suitable timer shall be started at the beginning of the 5-second vapor establishment period. The timer shall be operated until the sensor or system indicates that the flammable vapor limit has been reached. This time shall not exceed the time specified by the manufacturer, or 60 seconds, whichever is less.

This test shall be repeated at test conditions 1 through 5 specified in Table VII.