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FOREWORD

First published in 1976, ASHRAE Standard 35 was reaffirmed in 1983 and revised in 1992 and again in 2010. The 2010 version included a change to use the Karl Fischer coulometric titrator, a commonly used laboratory instrument, which simplified the test and provides more accurate results than the previous test method.

This is a reaffirmation of Standard 35-2014. This standard was prepared under the auspices of ASHRAE. It may be used, in whole or in part, by an association or government agency with due credit to ASHRAE. Adherence is strictly on a voluntary basis and merely in the interests of obtaining uniform guidelines throughout the industry. This version of the reaffirmation has no changes.

1. PURPOSE

This standard establishes a method of testing desiccants for use in refrigerant drying.

2. SCOPE

2.1 This standard provides a method of testing desiccants only. For testing and rating driers that use these desiccants, refer to ANSI/ASHRAE Standard 63.1, *Method of Testing Liquid Line Refrigerant Driers* (see Informative Appendix A—Bibliography).

2.2 The principle of this standard is to keep a desiccant of known water content in contact with the desired refrigerant until equilibrium has been established under known temperature conditions, after which the water content of the refrigerant is determined.

2.3 This standard is applicable to all desiccants that do not react with the desired refrigerant.

3. DEFINITIONS

For the purposes of this standard, the following terms and definitions apply.

desiccant: a solid that will collect and hold water and is insoluble in the refrigerant medium used.

equilibrium-point dryness (EPD): the water content of a liquid refrigerant after being in contact with a specific desiccant at a particular temperature long enough to reach an equilibrium state. Equilibrium-point dryness (EPD) is expressed as milligrams of water per kilogram of refrigerant (parts per million [ppm]).

water capacity: the amount of water collected and held by the desiccant while maintaining a specified EPD in the liquid refrigerant passing through it at a certain liquid-refrigerant temperature. Water capacity is measured in parts of water per 100 parts of desiccant by weight activated in accordance with the manufacturer's instructions.

4. CLASSIFICATION

4.1 This method of test is concerned with testing desiccants, specifically with determining the water capacity of a desiccant and the water concentration of a refrigerant when they are in equilibrium.

4.2 Since this standard is concerned only with equilibrium conditions at a given temperature, no consideration is given to the effect of the design of the container holding the desiccant.

Informative Note: In ASHRAE Standard 63.1, the method of testing discussed here, with certain modifications, is used to test the desiccant contained in a completed drier unit to determine its water capacity when in equilibrium with the refrigerant containing a given amount of water. (See Informative Appendix A—Bibliography.)

4.3 This method of testing desiccants uses liquid refrigerant in equilibrium with the desiccant.

4.4 The rate of drying is not considered in this standard. Measurements are made under conditions ensuring practical equilibrium.

4.5 Physical characteristics of the desiccant such as particle size, dusting properties, hardness, and the form of desiccant (i.e., molded or granular) are not considered in this standard.

5. APPARATUS

The following apparatus is required for the method of testing in this standard.

5.1 A constant-temperature bath or cabinet that is able to maintain a given temperature with an accuracy of ±1°C (±2°F) and is capable of being set at any temperature within the range of desiccant use. The equilibration vessel may be placed inside a constant-temperature cabinet.

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