BRITISH STANDARD

BS 3482-3: 1991

Methods of test for

Desiccants —

Part 3: Determination of pH

NOTE It is recommended that this Part be read in conjunction with BS 3482-1 *"Sampling, and preparation and storage of test samples"* which is issued separately.

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Chemicals Standards Policy Committee (CIC/-) to Technical Committee CIC/2, upon which the following bodies were represented:

Chemical Industries Association
Ministry of Defence
Royal Society of Chemistry
Society of British Aerospace Companies Limited
Society of Environmental Engineers

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Foreword

This Part of BS 3482 has been prepared under the direction of the Chemicals Standards Policy Committee. This revision of BS 3482 comprises Part 1, which describes procedures for sampling and preparation and storage of test samples and a number of Parts describing methods of test for desiccants. This revision supersedes BS 3482:1962 which is withdrawn. It differs from BS 3482:1962 in that individual methods have been published in separate Parts and have been generally updated. Some additional methods not included in BS 3482:1962 have also been incorporated.

This Part of BS 3482 also supersedes the methods given in Appendix B of BS 2541:1960 and Appendix B of BS 3523:1962 which are withdrawn.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 and 2, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 3482 describes a method for the determination of the pH value of desiccants.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Principle

Boiling water is added to a test portion and stirred. The solution is allowed to cool to ambient temperature and the pH value is measured.

3 Reagents

3.1 *General.* Use only reagents of recognized analytical grade and water complying with grade 3 of BS 3978.

3.2 *Three buffer solutions,* of pH values 4, 7 and 9, complying with BS 1647-2.

4 Apparatus

4.1 *Ordinary laboratory apparatus* and the following are required.

4.2 *pH meter,* with glass and calomel electrode assembly, complying with BS 2586 and BS 3145, capable of discriminating to within 0.05 unit of pH.

Calibrate the pH meter using the buffer solutions (**3.2**) which cover the pH range between 4 and 9. Clean the probe by thoroughly rinsing it in water before and after each test until the indicated pH value changes by no more than 0.05 unit in 5 min. Carry out the calibration prior to the first measurement and check periodically during the course of each test (e.g. after every 1 h to 2 h).

4.3 *Beaker,* tall-form, 250 mL capacity.

4.4 *Thermometer,* general purpose type, complying with BS 1704, capable of indicating 20 °C to an accuracy of ± 2 °C.

4.5 *Water bath,* capable of being maintained at 20 ± 2 °C (see **4.4**).

5 Procedure

5.1 Test portion

Weigh, to the nearest 1 g, 10 g of the laboratory sample into the beaker (**4.3**).

5.2 Preparation of the test solution

Add 100 mL of boiling water to the test portion (**5.1**) and stir. Place the beaker containing the test solution in the water bath (**4.5**) maintained at 20 ± 2 °C until the temperature of the test solution has reached 20 ± 2 °C as determined using the thermometer (**4.4**).

5.3 Determination

Determine the pH using the pH meter (**4.2**) operated in accordance with the manufacturer's instructions whilst gently stirring the test solution (**5.2**).

6 Expression of results

Record the pH value determined to the nearest 0.1 pH unit.

7 Test report

The test report shall include the following information.

a) A complete identification of the sample.

b) A reference to this British Standard method, i.e. BS 3482-3:1991.

c) The results expressed in accordance with clause **6**.

d) Any unusual features noted during the determination.

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Publication(s) referred to

BS 1647, *pH measurement.*

BS 1647-2, *Specification for reference value standard solutions and operational reference standard solutions.*

BS 1704, *Specification for solid-stem general purpose thermometers.*

BS 2586, *Specification for glass and reference electrodes for the measurement of pH.*

BS 3145, *Specification for laboratory pH meters.*

BS 3978, *Specification for water for laboratory use.*

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