

# Methods of test for Desiccants —

## Part 2: Determination of moisture content

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 This revision supersedes BS 3482:1962 which is withdrawn.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the methods given in Appendix A of BS 2540:1960, Appendix A of BS 2541:1960 and Appendix A of BS 3523:1962 which are withdrawn.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 moisture content of desiccants.

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

## 2 Principle

A test portion of known mass is dried in an oven under specified conditions and at a temperature specified in the desiccant product standard ( $T^{\circ}\text{C}$ ). The loss in mass is reported as a percentage loss from the original test portion.

## 3 Apparatus

**3.1 Ordinary laboratory apparatus**, and the following are required.

**3.2 Weighing bottle, made of glass**, squat form, about 60 mm in diameter, with ground glass lid.

**3.3 Oven, air circulating and ventilated**, capable of maintaining the temperature specified in the desiccant product standard within a tolerance of  $\pm 2.5^{\circ}\text{C}$ .

**3.4 Desiccator**, containing anhydrous phosphorus pentaoxide.

## 4 Procedure

### 4.1 Conditioning the weighing bottle

Place the weighing bottle and lid (**3.2**) in the oven (**3.3**) controlled at the specified temperature  $T^{\circ}\text{C}$  for 15 min. Remove the bottle, replace the lid to a loose fitting and allow to cool in the desiccator (**3.4**). Weigh the bottle and lid to the nearest 0.001 g. Repeat these operations until successive weighings differ by no more than 0.002 g.

### 4.2 Test portion

Weigh 20 g to 22 g of a laboratory sample (see clause 2 of BS 3482-1:1991) as quickly as possible into the weighing bottle (**3.2**). Close the lid securely. Record the total mass to the nearest 0.001 g.

## 4.3 Determination

### 4.3.1 Heating

Remove the ground glass lid from the bottle and immediately place the bottle, lid and test portion into the oven controlled at  $T^{\circ}\text{C}$ , under the conditions specified. Leave the loosely lidded bottle to cool to ambient temperature in the desiccator.

### 4.3.2 Reweighing

Reweigh the sealed bottle and test portion to the nearest 0.001 g and record the mass.

## 5 Calculation and expression of results

Calculate the moisture content, expressed as a percentage by mass, from the following expression:

$$\frac{(m_2 - m_3)}{(m_2 - m_1)} \times 100$$

where:

$m_1$  is the original mass of the empty bottle and lid (in g).

$m_2$  is the mass of the bottle, lid and test portion before heating (**4.2**) (in g).

$m_3$  is the mass of the bottle, lid and test portion after heating (**4.3.2**) (in g).

## 6 Test report

The test report shall include the following information.

- A complete identification of the sample.
- A reference to this British Standard method, i.e. BS 3482-2:1991.
- The results expressed in accordance with clause 5.
- The temperature at which drying was carried out.
- Any unusual features noted during the determination.



## Publication(s) referred to

BS 3482, *Methods of test for desiccants.*

BS 3482-1, *Sampling and preparation and storage of test samples.*

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