BRITISH STANDARD

BS 4267-11: 1994

Ammonium nitrate —

Part 11: Method for determination of inorganic matter and grit insoluble in water

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/37, upon which the following bodies were represented:

Association of Public Analysts
British Aggregate Construction Materials Industries
British Coal Corporation
Chemical Industries Association
Consumers' Association
Department of Trade and Industry (Laboratory of the Government Chemist)
Fertiliser Manufacturers' Association Ltd.
Horticultural Trades Association
Institute of Trading Standards Administration
Ministry of Agriculture, Fisheries and Food
Ministry of Defence

This British Standard, having been prepared under the direction of the Chemicals Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 February 1994

The following BSI references relate to the work on this standard:
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Contents

Foreword

This Part of BS 4267 has been prepared under the direction of the Chemicals Standards Policy Committee.

This British Standard calls for the use of substances and/or procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

WARNING. Ammonium nitrate is an oxidizing agent. If necessary, break up the test sample by crushing rather than grinding.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

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 4267 describes a gravimetric method for determination of inorganic water-insoluble matter and grit in ammonium nitrate for industrial use.

2 Normative references

This Part of BS 4267 incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this Part of BS 4267 only when incorporated in it by updating or revision.

3 Principle

A test portion is dissolved in water, filtered, dried and ashed at dull red heat. The resulting residue is weighed and the number of particles of grit retained on a 425 μm sieve counted.

4 Reagent

4.1 *Water,* conforming to grade 3 of BS 3978:1987.

5 Apparatus

5.1 *Ordinary laboratory apparatus*

5.2 *Test sieve,* of nominal aperture 425 μm, conforming to BS 410:1986.

5.3 *Ashless filter paper*

NOTE Whatman No. 42 has been found to be suitable.

5.4 *Porcelain crucible,* of capacity approximately 30 ml.

5.5 *Oven,* capable of being maintained at 103 °C ± 2 °C.

5.6 *Furnace,* capable of being maintained at 700 °C ± 25 °C.

5.7 *Desiccator,* containing an efficient desiccant.

5.8 *Camel hair brush*

6 Procedure

6.1 Preparation of the crucible

Heat the crucible (**5.4**) for 1 h in the furnace (**5.6**) at 700 °C ± 25 °C. Cool in the desiccator (**5.7**). After cooling, weigh to the nearest 0.001 g.

6.2 Test portion

Weigh, to the nearest 0.1 g, approximately 50 g of the test sample.

6.3 Determination

Place the test portion (**6.2**) into a 600 ml beaker and dissolve it in approximately 200 ml of hot water. Stir for 2 min to 3 min, allow any undissolved solids to settle, and decant the solution carefully through the filter paper (**5.3**). Repeat the operations of stirring, allowing to settle and decantation using a further 200 ml of hot water.

Transfer quantitatively the undissolved solids to the filter paper, wash with water and transfer the filter paper and its contents to the prepared crucible (**6.1**). Heat the crucible and its contents in the oven (**5.5**) at 103 °C ± 2 °C until the moisture is expelled. Transfer the crucible and its contents to the furnace and heat at 700 °C ± 25 °C for 30 min. Remove the crucible, cool in the desiccator (**5.7**) and weigh to the nearest 0.001 g.

Transfer the residue to the test sieve (**5.2**) using the brush (**5.8**) and brush lightly. Examine the residue and count any particles of grit retained on the sieve.

7 Calculation and expression of results

The inorganic water-insoluble matter, expressed as a percentage by mass, is given by the formula:

$$\frac{M_1 \times 100}{M_0}$$

where

M_0 is the mass of the test portion (in g);

M_1 is the mass of the final residue (in g).

Report the number of particles of grit, if any, retained on the test sieve.

8 Test report

The test report shall include the following information:

a) a complete identification of the sample;

b) a reference to this British Standard i.e. BS 4267-11:1994;

c) the results expressed in accordance with clause **7**;

d) any unusual features noted during the determination;

e) any operation not included in this Part of BS 4267 or regarded as optional.

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List of references (see clause 2)

Normative references

BSI publications
BRITISH STANDARDS INSTITUTION, London

BS 410:1986, *Specification for test sieves.*
BS 3978:1987, *Specification for water for laboratory use.*

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