BS 4651 : Part 3 : 1987
ISO 7109-1985
UDC 546.171.1-145.2 : 543.714

British Standard

Ammonia solution

Part 3. Method for determination of residue on evaporation

[ISO title: Ammonia solution for industrial use — Determination of residue after evaporation at 105 °C — Gravimetric method]

Ammoniaque
Partie 3. Méthode de détermination du résidu après évaporation

Ammoniaklösung
Teil 3. Verfahren zur Bestimmung des Verdampfungsrückstandes

National foreword

This Part of BS 4651 has been prepared under the direction of the Chemicals Standards Committee. It is identical with ISO 7109-1985 'Ammonia solution for industrial use — Determination of residue after evaporation at 105 °C — Gravimetric method', published by the International Organization for Standardization (ISO). This method supersedes part of clause **4** of BS 4651 : 1971, which has been revised by amendment.

It is intended to publish eight Parts of BS 4651 which collectively will supersede the 1971 edition.

Terminology and conventions. The text of the international standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

The symbol 'ml' has been used to denote millilitre. In British Standards it is current practice to use the symbol 'mL'.

Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Part of BS 4651'.

Cross-reference

International standard	Corresponding British Standard
ISO 758-1976	BS 4522 : 1970 Method for the determination of density of liquids at 20 °C (Technically equivalent)

This standard prescribes a method of test only and should not be used or quoted as a specification defining limits of purity. Reference to this Part should indicate that the method of test used complies with BS 4651 : Part 3 : 1987.

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

British Standards Institution

WARNING — Carry out all the operations in a well-ventilated fume cupboard.

1 Scope and field of application

This International Standard specifies a gravimetric method for the determination of the residue after evaporation of ammonia solution for industrial use.

The method is applicable to solutions containing not more than 35 % (*m*/*m*) of ammonia.

2 Reference

ISO 758, *Liquid chemical products for industrial use — Determination of density at* 20 °C.

3 Principle

Evaporation of a test portion in a tared platinum dish; weighing of the residue after drying at 105 ± 2 °C.

4 Apparatus

Ordinary laboratory apparatus and

4.1 Platinum dish, diameter about 75 mm.

4.2 Electric oven, capable of being maintained at 105 ± 2 °C.

5 Procedure

5.1 Test portion

Fill a 500 ml one-mark volumetric flask to the mark with some of the laboratory sample.

5.2 Determination

Weigh, to the nearest 0,000 1 g, the platinum dish (4.1) previously dried at 105 ± 2 °C and cooled in a desiccator. Pour some of the test portion (5.1) into the weighed platinum dish, and place on a bath of boiling water in a well-ventilated fume cupboard. Carefully evaporate the solution, gradually adding more of the test portion, until the test portion has evaporated to a volume of about 40 ml. Wash the volumetric flask with two 10 ml portions of distilled water and add the washings to the dish. Continue the operation until all liquid has completely evaporated.

Remove the dish from the water bath and place it in the electric oven (4.2) maintained at 105 ± 2 °C, for at least 30 min. Allow the dish containing the residue to cool in a desiccator and weigh to the nearest 0,000 1 g.

6 Expression of results

The residue after evaporation, expressed in milligrams per kilogram, is given by the formula

$$\frac{m_1 - m_0}{V\varrho} \times 10^6$$

where

m_0 is the mass, in grams, of the empty platinum dish;

m_1 is the mass, in grams, of the platinum dish and residue;

V is the volume, in millilitres, of the test portion (5.1);

ϱ is the density, in grams per millilitre, of the test sample, determined in accordance with the method specified in ISO 758.

7 Test report

The test report shall include the following particulars:

a) an identification of the sample;

b) the reference of the method used;

c) the results and the method of expression used;

d) any unusual features noted during the determination;

e) any operation not included in this International Standard or in the International Standard to which reference is made, or regarded as optional.