

Methods of

Sampling and test for glycerol —

**Part 22: Additional methods of test
(non-specification)**

NOTE It is recommended that this Part of BS 5711 be read in conjunction with the general information given in BS 5711-0 “*General introduction*”, issued separately.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, 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.

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Section 1. General

0 Introduction

BS 5711-1 to BS 5711-21 describe methods of sampling and test required to determine the compliance of a sample with the requirements specified for the five grades of glycerol set out in BS 2621, BS 2622, BS 2623, BS 2624 and BS 2625. There are, however, a number of test methods which, while not being required to determine compliance with the specification requirements, are widely used in relation to specialist applications of glycerol; for convenience these are gathered together as a single Part of this British Standard.

Reference should be made to Part 2 of this British Standard for the preparation of the laboratory sample.

1 Scope

This Part of BS 5711 describes procedures recommended for a number of tests for glycerol other than those required to determine compliance with the requirements of British Standard specifications for glycerol, BS 2621 to BS 2625.

2 References

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

Section 2. Crude glycerol

3 Determination of free caustic alkalinity

3.1 Reagents. The reagents used shall be of a recognized analytical grade. Distilled water complying with the requirements of BS 3978 or water of at least equal purity and free from carbon dioxide shall be used. (See Part 1 of this British Standard.)

3.1.1 Barium chloride, 100 g/l neutral solution.

3.1.2 Sulphuric acid, 0.2N standard volumetric solution.

3.1.3 Phenolphthalein indicator solution, prepared as described in BS 4123.

3.2 Apparatus

3.2.1 One-mark volumetric flask, 100 ml, complying with the requirements of BS 1792.

3.2.2 Pipette, 50 ml, complying with the requirements of BS 1583.

3.2.3 Burette, 50 ml, complying with the requirements of class A of BS 846.

3.3 Procedure. Weigh, to the nearest 0.01 g, about 20 g of the sample into the volumetric flask (3.2.1), add approximately 50 ml of carbon dioxide-free water followed by an excess of the barium chloride solution (3.1.1) dilute to the mark and mix. Allow the precipitate to settle. Transfer, by means of the pipette (3.2.2), 50 ml of the clear liquid to a 250 ml conical flask, add 2 drops of the phenolphthalein indicator solution (3.1.3) and titrate, using the burette (3.2.3), with the sulphuric acid solution (3.1.2).

3.4 Calculation. Calculate the free caustic alkalinity, expressed as milliequivalents per 100 g, from the formula

$$\frac{V}{m} \times 40$$

where

V is the volume of the acid used for the titration (ml)

m is the mass of the test portion (g).

4 Determination of total alkalinity

4.1 Reagents. The reagents used shall be of a recognized analytical grade. Distilled water complying with the requirements of BS 3978 or water of at least equal purity and free from carbon dioxide shall be used. (See Part 1 of this British Standard.)

4.1.1 Sulphuric acid, 0.2N standard volumetric solution.

4.1.2 Methyl orange indicator solution, prepared as described in BS 4123.

4.2 Apparatus

4.2.1 Burette, 50 ml, complying with the requirements of class A of BS 846.

4.3 Procedure. Dissolve the ash obtained by the procedure specified in Part 6 of this British Standard in 50 ml of hot water in a 250 ml conical flask, cool to room temperature, add 2 drops of the methyl orange indicator solution (4.1.2) and titrate with the sulphuric acid solution (4.1.1).

4.4 Calculation. Calculate the total alkalinity, expressed as milliequivalents per 100 g, from the formula

$$\frac{V}{m} \times 20$$

where

V is the volume of acid used for the titration (ml)

m is the mass of the test portion used for the determination of the ash (g).