

Analysis of formulated detergents —

Part 4: Physical test methods —

Section 4.1 Method for determination of clear point of liquid detergents

NOTE It is recommended that this Section be read in conjunction with the information in the “*General introduction*”, published separately as BS 3762-0.

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Foreword

This Section of BS 3762 has been prepared under the direction of the Chemicals Standards Committee and supersedes method 3 in Part 3 of BS 3762:1964, which is being deleted by amendment.

This standard describes a method of test only and should not be referred to as a specification defining limits of purity. Reference to the standard should indicate that the method of test used is in conformity with BS 3762-4.1.

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Summary of pages

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

Amendments issued since publication

Amd. No.	Date of issue	Comments

This British Standard, having been prepared under the direction of the Chemicals Standards Committee, was published under the authority of the Board of BSI and comes into effect on 28 February 1989

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The committees responsible for this British Standard are shown in Part 0.

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

Committee reference CIC/34
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1 Scope

This Section of BS 3762 describes a method for the determination of the clear point of liquid detergents. The method is not applicable to solutions that become cloudy on heating (for example solutions of ethylene oxide adducts) or to solutions that do not deposit solids other than ice on cooling to $-15\text{ }^{\circ}\text{C}$.

2 Principle

The sample is cooled until solids other than ice separate, and is then gradually warmed and stirred and the temperature at which a clear solution forms is noted.

3 Apparatus

Ordinary laboratory apparatus and the following are required.

3.1 Cooling bath, of minimum depth 150 mm and minimum diameter, or length of side, 100 mm, containing a suitable fluid, for example water with ice and ammonium chloride (for clear points above $-5\text{ }^{\circ}\text{C}$) or acetone with solid carbon dioxide (for clear points between $+5\text{ }^{\circ}\text{C}$ and $-15\text{ }^{\circ}\text{C}$).

3.2 Test tube, 150 mm \times 25 mm.

3.3 Thermometer, of range extending to $5\text{ }^{\circ}\text{C}$ (or more) above and below the expected clear point and graduated in $0.5\text{ }^{\circ}\text{C}$ or less.

4 Procedure

Place approximately 15 mL of the sample into the test tube (**3.2**) and immerse it in the cooling bath (**3.1**). Cool the sample, while stirring, until solid material other than ice separates.

NOTE It may be necessary to cool the sample to about $-15\text{ }^{\circ}\text{C}$ and to keep it at this temperature for a short time before any solid material separates.

After solid material has separated, introduce the thermometer (**3.3**), unless it is already in the sample. Heat the bath at such a rate that the temperature of the sample rises at not more than $0.5\text{ }^{\circ}\text{C}/\text{min}$, while stirring the sample. Note the temperature at which the sample clears and record this as the clear point.

5 Precision

The repeatability for most materials is $1\text{ }^{\circ}\text{C}$ or less.

6 Test report

The test report shall include the following information:

- a) a reference to this British Standard, i.e. BS 3762-4.1:1989;
- b) the result;
- c) a complete identification of the sample.

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