

Specification for
Liquid soap

Confirmed
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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/34, upon which the following bodies were represented:

Chemical Industries Association
 Chemical Industries Association (GOSIP)
 Consumer Policy Committee of BSI
 Department of Trade and Industry (Laboratory of the Government Chemist)
 Ministry of Defence
 Royal Society of Chemistry
 Soap and Detergent Industry Association
 Society of Dyers and Colourists

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Foreword

This revision of BS 4405 has been prepared under the direction of the Chemicals Standards Policy Committee. It supersedes the 1985 edition of BS 4405, which is withdrawn and from which it differs principally in that the references to test methods have been changed to take account of the partial revision of BS 1715:1963, and that the requirement for rosin acids content has been deleted. This British Standard is one of a series dealing with various kinds of soap. Other standards in the series are as follows:

BS 1545, *Specification for liquid toilet soap.*

BS 1911, *Specification for hard soap.*

BS 1912, *Specification for soap flakes.*

BS 1913, *Specification for soft soap.*

BS 1914, *Specification for toilet soap.*

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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 British Standard specifies requirements and gives corresponding test methods for liquid soap for domestic and industrial purposes.

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

2 Properties

2.1 Liquid soap shall consist essentially of an aqueous solution of potassium soaps, sodium soaps or both. It shall not contain non-aqueous solvents or synthetic detergents.

2.2 The content, of liquid soap shall be as given in Table 1 and **2.3**. Compliance shall be checked by the methods given in Table 1 and in accordance with **2.3** using analysis samples prepared as described in BS 1715-1.

2.3 Liquid soap shall not deposit sediment and shall show no gelling after being kept at 3 ± 1 °C for 24 h.

NOTE Liquid Soap will absorb carbon dioxide from the air and lose water by evaporation. These factors may affect, in particular the behaviour of the soap on chilling.

Table 1 — Properties and test methods

Property	Content	Test method
1. Total fatty matter content min.	10 % (m/m)	Described in BS 1715-2.1 and Appendix A of this standard
2. Total free alkali content (K ₂ O) max.	0.04	Described in BS 1715-2.2 and Appendix B of this standard
NOTE The fatty matter in liquid soap usually contains more than 20 % of fatty acids of relative molecular mass 200 or below.		

Appendix A Determination of total fatty matter content

Use the method described in BS 1715-2.1 except that the procedure for the test portion given in 8.1 of BS 1715-2.1:1989 should be replaced by the following.

Weigh, to the nearest 0.01 g, about 20 g of the laboratory sample into a stoppered weighing bottle.

In 8.2 of BS 1715-2.1:1989 the first two sentences should be replaced by the following.

Transfer the test portion (see 8.1 of BS 1715-2.1:1989) quantitatively to one of the separating funnels (see 6.2 of BS 1715-2.1:1989) using about 120 mL of water.

Appendix B Determination of total free alkali content

Use the method described in BS 1715-2.2 except that the procedure for the test portion given in 8.1 of BS 1715-2.2:1989 should be replaced by the following.

Weigh, to the nearest 0.1 g, about 10 g of the laboratory sample into the conical flask (see 6.1 of BS 1715-2.2:1989).

In 9.1 of BS 1715-2.2:1989, the calculation and formulae should be replaced by the following.

The total free alkali content, expressed as a percentage by mass of K_2O , is given by the formula:

$$0.047 \times \frac{V_0 T_0 - V_1 T_1}{m} \times 100$$

where

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

V_0 is the volume of the sulphuric acid solution (see 5.2 of BS 1715-2.2:1989) used in the determination (in mL);

V_1 is the volume of the potassium hydroxide solution (see 5.3 of BS 1715-2.2:1989) used in the titration (in mL);

T_0 is the exact amount-of-substance concentration of the sulphuric acid solution (see 5.2 of BS 1715-2.2:1989) (in mol/L);

T_1 is the exact amount-of-substance concentration of the potassium hydroxide solution (see 5.3 of BS 1715-2.2:1989) used in the titration (in mol/L).

Publication(s) referred to

BS 1545, *Specification for liquid toilet soap*¹⁾.

BS 1715, *Analysis of soaps*.

BS 1715-1, *General introduction, sampling, and test for presence of synthetic anionic-active surface active agents*.

BS 1715-2.1, *Method for determination of total alkali content and total fatty matter content*.

BS 1715-2.2, *Method for determination of total free alkali content*.

BS 1911, *Specification for hard soap*¹⁾.

BS 1912, *Specification for soap flakes*¹⁾.

BS 1913, *Specification for soft soap*¹⁾.

BS 1914, *Specification for toilet soap*¹⁾.

¹⁾ Referred to in the foreword only.

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