BRITISH STANDARD

BS 1715-2.6: 1989
ISO 672:1978

Analysis of soaps —

Part 2: Quantitative test methods —

Section 2.6 Method for determination of moisture and volatile matter content

[ISO title: Soaps — Determination of moisture and volatile matter content — Oven method]

UDC 661.18:543

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
Consumer Policy Committee of BSI
Department of the Environment
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

This British Standard, having been prepared under the direction of the Chemicals Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 31 July 1989

The following BSI references relate to the work on this standard:
Committee reference CIC/34
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Amendments issued since publication

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Contents

National foreword

This Section of BS 1715 has been prepared under the direction of the Chemicals Standards Policy Committee. It is identical with ISO 672:1978 "*Soaps — Determination of moisture and volatile matter content — Oven method*" published by the International Organization for Standardization (ISO).

This method supersedes the method "Determination of loss on drying at 100–105 °C" given in BS 1715:1963, which is deleted by amendment.

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.

Wherever the words "International Standard" appear, referring to this standard, they should be read as "Section of BS 1715".

Cross-references. There is no British Standard corresponding to ISO 4318 (see clauses **1** and **3**) but, as this reference is supplied only for information, the validity of this British Standard is not affected. Attention is drawn to BS 3762 "*Analysis of formulated detergents*", Section 3.25 "*Methods for determination of water and volatile matter content*"[1)].

The International Standard for sampling of soaps (see clause **3** and clause **6**) is not yet published. Relevant information is included in BS 1715 "*Analysis of soaps*", Part 1:1989 "*General introduction, sampling, and test for presence of synthetic anionic-active surface active agents*".

This Section describes a method of test only, and should not be used or quoted as a specification defining limits of purity. Reference to this Section should indicate that the method of test used is in accordance with BS 1715-2.6.

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.

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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)] In preparation.

1 Scope

This International Standard specifies an oven method for the determination of the moisture and volatile matter content of commercial soaps, excluding compounded products.

NOTE Attention is drawn to ISO 4318 which specifies an azeotropic distillation method for determination of water content.

2 Field of application

This method permits the determination of water and other substances present which are removed by heating at 103 ± 2 °C.

3 References

ISO 4318, *Surface active agents and soaps — Determination of water content — Azeotropic distillation method.*

ISO . . . , *Soaps — Sampling*[2)].

4 Principle

Oven-drying of a given mass of sample to constant mass.

5 Apparatus

Ordinary laboratory apparatus and in particular

5.1 *Evaporating dish* or *crystallizing dish*, of diameter 6 to 8 cm and depth 2 to 4 cm.

5.2 *Glass stirring rod*

5.3 *Sand*, washed and calcined, or *granulated pumice.*

5.4 *Oven*, capable of being controlled at 103 ± 2 °C.

5.5 *Desiccator,* containing an efficient desiccant, for example phosphorus(V) oxide (P_2O_5).

Calcium chloride is not satisfactory.

6 Sampling

The laboratory samples of soaps shall be prepared and stored according to the instructions given in ISO . . .

7 Procedure

7.1 Test portion

Weigh, to the nearest 0,01 g, about 10 g of the laboratory sample. (In the case of soap bars, cut it into small pieces.)

7.2 Determination

Place the stirring rod (**5.2**) in the dish (**5.1**) and, only if the analysis is to be carried out on soft soap or on soap liquefiable at 103 ± 2 °C, also place in the dish about 10 g of the sand or pumice (**5.3**). Dry the dish and stirring rod, with or without added sand or pumice as appropriate, in the oven (**5.4**), controlled at 103 ± 2 °C. Allow to cool in the desiccator (**5.5**) and weigh.

Add the test portion (**7.1**) to the dish and, if sand or pumice is used, mix this in by means of the stirring rod.

Place the dish in the oven, controlled at 103 ± 2 °C.

After 1 h, remove from the oven and when cool, reduce the material to a fine powder by means of the stirring rod.

Replace in the oven and after 1 h, remove the dish. Place in the desiccator and leave just long enough for it to cool completely to ambient temperature and then weigh. Repeat the operations of heating for periods of 1 h, cooling and weighing until the difference in mass between two successive weighings is less than 0,01 g.

Note the result of the final weighing.

8 Expression of results

8.1 Method of calculation

The moisture and volatile matter content is given, as a percentage by mass, by the formula

$$\frac{m_1 - m_2}{m_1 - m_0} \times 100$$

where

m_0 is the mass, in grams, of the dish, rod and, if used, the sand or pumice;

m_1 is the mass, in grams, of the dish, rod, sand or pumice (if used) and the test portion before heating;

m_2 is the mass, in grams, of the dish, rod, sand or pumice (if used) and the test portion after heating.

8.2 Reproducibility

The difference between the results obtained on the same sample in two different laboratories should not exceed 0,25 %.

[2)] In preparation.

9 Test report

The test report shall include the following particulars:

a) all information necessary for the complete identification of the sample;

b) the reference of the method used (reference to this International Standard);

c) the results and the method of expression used;

d) the test conditions;

e) any operational details not specified in this International Standard or regarded as optional, as well as any incidents likely to have affected the results.

Publications referred to

See national foreword.

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