INTERNATIONAL STANDARD 685

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Analysis of soaps — Determination of total alkali content and total fatty matter content

Analyse des savons — Détermination des teneurs en alcali total et en matière grasse totale

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 685 is the result of the combination of draft International Standards ISO/DIS 455 and ISO/DIS 685 drawn up by Technical Committee ISO/TC 91, *Surface active agents.*

Drafts ISO/DIS 455 and ISO/DIS 685 were circulated to the Member Bodies in November 1973 and December 1973 respectively.

ISO/DIS 455 has been approved by the Member Bodies of the following countries :

Australia	India	Spain
Austria	Iran	Switzerland
Belgium	Ireland	Thailand
Bulgaria	Japan	Turkey
Chile	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Netherlands	U.S.A.
France	New Zealand	U.S.S.R.
Germany	Poland	Yugoslavia
Hungary	South Africa, Rep. of	

No Member Body expressed disapproval of the document.

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Canada	Japan	Turkey
Chile	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Netherlands	U.S.A.
France	New Zealand	Yugoslavia
Germany	Romania	

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This International Standard cancels and replaces ISO Recommendations R 455-1965 and R 685-1968, of which it constitutes a technical revision.

Printed in Switzerland

Analysis of soaps — Determination of total alkali content and total fatty matter content

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the simultaneous determination of the total alkali[1] content and the total fatty matter content of soaps, excluding compounded products.

This method for the determination of total alkali is not applicable to coloured soaps if the colour interferes with the methyl orange end-point.

2 REFERENCES

ISO 684, *Analysis of soaps — Determination of total free alkali.*

ISO . . ., *Soaps — Sampling.*[2]

3 DEFINITIONS

For the purposes of this International Standard, the following definitions apply :

total alkali : The sum of the alkali bases combined as soap with fatty and rosin acids, as well as those corresponding to free alkali metal hydroxides or carbonates and to any silicates present which will be titrated under the test conditions.

The results are expressed as a percentage by mass of either sodium hydroxide (NaOH) or of potassium hydroxide (KOH), according to whether sodium or potassium soaps are concerned.

total fatty matter : The water-insoluble fatty material obtained by decomposing the soap with a mineral acid under the conditions specified. This term includes unsaponifiable matter, glycerides and any rosin acids contained in the soap, in addition to the fatty acids.

4 PRINCIPLE

Decomposition of the soap by a known volume of standard volumetric mineral acid solution, extraction and separation of the liberated fatty matter with light petroleum and determination of the total alkali content by titration of the excess of acid contained in the aqueous phase with a standard volumetric sodium hydroxide solution. After evaporation of the light petroleum from the extract, dissolution of the residue in ethanol and neutralization of the fatty acids with a standard volumetric potassium hydroxide solution. Evaporation of the ethanol and weighing of the soap formed to determine the total fatty matter content.

5 REAGENTS

During the analysis, use only reagents of recognized analytical reagent grade and only distilled water or water of equivalent purity.

5.1 Acetone.

5.2 Light petroleum, boiling range between 40 and 60 °C.

5.3 Ethanol, 95 % (*V*/*V*) solution, neutralized to the phenolphthalein solution (5.8).

5.4 Sulphuric acid or **hydrochloric acid,** approximately 1 N standard volumetric solution

5.5 Sodium hydroxide, approximately 1 N standard volumetric solution, standardized using the methyl orange solution (5.7) as indicator.

5.6 Potassium hydroxide, approximately 1 N standard volumetric solution in ethanol (5.3).

5.7 Methyl orange, 2 g/l solution.

5.8 Phenolphthalein, 10 g/l solution in ethanol (5.3).

6 APPARATUS

Ordinary laboratory apparatus and

6.1 Beaker, capacity 250 ml, squat form, complying with ISO 3819.

1) See also ISO 684.

2) In preparation.