INTERNATIONAL STANDARD

ISO 4325

Second edition
1990-04-15

Soaps and detergents — Determination of chelating agent content — Titrimetric method

Savons et détergents — Détermination de la teneur en agent séquestrant — Méthode titrimétrique

Reference number
ISO 4325:1990(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4325 was prepared by Technical Committee ISO/TC 91, *Surface active agents*.

This second edition cancels and replaces the first edition (ISO 4325:1977), of which it constitutes a minor technical revision.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Soaps and detergents — Determination of chelating agent content — Titrimetric method

1 Scope

This International Standard specifies a method of analysis for the determination of the chelating agent content of detergent compositions and soaps containing not more than 2 % (*m*/*m*) of chelating agent.

Ethylenediaminetetraacetic acid (EDTA) is one of the most widely used chelating agents and the method has been designed principally for determining this compound and its salts. Before determining other chelating agents, or determining ethylenediaminetetraacetic acid in the presence of other chelating agents, the applicability of the method should be confirmed.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements.*

ISO 607:1980, *Surface active agents and detergents — Methods of sample division.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

3 Principle

A test portion of the sample is dissolved in water, the pH of the solution adjusted to 4,65 and the solution titrated against standard copper(II) sulfate solution using 1-(2-pyridylazo)-2-naphthol as indicator.

4 Reagents

During the analysis use only reagents of recognized analytical grade and water of purity grade 3 as defined in ISO 3696.

4.1 Hydrochloric acid solution, $c(HCl) = 5$ mol/l.

4.2 Acetate buffer solution, pH = 4,65.

Mix equal volumes of acetic acid solution, $c(CH_3COOH) = 0{,}4$ mol/l, and sodium hydroxide solution, $c(NaOH) = 0{,}2$ mol/l.

4.3 PAN indicator, 0,1 % (*m*/*m*) solution of 1-(2-pyridylazo)-2-naphthol in ethanol.

Do not keep this solution longer than 7 days.

4.4 Copper(II) sulfate, standard volumetric solution, $c(CuSO_4) = 0{,}0100$ mol/l.

Weigh out, to the nearest 1 mg, 2,497 g of copper(II) sulfate pentahydrate ($CuSO_4.5H_2O$), of minimum purity 99,5 % (*m*/*m*) and dissolve in water. Quantitatively transfer the solution obtained to a 1 000 ml one-mark volumetric flask, dilute to the mark and mix.

5 Apparatus

Ordinary laboratory apparatus and

5.1 pH-meter, with electrodes and stirrer.

5.2 Burette, capacity 50 ml, complying with the requirements of class A of ISO 385-1.