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Surface active agents — Determination of alkalinity — Titrimetric method

Agents de surface — Détermination de l'alcalinité — Méthode titrimétrique

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FOREWORD

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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 4315 was drawn up by Technical Committee ISO/TC 91, *Surface active agents*, and was circulated to the member bodies in August 1975.

It has been approved by the member bodies of the following countries :

Australia	India	South Africa, Rep. of
Austria	Iran	Spain
Belgium	Italy	Switzerland
Brazil	Japan	Thailand
Canada	Netherlands	Turkey
Egypt, Arab Rep. of	New Zealand	United Kingdom
France	Poland	U.S.A.
Germany	Portugal	U.S.S.R.
Hungary	Romania	Yugoslavia

No member body expressed disapproval of the document.

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Surface active agents — Determination of alkalinity — Titrimetric method

0 INTRODUCTION

Solutions, pastes and powders of organic surface active substances, in particular those which contain hydrolysable products, can become weakly alkaline as a result of various breakdown reactions.

The method specified in this International Standard is based on the determination of the alkalis in the form of carbonates, bicarbonates, alkali hydroxides or free organic bases such as triethanolamine.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a titrimetric method for the determination of the alkalinity of surface active agents in general.

This method is applicable only if so indicated in the specific standard for each product; in particular it is not suitable for products containing soaps.

2 REFERENCE

ISO 607, *Surface active agents — Detergents — Methods of sample division.* [1]

3 PRINCIPLE

Titration of a clear solution of the surface active agent with a standard volumetric hydrochloric acid solution, in the presence of methyl orange or bromophenol blue as as indicator.

4 REAGENTS

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

4.1 Hydrochloric acid, 0,1 N standard volumetric solution.

4.2 Methyl orange or **bromophenol blue,** 1 g/l solution.

1) In preparation. (Revision of ISO/R 607.)

5 APPARATUS

Ordinary laboratory apparatus, and in particular :

5.1 Conical flask, capacity 250 ml, complying with the requirements of ISO 1773.

5.2 Burette, capacity 10 ml, complying with the requirements of class A of ISO 385.

6 SAMPLING

The laboratory sample of the surface active agent shall be prepared and stored according to the instructions given in ISO 607.

7 PROCEDURE

7.1 Test portion

Weigh, to the nearest 0,001 g, about 5 g of the laboratory sample into the conical flask (5.1).

7.2 Determination

Add 50 ml of water to the test portion (7.1) and dissolve or homogenize if necessary. Then add 2 drops of the indicator solution (4.2) and titrate with the hydrochloric acid solution (4.1) until the end-point is reached.

NOTE — To facilitate the colour comparison, prepare by the same procedure a solution of about 5 g of the laboratory sample in 50 ml of water and add 2 drops of the indicator solution (4.2).

8 EXPRESSION OF RESULTS

The alkalinity of the product, expressed as a percentage by mass of sodium oxide (Na_2O), is given by the formula

$$\frac{V \times T \times 3{,}1}{m}$$

where

V is the volume, in millilitres, of the standard volumetric hydrochloric acid solution (4.1) used;

T is the exact normality of the standard volumetric hydrochloric acid solution (4.1) used;

m is the mass, in grams, of the test portion.