
INTERNATIONAL STANDARD



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Surface active agents — Detergents — Anionic-active matter stable to acid hydrolysis — Determination of trace amounts

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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 2868 was drawn up by Technical Committee ISO/TC 91, *Surface active agents*, and circulated to the Member Bodies in August 1972.

It has been approved by the Member Bodies of the following countries :

Austria	Ireland	Spain
Belgium	Japan	Switzerland
Egypt, Arab Rep. of	Mexico	Thailand
France	New Zealand	Turkey
Germany	Poland	United Kingdom
Hungary	Romania	U.S.A.
India	South Africa, Rep. of	U.S.S.R.

This International Standard has also been approved by the International Union of Pure and Applied Chemistry (IUPAC).

No Member Body expressed disapproval of the document.

Surface active agents – Detergents – Anionic-active matter stable to acid hydrolysis – Determination of trace amounts

1 SCOPE

This International Standard specifies a method for the determination of small quantities of stable anionic-active matter present in detergents, in the presence of a large excess of hydrolyzable anionic-active matter which will hydrolyze under conditions of acid reflux.

2 FIELD OF APPLICATION

This method is applicable to the determination of cyclic sulphonates in alkylphenol ether sulphates and of small amounts of sulphonates in sulphated fatty alcohols.

The molar mass of the anionic-active matter must be known or previously determined, if its content is expressed as a percentage by mass.

3 REFERENCE

ISO 2271, *Surface active agents – Detergents – Determination of anionic-active matter (direct two-phase titration procedure)*.

4 PRINCIPLE

Hydrolysis, by refluxing under acid conditions, of anionic-active matter.

Determination of non-hydrolyzable anionic-active matter by the direct two-phase titration procedure described in ISO 2271.

5 REAGENTS

The water used shall be distilled water or water of at least equivalent purity.

In addition to the reagents mentioned in ISO 2271 and given below as a reminder :

5.1 Chloroform, ρ_{20} 1,48 g/ml, distilling between 59,5 and 61,5 °C.

5.2 Sulphuric acid, 5 N solution.

5.3 Sulphuric acid, 1,0 N solution.

5.4 Sodium hydroxide, 1,0 N standard volumetric solution.

5.5 Sodium lauryl sulphate, 0,004 M standard volumetric solution.

5.6 Benzethonium chloride, 0,004 M standard volumetric solution.

5.7 Phenolphthalein solution.

5.8 Mixed indicator solution.

The following reagents are necessary :

5.9 Sulphuric acid, 2 N solution.

5.10 Sodium hydroxide, 10 N solution.

5.11 Sodium hydroxide, 1 N solution.

6 APPARATUS

Ordinary laboratory apparatus, and

6.1 Conical flask, 250 ml, with a conical ground glass joint.

6.2 Reflux condenser, water-cooled, with a conical ground glass joint at the bottom.

7 PROCEDURE

7.1 Test portion

Weigh, to the nearest 1 mg, a quantity of sample containing between 0,5 and 2 g of anionic-active matter to be subjected to hydrolysis, into the conical flask (6.1).

7.2 Determination

Add to the test portion, by means of a pipette, 25 ml of the sulphuric acid solution (5.9) and a few anti-bumping granules.

Attach the water-cooled reflux condenser (6.2), well washed with water, to the conical flask and reflux for 3 h.