INTERNATIONAL STANDARD 1843/II

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Higher alcohols for industrial use — Methods of test — Part II : Determination of acidity to phenolphthalein — Titrimetric method

Alcools supérieurs à usage industriel — Méthodes d'essai —
Partie II : Détermination de l'acidité à la phénolphtaléine — Méthode titrimétrique

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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.

Prior to 1972, the results of the work of the technical committees were published as ISO Recommendations; these documents are in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 47, *Chemistry,* has reviewed ISO Recommendation R 1846-1970 and found it technically suitable for transformation. Number 1846, however, has been changed to 1843/II. International Standard ISO 1843 therefore replaces ISO Recommendation R 1846-1970, to which it is technically identical.

ISO Recommendation R 1846 had been approved by the member bodies of the following countries :

Australia	Hungary	Portugal
Austria	India	Romania
Belgium	Iran	South Africa, Rep. of
Brazil	Israel	Spain
Czechoslovakia	Italy	Switzerland
Egypt, Arab Rep. of	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany	Peru	U.S.S.R.
Greece	Poland	

No member body had expressed disapproval of the Recommendation.

The member body of the following country disapproved the transformation of the Recommendation into an International Standard :

Netherlands

Printed in Switzerland

Higher alcohols for industrial use — Methods of test — Part II : Determination of acidity to phenolphthalein — Titrimetric method

1 SCOPE AND FIELD OF APPLICATION

This part of ISO 1843 specifies a titrimetric method for the determination of the acidity to phenolphthalein of C_6 to C_{13} alcohols for industrial use.

This document should be read in conjunction with part I (see the annex).

2 PRINCIPLE

Titration of the acidity in a test portion with standard volumetric sodium hydroxide solution, in ethanolic medium, using phenolphthalein as indicator.

3 REAGENTS

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

3.1 Ethanol, 95 % (*V/V*).

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

3.3 Phenolphthalein, 5 g/l ethanolic solution.

Dissolve 0,5 g of phenolphthalein in 100 ml of the ethanol (3.1) and make faintly pink by the addition of dilute sodium hydroxide solution.

4 APPARATUS

Ordinary laboratory apparatus and

4.1 Microburette, of capacity 10 ml, graduated in 0,02 ml divisions.

5 PROCEDURE

5.1 Test portion

Take 100 ml of the laboratory sample by means of a pipette.

5.2 Determination

Introduce 100 ml of the ethanol (3.1) into a 500 ml conical flask, add 1 ml of the phenolphthalein solution (3.3) and make faintly pink by addition of the sodium hydroxide solution (3.2). Add the test portion (5.1) to the flask and titrate the mixture with the sodium hydroxide solution from the microburette (4.1), until the pink colour persists for 5 s.

6 EXPRESSION OF RESULTS

The acidity to phenolphthalein, expressed in milliequivalents per kilogram, is given by the formula

$$\frac{V}{\rho}$$

where

V is the volume, in millilitres, of the sodium hydroxide solution (3.2) used for the titration;

ρ is the density, in grams per millilitre, of the laboratory sample at 20 °C (see clause 5 of part I).

Alternatively, the acidity to phenolphthalein, expressed in terms of the acid value*, is given by the formula

$$\frac{0{,}056\ 1\ V}{\rho}$$

NOTE — If the concentration of the standard volumetric solution used is not exactly as specified in the list of reagents, an appropriate correction should be made.

* **acid value** : The number of milligrams of potassium hydroxide required to neutralize the acidity of 1 g of the sample.