

ISO

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

*pour l'acide par
ISO 1846:1970*

ISO RECOMMENDATION R 1846

HIGHER ALCOHOLS FOR INDUSTRIAL USE

DETERMINATION OF ACIDITY TO PHENOLPHTHALEIN

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1846, *Higher alcohols for industrial use -- Determination of acidity to phenolphthalein*, was drawn up by Technical Committee ISO/TC 47, *Chemistry*, the Secretariat of which is held by the Ente Nazionale Italiano di Unificazione (UNI).

Work on this question led to the adoption of Draft ISO Recommendation No. 1846, which was circulated to all the ISO Member Bodies for enquiry in April 1969. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

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

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

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HIGHER ALCOHOLS FOR INDUSTRIAL USE

DETERMINATION OF ACIDITY TO PHENOLPHTHALEIN

1. SCOPE

This ISO Recommendation describes a volumetric method for the determination of acidity to phenolphthalein of C_6 to C_{13} alcohols for industrial use.

2. PRINCIPLE

Titration with sodium hydroxide solution, in ethanolic solution using phenolphthalein as indicator.

3. REAGENTS

Distilled water or water of equivalent purity should be used in the test.

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 95 % (V/V) ethanol, and make faintly pink by the addition of dilute sodium hydroxide solution.

4. APPARATUS

Ordinary laboratory apparatus and

4.1 *Microburette*, capacity 10 ml, graduated in 0.02 ml divisions.

5. SAMPLING

Follow the principles given in ISO Recommendation R . . .*.

Place the sample in a clean, dry, glass-stoppered bottle of such a size that it is nearly filled up. If it is necessary to seal this bottle, care should be taken to avoid the risk of contamination.

6. PROCEDURE

6.1 Test portion

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

6.2 Determination

Introduce 100 ml of 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 (6.1) to the flask and titrate the mixture with the sodium hydroxide solution (3.2) until the pink colour persists for 5 seconds.

7. EXPRESSION OF RESULTS

7.1 Acidity to phenolphthalein, expressed in milliequivalents per kilogramme, is given by the following formula :

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

where

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

ρ is the density, in grammes per millilitre, of the laboratory sample at 20 °C.

7.2 Alternatively, acidity to phenolphthalein may be expressed in terms of acid value by the following formula (see Note) :

$$\frac{0.0561 \times V}{\rho}$$

NOTE. — The *acid value* is the number of milligrammes of potassium hydroxide required to neutralize the acidity of 1 g of the sample.

* Sampling from the consignment of a chemical product will be the subject of a future ISO Recommendation.