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**INTERNATIONAL STANDARD**



**1843 / V**

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION - МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ - ORGANISATION INTERNATIONALE DE NORMALISATION

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**Higher alcohols for industrial use — Methods of test —  
Part V : Determination of total alcohols content —  
Titrimetric method**

*Alcools supérieurs à usage industriel — Méthodes d'essai —  
Partie V : Détermination de la teneur totale en alcools — Méthode titrimétrique*

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**Descriptors** : alcohols, chemical analysis, determination, colouring, colorimetric analysis, visual inspection.

## 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 1850-1970 and found it technically suitable for transformation. Number 1850, however, has been changed to 1843/V. International Standard ISO 1843/V therefore replaces ISO Recommendation R 1850-1970, to which it is technically identical.

ISO Recommendation R 1850 had been approved by the member bodies of the following countries :

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

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

# Higher alcohols for industrial use — Methods of test — Part V : Determination of total alcohols content — Titrimetric method

## 1 SCOPE AND FIELD OF APPLICATION

This part of ISO 1843 specifies a titrimetric method for the determination of the total alcohols content of C<sub>6</sub> to C<sub>13</sub> alcohols for industrial use.

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

## 2 PRINCIPLE

Esterification of alcohols present in a test portion by means of acetic anhydride, and titration of the excess acetic anhydride with a standard volumetric ethanolic potassium hydroxide solution, in the presence of 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 Methanol, 95 % (V/V).

### 3.2 Acetic anhydride/pyridine mixture.

**WARNING** — Because of the toxicity and unpleasant odour of pyridine, it is recommended that it should be handled with care and in a well-ventilated fume cupboard.

Mix 60 g of acetic anhydride [(CH<sub>3</sub>CO)<sub>2</sub>O] and 440 g of pyridine (C<sub>5</sub>H<sub>5</sub>N) and store the mixture in an airtight container of dark-coloured glass.

### 3.3 Potassium hydroxide, 0,2 N standard volumetric ethanolic solution.

Wash some solid potassium hydroxide rapidly with the methanol (3.1) to remove any potassium carbonate adhering to the surface and prepare an 11,2 g/l solution in 95 % (V/V) ethanol. Standardize this solution against 0,1 N standard volumetric sulphuric acid solution, using the phenolphthalein solution (3.4) as indicator.

### 3.4 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 Flat-bottomed flasks, of capacity 100 ml, with ground glass stoppers.

### 4.2 Glass tubes, at least 1,5 m long, fitted with ground glass joints for connecting to the flasks (4.1).

### 4.3 Microburette, of capacity 20 ml, graduated in 0,02 ml divisions.

## 5 PROCEDURE

### 5.1 Preparation of apparatus

Wash the apparatus after each use, by the method specified below; wear rubber gloves during the washing operations.

#### 5.1.1 Flasks

Wipe the joints with cellulose paper; rinse with water; wash with petroleum spirit in a bath; rinse with hot water, then with the methanol (3.1) and dry in a heated cabinet.

#### 5.1.2 Glass tubes

Wipe the joints with cellulose paper; rinse with the methanol (3.1), allow to drain and dry in a current of air dried over silica gel.