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International Standard



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**Propan-2-ol for industrial use — Methods of test —  
Part 2 : Determination of acidity — Titrimetric method**

*Propanol-2 à usage industriel — Méthodes d'essai — Partie 2 : Détermination de l'acidité — 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.

International Standard ISO 756/2 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in October 1980.

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

Australia	Germany, F. R.	Poland
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China	Italy	Switzerland
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No member body expressed disapproval of the document.

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

International Standards ISO 756/1, ISO 756/2 and ISO 756/3 cancel and replace ISO Recommendation R 756-1968 of which they constitute a technical revision.

# Propan-2-ol for industrial use — Methods of test — Part 2 : Determination of acidity — Titrimetric method

## 1 Scope and field of application

This part of ISO 756 specifies a titrimetric method for the determination of the acidity of propan-2-ol for industrial use.

The method is applicable to products having an acidity, expressed as acetic acid (CH<sub>3</sub>COOH), equal to or greater than 0,000 6 % (*m/m*).

This document should be read in conjunction with ISO 756/1 (see the annex).

## 2 Principle

Dilution of a test portion with carbon dioxide-free water. Titration of the acidity with standard volumetric sodium hydroxide solution, in the presence of phenolphthalein as indicator.

## 3 Reagents

During the analysis, use only reagents of recognized analytical grade and distilled water or water of equivalent purity, carbon dioxide-free, recently prepared.

### 3.1 Water, carbon dioxide-free.

Boil distilled water and allow it to cool in a flask fitted with a stopper carrying a soda-lime guard-tube.

### 3.2 Sodium hydroxide, standard volumetric solution, $c(\text{NaOH}) = 0,1 \text{ mol/l}$ .

### 3.3 Phenolphthalein, 5 g/l ethanolic solution.

Dissolve 0,5 g of phenolphthalein in 100 ml of 95 % (*V/V*) ethanol, and add the sodium hydroxide solution (3.2) until a pale pink coloration is obtained.

## 4 Apparatus

Ordinary laboratory apparatus and

### 4.1 Conical flask, made of borosilicate glass, of capacity 500 ml, fitted with a ground glass stopper carrying a soda-lime guard-tube.

### 4.2 Burette, of capacity 10 ml, graduated in 0,02 ml.

## 5 Procedure

### 5.1 Test portion

Take  $100 \pm 0,1$  ml of the laboratory sample at a temperature of about 20 °C.

### 5.2 Determination

Place 100 ml of the water (3.1) in the conical flask (4.1), add 0,5 ml of the phenolphthalein solution (3.3) and restore the pale pink coloration by the addition of 1 drop of the sodium hydroxide solution (3.2). Add the test portion (5.1), and a further 0,5 ml of the phenolphthalein solution. Titrate the test solution with the sodium hydroxide solution (3.2), stoppering the flask and swirling its contents after each addition, until a pale pink coloration, persisting for about 15 s, is obtained. Shake the contents of the flask, with the stopper in position, after each addition of sodium hydroxide solution.

## 6 Expression of results

The acidity, expressed as a percentage by mass of acetic acid (CH<sub>3</sub>COOH), is given by the formula

$$\frac{0,006 V}{\rho}$$

where

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

$\rho$  is the density, in grams per millilitre, of the sample at 20 °C (see ISO 756/1, clause 4);

0,006 is the mass, in grams, of acetic acid corresponding to 1 ml of sodium hydroxide solution,  $c(\text{NaOH}) = 0,100 \text{ mol/l}$ .

NOTE — If the standard volumetric solution used does not have the exact concentration specified in the list of reagents, an appropriate correction should be applied.

Report the result to two significant figures.

## Annex

### ISO publications relating to propan-2-ol for industrial use

ISO 756/1 — General.

ISO 756/2 — Determination of acidity — Titrimetric method.

ISO 756/3 — Test for miscibility with water.

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