# International Standard 755/2



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# Butan-1-ol for industrial use — Methods of test — Part 2 : Determination of acidity — Titrimetric method

*Butanol-1 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 755/2 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in February 1980.

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

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|---|---|---|
| Australia | France | Philippines |
| Austria | Germany, F. R. | Poland |
| Belgium | Hungary | Romania |
| Brazil | India | South Africa, Rep. of |
| Bulgaria | Italy | Switzerland |
| China | Korea, Rep. of | Thailand |
| Czechoslovakia | Mexico | United Kingdom |
| Egypt, Arab Rep. of | Netherlands | USSR |

No member body expressed disapproval of the document.

International Standards ISO 755/1, ISO 755/2 and ISO 755/3 cancel and replace ISO Recommendation R 755-1968, of which they constitute a technical revision.

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



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# Butan-1-ol for industrial use — Methods of test — Part 2 : Determination of acidity — Titrimetric method

## 1 Scope and field of application

This part of ISO 755 specifies a titrimetric method for the determination of the acidity of butan-1-ol for industrial use.

This document should be read in conjunction with ISO 755/1 (see the annex).

## 2 Principle

Titration of the acidity of a test portion with a standard volumetric sodium hydroxide solution, 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 Sodium hydroxide,** standard volumetric solution, $c$(NaOH) = 0,1 mol/l.

**3.2 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 the sodium hydroxide solution (3.1).

## 4 Apparatus

Ordinary laboratory apparatus and

**4.1 Conical flask,** of capacity 250 ml, of borosilicate glass, fitted with a ground glass stopper.

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

## 5 Procedure

### 5.1 Test portion

Weigh, in the conical flask (4.1), 100 ± 0,1 g of the laboratory sample.

### 5.2 Determination

Add 0,5 ml of the phenolphthalein solution (3.2) to the flask containing the test portion (5.1) and titrate with the sodium hydroxide solution (3.1) until the pink colour remains for 15 s. 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 butyric acid ($C_3H_7COOH$), is given by the formula

$$0{,}008\,8 \times V \times \frac{100}{m}$$

$$= \frac{0{,}88 \times V}{m}$$

where

$V$ is the volume, in millilitres, of the sodium hydroxide solution (3.1) used for the determination;

$m$ is the mass, in grams, of the test portion (5.1);

0,008 8 is the mass, in grams, of butyric acid corresponding to 1 ml of sodium hydroxide solution, $c$(NaOH) = 0,100 mol/l.

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

# Annex

## ISO publications relating to butan-1-ol for industrial use

ISO 755/1 — General.

ISO 755/2 — Determination of acidity — Titrimetric method.

ISO 755/3 — Sulphuric acid colour test.

ISO 761 — Determination of bromide index.[1)]

1) Also applicable to acetic anhydride for industrial use.