

International Standard**1388/11**

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

**Ethanol for industrial use — Methods of test —
Part 11 : Test for detection of furfural***Éthanol à usage industriel — Méthodes d'essai — Partie 11 : Essai de détection du furfural***First edition — 1981-12-01**

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 1388/11 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 :

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

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 1388/1 to ISO 1388/12 cancel and replace ISO Recommendation R 1388-1970, of which they constitute a technical revision.

Ethanol for industrial use — Methods of test — Part 11 : Test for detection of furfural

1 Scope and field of application

This part of ISO 1388 specifies a test for checking whether or not furfural is present in ethanol for industrial use.

This document should be read in conjunction with ISO 1388/1 (see the annex).

2 Principle

Treatment of a test portion with aniline and acetic acid, the presence of furfural leading to the formation of a characteristic red colour.

3 Reagents

During the test, use only reagents of recognized analytical grade.

3.1 Aniline ($C_6H_5NH_2$), distilled immediately before use.

3.2 Glacial acetic acid, ρ 1,05 g/ml.

4 Apparatus

Ordinary laboratory apparatus.

5 Procedure

5.1 Test portion

Take 10 ml of the laboratory sample or a different volume agreed between the interested parties.

5.2 Test

Place the test portion (5.1) in a test tube, add 0,5 ml of the aniline (3.1) and 1 ml of the acetic acid (3.2). Mix and observe whether or not a red colour develops immediately or within 3 min of carrying out the test.

6 Expression of results

Depending on whether or not a red colour is formed in the test (5.2), report, respectively, the presence or absence of furfural.

Annex

ISO Publications relating to ethanol for industrial use

ISO 1388/1 — General.

ISO 1388/2 — Detection of alkalinity or determination of acidity to phenolphthalein.

ISO 1388/3 — Estimation of content of carbonyl compounds present in small amounts — Photometric method.

ISO 1388/4 — Estimation of content of carbonyl compounds present in moderate amounts — Titrimetric method.

ISO 1388/5 — Determination of aldehydes content — Visual colorimetric method.

ISO 1388/6 — Test for miscibility with water.

ISO 1388/7 — Determination of methanol content [methanol contents between 0,01 and 0,20 % (V/V)] — Photometric method.

ISO 1388/8 — Determination of methanol content [methanol contents between 0,10 and 1,50 % (V/V)] — Visual colorimetric method.

ISO 1388/9 — Determination of esters content — Titrimetric method after saponification.

ISO 1388/10 — Estimation of hydrocarbons content — Distillation method.

ISO 1388/11 — Test for detection of furfural.

ISO 1388/12 — Determination of permanganate time.