
INTERNATIONAL STANDARD



2511

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

Furfural for industrial use — List of methods of test

Furfural à usage industriel — Liste des méthodes d'essais

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Descriptors : aldehydes, furfurals, tests, nomenclature.

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 2511 was drawn up by Technical Committee ISO/TC 47, *Chemistry*, and circulated to the Member Bodies in September 1971.

It has been approved by the Member Bodies of the following countries :

| | | |
|---------------------|-------------|-----------------------|
| Austria | India | South Africa, Rep. of |
| Belgium | Ireland | Spain |
| Egypt, Arab Rep. of | Israel | Switzerland |
| France | Netherlands | United Kingdom |
| Germany | Poland | U.S.S.R. |
| Hungary | Romania | |

No Member Body expressed disapproval of the document.

Furfural for industrial use – List of methods of test

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies methods of test for furfural ($\text{OCH} = \text{CHCH} = \text{CCHO}$) for industrial use.

2 REFERENCES

ISO/R 758, *Method for the determination of density of liquids at 20 °C.*

ISO/R 760, *Determination of water by the Karl Fischer method.*

ISO/R 918, *Test method for distillation (distillation yield and distillation range).*

ISO 2512, *Furfural for industrial use – Determination of total carbonyl compounds – Volumetric method.*

ISO 2888, *Furfural for industrial use – Determination of acidity to phenolphthalein – Volumetric method.*

3 SAMPLING

Follow the principles given in ISO . . . ¹⁾. Attention is drawn to the following recommendation: place the laboratory sample, representative of the material taken from the bulk, in a clean, dry, dark coloured, glass-stoppered bottle of such a size that it is nearly filled by the sample.

If it is necessary to seal this bottle, care shall be taken to avoid the risk of contamination.

NOTE – Furfural decomposes rapidly in the presence of oxygen and light. Delays between sampling and analysis, especially for acidity, should therefore be minimized.

4 DETERMINATION OF DISTILLATION CHARACTERISTICS

Use the method specified in ISO/R 918, subject to the following modifications appropriate for furfural.

4.1 Thermometer (See 3.2 in ISO/R 918)

Use a thermometer conforming to the requirements of ISO/R 918, with a scale including the range 125 to 175 °C or any other suitable range.

4.2 Distillation (See 6.1 in ISO/R 918)

The interval before the first drop of distillate falls from the end of the condenser shall be 10 to 15 min.

4.3 Correction to be applied to the temperatures (See 7.2 in ISO/R 918)

This correction is equal to

$$0,05 (760 - p_1) \text{ °C}$$

or $0,04 (1\,013 - p_2) \text{ °C}$

where

p_1 is the barometric pressure in millimetres of mercury;

p_2 is the barometric pressure in kilopascals²⁾.

1) In preparation.

2) 1 kPa = 1 kN/m².

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5 DETERMINATION OF DENSITY AT 20 °C

Use the method specified in ISO/R 758.

6 DETERMINATION OF WATER CONTENT

Use the ketone modification of any of the methods specified in ISO/R 760, and dimethylformamide as solvent.

7 DETERMINATION OF TOTAL CARBONYL COMPOUNDS

Use the method specified in ISO 2512.

8 ACIDITY TO PHENOLPHTHALEIN

Use the method specified in ISO 2888.

9 TEST REPORT

The test report shall include the following particulars in relation to each test :

- a) the reference of the method used;
- b) the results and the method of expression used;
- c) any unusual features noted during the determination;
- d) any operation not included in this International Standard or the documents to which reference is made, or regarded as optional.

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