
INTERNATIONAL STANDARD



2753

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**Urea for industrial use — Determination of water content —
Karl Fischer method**

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Descriptors : urea, determination of content, moisture content, Karl Fischer reagent.

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 2753 was drawn up by Technical Committee ISO/TC 47, *Chemistry*, and circulated to the Member Bodies in June 1972.

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

Austria
Belgium
Bulgaria
France
Germany
Hungary
India
Ireland

Israel
Italy
Netherlands
New Zealand
Poland
Portugal
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South Africa, Rep. of

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Sweden
Switzerland

Thailand

Turkey

United Kingdom

U.S.S.R.

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

No Member Body expressed disapproval of the document.

Urea for industrial use – Determination of water content – Karl Fischer method

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the manner in which the Karl Fischer method for the determination of water content is to be applied to urea for industrial use.

2 REFERENCE

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

3 PRINCIPLE

Reaction of water with a solution of iodine and sulphur dioxide in a mixture of pyridine and methanol (Karl Fischer reagent). This reagent is first standardized by titration with a precisely known mass of water. The end point of the reaction is read by the direct method (visual or electrometric).

4 REAGENTS

See section 4 of ISO/R 760.

5 APPARATUS

See clause 5.1 of ISO/R 760.

6 PROCEDURE

6.1 Test portion

Depending on the presumed water content, take a test portion, weighed to the nearest 0,01 g, which will lead to a

consumption of Karl Fischer reagent not exceeding 20 ml, and, in any case, weighing not more than 10 g.

6.2 Standardization of the Karl Fischer reagent

See clause 6.2.1 (visual titration) or 7.2.1 (direct electrometric titration) of ISO/R 760.

6.3 Determination

See clause 6.2.2 (visual titration) or 7.2.2 (direct electrometric titration) of ISO/R 760. Use 75 ml of the pure methanol (4.1) for the preparation of the test solution.

7 EXPRESSION OF RESULTS

In accordance with clause 6.3 (visual titration) or 7.3 (direct electrometric titration) of ISO/R 760.

8 TEST REPORT

The test report shall include the following particulars :

- the reference of the method used;
- the results and the method of expression used;
- any unusual features noted during the determination;
- any operation not included in this International Standard or ISO/R 760 or regarded as optional.

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