International Standard 753/8

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Acetic acid for industrial use — Methods of test — Part 8 : Visual limit test for inorganic chlorides

Acide acétique à usage industriel — Méthodes d'essai — Partie 8 : Essai visuel limite de contrôle des chlorures minéraux

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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 753/8 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in March 1980.

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

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

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 753/1 to ISO 753/11 cancel and replace ISO Recommendation R 753-1968, of which they constitute a technical revision.

Acetic acid for industrial use — Methods of test — Part 8 : Visual limit test for inorganic chlorides

1 Scope and field of application

This part of ISO 753 specifies a visual limit test for inorganic chlorides in acetic acid for industrial use.

Using a test portion of 50 g, the method is applicable directly to products having inorganic chloride contents, expressed as Cl^-, in the range 0,000 5 to 0,05 % (m/m), but this range can be extended by adjusting the mass of the test portion (see 5.1).

This document should be read in conjunction with ISO 753/1 (see the annex).

2 Principle

Visual comparison of the turbidity obtained by adding a silver nitrate solution to a solution of a test portion acidified with nitric acid, with that similarly obtained from a chloride solution of known concentration.

3 Reagents

During the test, use only reagents of recognized analytical grade and only distilled water or water of equivalent purity.

3.1 Nitric acid, 315 g/l solution.

3.2 Silver nitrate, 50 g/l solution.

3.3 Chloride, standard solution corresponding to 0,1 g of Cl^- per litre.

Transfer 28,2 ml of a standard volumetric hydrochloric acid solution, $c(HCl)$ = 0,1 mol/l, to a 1 000 ml one-mark volumetric flask. Dilute to the mark with water and mix.

1 ml of this standard solution contains 0,1 mg of Cl^-.

4 Apparatus

Ordinary laboratory apparatus and

4.1 Filter papers, chloride-free.

4.2 Two matched Nessler cylinders, of capacity 100 ml.

5 Procedure

5.1 Test portion

If the expected inorganic chlorides content lies within the range 0,000 5 to 0,05 % (m/m), weigh 50 ± 0,5 g of the laboratory sample. If the content is outside this range, weigh an appropriately reduced or increased mass and adjust the volume of the aliquot portion (0,05/x ml) taken in 5.4 accordingly.

5.2 Preparation of the test solution

Transfer the test portion (5.1) quantitatively to a 250 ml one-mark volumetric flask, dilute to the mark with water and mix.

If the solution is cloudy, filter it through one of the filter papers (4.1) to remove turbidity due to aluminium. Remove any residual turbidity, due to contamination with wax, by extraction with a suitable solvent, for example light petroleum.

5.3 Preparation of standard turbidimetric solution

Transfer 1,0 ml of the standard chloride solution (3.3) to one of the Nessler cylinders (4.2), dilute to the 100 ml mark with water, add 2 ml of the nitric acid solution (3.1) and mix.

5.4 Test

For a sample required to contain not more than x % (m/m) of inorganic chlorides, expressed as Cl^-, transfer to the other Nessler cylinder (4.2) an aliquot portion (0,05/x ml) of the test solution (5.2), dilute to the 100 ml mark with water, add 2 ml of the nitric acid solution (3.1) and mix.

Add to each Nessler cylinder 1 ml of the silver nitrate solution (3.2) and mix. Allow the cylinders to stand in the dark for 5 min, and then compare the turbidity produced by the aliquot portion of the test solution with that produced by the standard turbidimetric solution (5.3).

6 Expression of results

The inorganic chlorides content does not exceed x % (m/m) of Cl^- if the turbidity produced by the test solution does not exceed that produced by the standard turbidimetric solution.

Annex

ISO publications relating to acetic acid for industrial use

ISO 753/1 — General.

ISO 753/2 — Determination of acetic acid content — Titrimetric method.

ISO 753/3 — Determination of low formic acid contents — Gravimetric method.

ISO 753/4 — Determination of acetaldehyde monomer content — Titrimetric method.

ISO 753/5 — Determination of total acetaldehyde content — Titrimetric method.

ISO 753/6 — Determination of permanganate index.

ISO 753/7 — Determination of dichromate index.

ISO 753/8 — Visual limit test for inorganic chlorides.

ISO 753/9 — Visual limit test for inorganic sulphates.

ISO 753/10 — Visual limit test for heavy metals (including iron).

ISO 753/11 — Determination of iron content — 1,10-Phenanthroline photometric method.