International Standard 753/6

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Acetic acid for industrial use — Methods of test — Part 6 : Determination of permanganate index

Acide acétique à usage industriel — Méthodes d'essai — Partie 6 : Détermination de l'indice de permanganate

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Foreword

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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 753/6 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.

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Acetic acid for industrial use — Methods of test — Part 6 : Determination of permanganate index

1 Scope and field of application

This part of ISO 753 specifies a method for the determination of the permanganate index of acetic acid for industrial use.

The method is applicable to products having permanganate indexes equal to or greater than 10 mg/100 ml.

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

2 Reference

ISO/R 385, *Burettes.*

3 Definition

For the purposes of this International Standard, the following definition applies.

permanganate index : The number of milligrams of potassium permanganate reduced by 100 ml of the laboratory sample under the conditions specified.

4 Principle

Reaction of a test portion, under specified conditions, with an excess of potassium permanganate solution in the presence of dilute sulphuric acid. Iodometric titration of the residual potassium permanganate.

5 Reagents

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

5.1 Sulphuric acid, 50 g/l solution.

5.2 Potassium permanganate, 1 g/l solution.

5.3 Potassium iodide, 100 g/l solution.

5.4 Sodium thiosulphate, standard volumetric solution, $c(Na_2S_2O_3)$ = 0,033 mol/l.

5.5 Starch solution.

Triturate 1,0 g of soluble starch with 5 ml of water and, whilst stirring, pour the mixture into 100 ml of boiling water. Boil for a few minutes and cool.

Discard the solution after 2 weeks.

6 Apparatus

Ordinary laboratory apparatus and

6.1 Two conical flasks, of capacity 250 ml, of borosilicate glass, provided with ground glass stoppers.

6.2 Water bath, capable of being controlled at 20 ± 0,5 °C.

6.3 Burettes, of capacity 10 ml, complying with the requirements of ISO/R 385, class A.

7 Procedure

7.1 Test portion

Measure 5,0 ml of the laboratory sample into one of the conical flasks (6.1) containing 50 ml of the sulphuric acid solution (5.1) and mix.

7.2 Blank test

Carry out a blank test at the same time as the determination, using the second conical flask (6.1), following the same procedure and using the same quantities of all the reagents [except the sodium thiosulphate solution (5.4)] as used for the determination, but omitting the test portion.

7.3 Determination

Immerse the flask containing the test portion (7.1) in the water bath (6.2), controlled at 20 ± 0,5 °C, and add the potassium permangate solution (5.2) from one of the burettes (6.3) until a permanent red colour is established. Then add a further 10 ml of the potassium permanganate solution and note the total volume used of this solution.