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Hydrochloric acid for industrial use — Determination of soluble sulphates — Turbidimetric method

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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 2762 was drawn up by Technical Committee ISO/TC 47, *Chemistry*, and circulated to the Member Bodies in April 1972.

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

Austria	Ireland	South Africa, Rep. of
Belgium	Israel	Spain
Czechoslovakia	Italy	Sweden
Egypt, Arab Rep. of	Netherlands	Switzerland
France	New Zealand	Thailand
Germany	Poland	Turkey
Hungary	Portugal	United Kingdom
India	Romania	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.

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Hydrochloric acid for industrial use – Determination of soluble sulphates – Turbidimetric method

1 SCOPE

This International Standard specifies a turbidimetric method for the determination of soluble sulphates in hydrochloric acid for industrial use.

2 FIELD OF APPLICATION

The method is applicable to products containing less than 0,1 % (m/m) of soluble sulphates, expressed as SO_4 .¹⁾

3 PRINCIPLE

Evaporation of a test portion to dryness and solution of the residue in hydrochloric acid.

Measurement of the turbidity obtained by precipitation, under well-defined conditions, of barium sulphate.

4 REAGENTS

Distilled water, or water of equivalent purity, shall be used in the test.

4.1 Barium chloride dihydrate, of uniform particle size between 0,50 and 1,25 μm , standardized by screening.

It is essential that all preparations concerning the determination and standardization shall be carried out using a product of the same particle size distribution.

4.2 Sodium carbonate, approximately N solution.

4.3 Hydrochloric acid, approximately N solution.

4.4 Sulphuric acid standard solution, corresponding to 0,100 g of SO_4 per litre.

Transfer 20,80 ml of 0,1 N standard volumetric sulphuric acid solution to a 1 000 ml one-mark volumetric flask, dilute to the mark and mix.

1 ml of this standard solution contains 0,1 mg of SO_4 .

5 APPARATUS

Ordinary laboratory apparatus and

5.1 Spectrophotometer, or

5.2 Photoelectric absorptiometer, fitted with filters, giving only a negligible transmission below 450 nm and above 550 nm.

6 PROCEDURE

6.1 Test portion

Weigh, to the nearest 0,01 g, a quantity of the test sample containing 0,5 to 4 mg of SO_4 .

If the test sample is turbid, first pass it through a dry filter, collecting the filtrate in a dry receiver, discarding the first portions of the filtrate.

NOTE — In this case any sulphates contained in the insoluble matter are not determined.

6.2 Blank test

At the same time as the determination, carry out a blank test, following the same procedure and using the same quantities of all the reagents used for the determination, but replacing the test portion by 5 ml of the sulphuric acid standard solution (4.4), corresponding to 0,5 mg of SO_4 , added to allow operation in the linear part of the calibration curve.

1) For products having an SO_4 content greater than 0,1 % (m/m) see ISO/R 906, *Hydrochloric acid for industrial use – Determination of sulphate content – Barium sulphate gravimetric method*.