
INTERNATIONAL STANDARD



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Hydrochloric acid for industrial use — Determination of arsenic content — Silver diethyldithiocarbamate photometric method

Acide chlorhydrique à usage industriel — Dosage de l'arsenic — Méthode photométrique au diéthylthiocarbamate d'argent

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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.

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

Australia	Germany	Romania
Austria	Hungary	South Africa, Rep. of
Belgium	Israel	Switzerland
Brazil	Italy	Turkey
Bulgaria	Mexico	United Kingdom
Chile	Netherlands	Yugoslavia
Czechoslovakia	Poland	
France	Portugal	

No member body expressed disapproval of the document.

Hydrochloric acid for industrial use – Determination of arsenic content – Silver diethyldithiocarbamate photometric method

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a silver diethyldithiocarbamate photometric method for the determination of the arsenic content of hydrochloric acid for industrial use.

The method is applicable to products having arsenic (As) contents equal to or greater than 0,1 mg/kg.

2 REFERENCE

ISO 2590, *General method for the determination of arsenic – Silver diethyldithiocarbamate photometric method*.

3 PRINCIPLE

See ISO 2590, clause 3.

4 REAGENTS

See ISO 2590, clause 4.

5 APPARATUS

See ISO 2590, clause 5.

6 PROCEDURE

WARNING – See ISO 2590, clause 6.

6.1 Test portion

Weigh, to the nearest 0,001 g, 10 to 12 g of the test sample.

6.2 Preparation of the test solution

6.2.1 If the test portion (6.1) contains from 1 to 20 µg of As, introduce it into the conical flask (5.1.1) of the apparatus (5.1). Add water and, if necessary, some of the

hydrochloric acid solution (4.1) so as to give a final volume not exceeding 40 ml. The resulting solution should have an acidity of between 2,5 N and 3 N.

6.2.2 If the test portion (6.1) contains more than 20 µg of As, dilute it with water, transfer the solution obtained quantitatively to a one-mark volumetric flask of suitable capacity, dilute to the mark and mix. Take an aliquot portion of accurately known volume not exceeding 20 ml and containing not more than 20 µg of As, and introduce it into the conical flask (5.1.1) of the apparatus (5.1). Add the hydrochloric acid solution (4.1) and water, taking care not to exceed a volume of 40 ml. The resulting solution should have an acidity of between 2,5 N and 3 N.

6.4 Preparation of the calibration graph

See ISO 2590, sub-clause 6.3.

6.3 Blank test

See ISO 2590, sub-clause 6.2.

6.5 Determination

To the test solution (6.2.1 or 6.2.2), contained in the conical flask (5.1.1), add 2 ml of the potassium iodide solution (4.6) and 2 ml of the tin(II) chloride solution (4.7); swirl and allow to stand for 15 min. Continue in accordance with the procedure specified in ISO 2590, sub-clause 6.3.1, starting from the third paragraph ("Place a little of the absorbent cotton wool . . .").

6.5.1 Photometric measurements

Carry out the photometric measurements on the test solution and the blank test solution according to the procedure specified in ISO 2590, sub-clause 6.4.1, after having, however, adjusted the instrument to zero absorbance against the silver diethyldithiocarbamate solution (4.2).