
INTERNATIONAL STANDARD



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Ammonium sulphate for industrial use – Determination of arsenic content – Silver diethyldithiocarbamate photometric method

Sulfate d'ammonium à usage industriel – Dosage de l'arsenic – Méthode photométrique au diéthylthiocarbamate d'argent

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FOREWORD

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

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

No member body expressed disapproval of the document.

Ammonium sulphate 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 ammonium sulphate 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

Dissolution of a test portion, acidification with hydrochloric acid solution and application of the general method (see ISO 2590, clause 3).

4 REAGENTS

See ISO 2590, clause 4.

5 APPARATUS

See ISO 2590, clause 5; replace "5.1.1 Conical flask, 100 ml capacity, for the liberation of the arsine." by

5.1.1 Conical flask, 125 ml capacity, for the liberation of the arsine.

6 PROCEDURE

WARNING – See ISO 2590, clause 6.

6.1 Test portion

Weigh, to the nearest 0,001 g, about 20 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 50 ml of water, stir until dissolution is complete and add 15 ml of the hydrochloric acid solution (4.1). The resulting solution should have an acidity of about 3 N.

6.2.2 If the test portion (6.1) contains more than 20 µg of As, dissolve it in 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 50 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 15 ml of the hydrochloric acid solution (4.1) and, if necessary, dilute to about 65 ml with water. The resulting solution should have an acidity of about 3 N.

6.3 Blank test

See ISO 2590, sub-clause 6.2.

6.4 Preparation of the calibration graph

See ISO 2590, sub-clause 6.3.

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).