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Potassium sulphate for industrial use — Determination of acidity to methyl orange

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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 2489 was drawn up by Technical Committee ISO/TC 47, *Chemistry,* and circulated to the Member Bodies in August 1971.

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

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

No Member Body expressed disapproval of the document.

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Potassium sulphate for industrial use — Determination of acidity to methyl orange

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method of determining the acidity to methyl orange of potassium sulphate for industrial use.

2 PRINCIPLE

Dissolution of a test portion in the presence of methyl orange and titration of the acidity, if indicated, using standard volumetric sodium hydroxide solution.

3 REAGENTS

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

3.1 Sodium hydroxide, 0,1 N standard volumetric solution.

3.2 Methyl orange, 0,5 g/l solution.

4 APPARATUS

Ordinary laboratory apparatus.

5 PREPARATION OF THE SAMPLE

Divide the product with the aid of a spatula.

6 PROCEDURE

6.1 Test portion

Weigh, to the nearest 0,1 g, 20 g of the laboratory sample.

6.2 Determination

Transfer the test portion (6.1) to a 400 ml beaker containing 200 ml of cold water and 1,0 ml of the methyl orange solution (3.2). Stir for 5 min with a glass stirrer.

If the solution is coloured yellow, the product is not acid to methyl orange.

If the solution is coloured red, bring it carefully to the boil and continue boiling gently for 5 min. Allow it to cool and then add a further 2 drops of the methyl orange solution (3.2). If the colour changes to yellow the product is also regarded as not acid to methyl orange. If the colour remains red, titrate the acidity with the standard volumetric sodium hydroxide solution (3.1) until the colour changes from red to yellow.

7 EXPRESSION OF RESULTS

If the product is not acid, this should be stated.

If the product is acid, the acidity, expressed as a percentage by mass of sulphuric acid (H_2SO_4), is given by the formula

$$0{,}1\ V \times \frac{49{,}04}{1\,000} \times \frac{100}{m} = \frac{0{,}490\ V}{m}$$

where

m is the mass, in grams, of the test portion;

V is the volume, in millilitres, of the standard volumetric sodium hydroxide solution (3.1) used for the determination.

8 TEST REPORT

The test report shall include the following particulars :

a) the reference of the method used;

b) the results and the method of expression used;

c) any unusual features noted during the determination;

d) any operation not included in this International Standard, or regarded as optional.