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INTERNATIONAL STANDARD ISO 1390/IV

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Maleic anhydride for industrial use — Methods of test — Part IV : Determination of maleic anhydride content — Titrimetric method

Anhydride maléique à usage industriel — Méthodes d'essai —
Partie IV : Détermination de la teneur en anhydride maléique — Méthode titrimétrique

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

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.

Prior to 1972, the results of the work of the technical committees were published as ISO Recommendations; these documents are in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 47, *Chemistry,* has reviewed ISO Recommendation R 1390-1970 and found it technically suitable for transformation. The technical committee, however, divided the recommendation into six parts (ISO 1390, parts I to VI), which therefore replace ISO Recommendation R 1390-1970, to which they are technically identical.

ISO Recommendation R 1390 had been approved by the member bodies of the following countries :

Austria	Iran	South Africa, Rep. of
Belgium	Ireland	Spain
Brazil	Italy	Sweden
Cuba	Korea, Rep. of	Switzerland
Czechoslovakia	Netherlands	Thailand
France	New Zealand	Turkey
Germany	Poland	United Kingdom
Hungary	Portugal	U.S.S.R.
India	Romania	

No member body had expressed disapproval of the Recommendation.

The member bodies of the following countries disapproved the transformation of the Recommendation into an International Standard :

France
Netherlands

Printed in Switzerland

Maleic anhydride for industrial use — Methods of test — Part IV : Determination of maleic anhydride content — Titrimetric method

1 SCOPE AND FIELD OF APPLICATION

This part of ISO 1390 specifies a titrimetric method for the determination of the maleic anhydride content of maleic anhydride for industrial use.

This document should be read in conjunction with part I (see the annex).

2 PRINCIPLE

Titration of a test portion with a standard volumetric sodium hydroxide solution, using phenolphthalein as indicator.

3 REAGENTS

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

3.1 Sodium hydroxide, 0,5 N standard volumetric solution.

3.2 Phenolphthalein, 5 g/l ethanolic solution.

Dissolve 0,5 g of phenolphthalein in 100 ml of 95 % (*V*/*V*) ethanol and make slightly pink by addition of dilute sodium hydroxide solution.

4 APPARATUS

Ordinary laboratory apparatus and

4.1 Conical flask, of borosilicate glass, of capacity 250 ml.

4.2 Burette, of capacity 50 ml, graduated in 0,05 ml or smaller divisions.

5 PROCEDURE

5.1 Place 1 g, weighed to the nearest 0,001 g, of the test sample in the conical flask (4.1) and add 35,00 ml of the sodium hydroxide solution (3.1) from the burette (4.2) and 35 ml of freshly boiled and cooled water. Warm gently until the test portion is dissolved.

5.2 Add 0,5 ml of the phenolphthalein solution (3.2) and complete the neutralization by titration with the sodium hydroxide solution until a faint pink colour is obtained.

6 EXPRESSION OF RESULTS

The maleic anhydride [$(CHCO)_2O$] content, expressed as a percentage by mass, is given by the formula

$$\frac{2{,}45\,V}{m} - 0{,}845\,A$$

where

V is the volume, in millilitres, of the sodium hydroxide solution (3.1) used;

m is the mass, in grams, of the test portion (see 5.1);

A is the free acidity, expressed as a percentage by mass of maleic acid (see part III).

NOTE — If the concentration of the standard volumetric solution used is not exactly as specified in the list of reagents, an appropriate correction should be made.

ANNEX

ISO PUBLICATIONS RELATING TO MALEIC ANHYDRIDE FOR INDUSTRIAL USE

ISO 1390/I – General.

ISO 1390/II – Measurement of colour of molten material.

ISO 1390/III – Determination of free acidity – Potentiometric method.

ISO 1390/IV – Determination of maleic anhydride content – Titrimetric method.

ISO 1390/V – Determination of ash.

ISO 1390/VI – Determination of iron content – 2,2′-Bipyridyl photometric method.