INTERNATIONAL STANDARD

ISO 4629

Second edition
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Binders for paints and varnishes — Determination of hydroxyl value — Titrimetric method

Liants pour peintures et vernis — Détermination de l'indice d'hydroxyle — Méthodes titrimétriques

Reference number
ISO 4629:1996(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4629 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes,* Subcommittee SC 10, *Test methods for binders for paints and varnishes.*

This second edition cancels and replaces the first edition (ISO 4629:1978), which has been technically revised.

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Binders for paints and varnishes — Determination of hydroxyl value — Titrimetric method

1 Scope

This International Standard specifies a titrimetric method for determining the free hydroxyl groups in binders and binder solutions for paints and varnishes. The hydroxyl groups may be present as polyhydric alcohols, partial esters, polyester end groups or hydroxylated fatty acids.

This method is not applicable to resins containing both hydroxyl groups and epoxy groups, because the latter will also be included in the result. Also the method is not applicable to cellulose nitrate or to phenolic resins.

NOTES

1 If, in the case of binder solutions, the hydroxyl value of the binder only is to be determined, the possibility that other constituents of the binder solution may contain hydroxyl groups will have to be taken into account.

2 A method for the determination of the hydroxyl value of epoxy resins is described in ISO 7142:1984, *Binders for paints and varnishes — Epoxy resins — General methods of test.*

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 385-1:1984, *Laboratory glassware — Burettes — Part 1: General requirements.*

ISO 648:1977, *Laboratory glassware — One-mark pipettes.*

ISO 842:1984, *Raw materials for paints and varnishes — Sampling.*

ISO 3682:1996, *Binders for paints and varnishes — Determination of acid value — Titrimetric method.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

3 Definition

For the purposes of this International Standard, the following definition applies:

3.1 hydroxyl value: The number of milligrams of potassium hydroxide (KOH) corresponding to hydroxyl groups that have been acetylated under specified test conditions in 1 g of the product tested.

4 Principle

The hydroxyl groups contained in a test portion are acetylated with acetic anhydride. The excess acetic anhydride is hydrolysed and the resulting acetic acid is titrated with potassium hydroxide solution, either in the presence of a colour indicator or potentiometrically.

NOTE 3 Primary and secondary amines, if present, will also be acetylated. In such cases, this will have to be allowed for when calculating the hydroxyl value.

5 Reagents

During the analysis, use only reagents of recognized analytical grade and only water of at least grade 3 purity as defined in ISO 3696.