

INTERNATIONAL STANDARD

ISO
11214

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Modified starch — Determination of carboxyl group content of oxidized starch

Amidon modifié — Dosage des groupes carboxyles dans l'amidon oxydé



Reference number
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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 11214 was prepared by Technical Committee ISO/TC 93, *Starch (including derivatives and by-products)*.

Annexes A and B of this International Standard are for information only.

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Modified starch — Determination of carboxyl group content of oxidized starch

1 Scope

This International Standard specifies a method for the determination of the carboxyl group content of oxidized starch.

The method is suitable for determining carboxyl group contents up to 1 % (*m/m*).

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 1666:—¹⁾, *Starch — Determination of moisture content — Oven-drying method*.

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

ISO 3946:1982, *Starches and derived products — Determination of total phosphorus content — Spectrophotometric method*.

3 Principle

The carboxyl groups are converted into the acid form

by adding a mineral acid to a homogenized test portion of the oxidized starch.

The cations and the excess acid are eliminated by washing with water.

The washed sample is gelatinized and titrated with sodium hydroxide standard solution.

For oxidized potato starch, the result is corrected for the phosphate group content.

4 Reagents and materials

Use only reagents of recognized analytical grade, unless otherwise specified, and water complying with grade 2 in accordance with ISO 3696. The water used shall be free of carbon dioxide.

4.1 Hydrochloric acid, 0,1 mol/l solution.

4.2 Sodium hydroxide, standard volumetric solution, $c(\text{NaOH}) = 0,1 \text{ mol/l}$, free of carbon dioxide.

4.3 Phenolphthalein in ethanol, 1 g/l solution, 90 % (V/V).

4.4 Silver nitrate, 10 g/l solution.

5 Apparatus

Usual laboratory apparatus and in particular the following.

5.1 Beakers, of capacity 100 ml and 600 ml.

5.2 Magnetic stirrer.

1) To be published. (Revision of ISO 1666:1973)