

INTERNATIONAL
STANDARD

ISO
976

Third edition
1996-06-15

**Rubber and plastics — Polymer dispersions
and rubber latices — Determination of pH**

*Caoutchouc et plastiques — Dispersions de polymères et latex de
caoutchouc — Détermination du pH*



Reference number
ISO 976:1996(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 976 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 3, *Raw materials (including latex) for use in the rubber industry*, in close collaboration with ISO/TC 61, *Plastics*, and ISO/TC 35, *Paints and varnishes*.

This third edition cancels and replaces the second edition (ISO 976:1986), as well as the second edition of ISO 1148 (ISO 1148:1980).

Annex A of this International Standard is for information only.

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Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Rubber and plastics — Polymer dispersions and rubber latices — Determination of pH

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard specifies a method for the determination of the pH of polymer dispersions and rubber latices (natural and synthetic) by means of a pH-meter equipped with a combined glass and silver reference electrode.

The method is also suitable for pre-vulcanized latex and compounds containing polymer dispersions or rubber latices, including adhesives.

NOTE 1 The accuracy of the method decreases at pH values above 11.

Users should note that this edition of ISO 976 not only represents a revision of the previous edition, but also supersedes ISO 1148:1980, *Plastics — Aqueous dispersions of polymers and copolymers — Determination of pH*. This edition represents a harmonized version of the two standards.

One of the major changes in this new edition of ISO 976 is the use of a combined electrode rather than the separate electrodes used in the previous edition, the combined electrode being considered superior to the separate electrodes since the latter are prone to latex deposits blocking the electrolyte junction, thus adversely affecting repeatability. Although older-type twin electrodes are capable of giving accurate results, they should be progressively replaced because of this problem of cleaning and repeatability.

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 123:1985, *Rubber latex — Sampling*.

ISO 842:—¹⁾, *Raw materials for paints and varnishes — Sampling*.

ISO 3696:1987, *Water for laboratory use — Specifications and methods of test*.

3 Reagents

Use commercially available analytical-grade buffer-solutions of known pH or, in the absence of commercial buffer solutions, prepare the solutions required (3.1, 3.2 and 3.3) using only reagents of recognized analytical grade and carbon-dioxide-free distilled water or water of equivalent purity (grade 3 as defined in ISO 3696).

3.1 Buffer solution of nominal pH 7.

Dissolve 3,40 g of potassium dihydrogen phosphate (KH_2PO_4) and 3,55 g of disodium hydrogen phosphate (Na_2HPO_4) in water and make up to 1 000 cm³ in a volumetric flask.

The pH of this solution is 6,87 at 23 °C.

Store the solution in a glass or polyethylene vessel that is resistant to chemicals.

1) To be published. (Revision of ISO 842:1984)