INTERNATIONAL STANDARD

**ISO 10716**

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# Paper and board — Determination of alkali reserve

*Papier et carton — Détermination de la réserve alcaline*

Reference number
ISO 10716:1994(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 10716 was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*.





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## Introduction

Papers produced to be stable for long time periods normally contain some alkaline filler, such as calcium carbonate, as an alkali reserve to prevent attack from acid substances in ambient air or formed by deterioration of substances in the paper. Specifications for paper permeance may require a minimum alkali reserve. This ISO Standard is intended for checking the amount of alkali reserve present.

Normally, the required alkali reserve is obtained by adding some form of calcium carbonate to the paper furnish, but other substances can also be used for the purpose. By expressing the test result in moles per kilogram of alkaline substances and not as a calcium carbonate content, no confusion arises when alkaline substances other than calcium carbonate are used.

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# Paper and board — Determination of alkali reserve



## 1 Scope

This International Standard specifies a method for the determination of the alkali reserve of papers and boards. It is intended for products that contain alkaline pigments or other alkaline material, added in order to improve their resistance to acid attack (degradation).

This International Standard is not applicable to laminated, printed or otherwise processed grades that will not disintegrate completely by the procedure described.

The result obtained will include alkaline pigments contained in the coating of a coated paper.

NOTE 1 Such alkaline coating will protect the core of the paper from acid substances in ambient air, but its effect on acid substances generated in the base paper itself is uncertain.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10716. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 10716 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 186:—[1], *Paper and board — Sampling to determine average quality.*

ISO 287:1985, *Paper and board — Determination of moisture content — Oven drying method.*

## 3 Definitions

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

**3.1 alkali reserve** (in paper and board): Compound, such as calcium carbonate, that neutralizes acid that might be generated as a result of natural ageing or from atmospheric pollution, determined as specified in this International Standard.

## 4 Principle

Digestion of the sample in water containing a measured amount of hydrochloric acid. Heating of the slurry to boiling and titration of unreacted hydrochloric acid with sodium hydroxide solution.

## 5 Reagents

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

**5.1 Hydrochloric acid,** standard reference solution, $c$(HCl) = 0,10 mol/l ± 0,001 mol/l.

**5.2 Sodium hydroxide solution,** titrant, $c$(NaOH) = 0,1 mol/l.

**5.3 Methyl red,** indicator solution for acidometric titration.

Dissolve 0,2 g of methyl red {2-[4-(dimethylamino)-phenylazo]benzoic acid} in 100 ml of ethanol.

## 6 Apparatus

Ordinary laboratory equipment.

## 7 Sampling and preparation of sample

Ensure that the sample is representative of the lot to be tested. Where applicable, follow the instructions given in ISO 186.

Select from the sample enough test pieces to provide for the testing to be done, ensuring that these pieces are representative of the whole sample. Tear the

1) To be published. (Revision of ISO 186:1985)