INTERNATIONAL STANDARD

ISO 10775

Second edition
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Paper, board and pulps — Determination of cadmium content — Atomic absorption spectrometric method

Papier, carton et pâtes — Détermination de la teneur en cadmium — Méthode par spectrométrie d'absorption atomique

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 6, *Paper, board and pulps*.

This second edition cancels and replaces the first edition (ISO 10775:1995), of which it constitutes a minor revision.

Paper, board and pulps — Determination of cadmium content — Atomic absorption spectrometric method

1 Scope

This International Standard specifies a method for the determination of traces of cadmium in all types of paper, board and pulp, including products containing recycled fibre, that can be wet-combusted in nitric acid as specified in this International Standard.

The lower limit of the determination depends on the equipment used and is normally about 10 µg/kg. Cadmium present in pigments and fillers that do not dissolve in nitric acid under the conditions of this test may not be determined quantitatively.

NOTE It has been claimed that the dissolution of cadmium from pigments other than calcium carbonate is incomplete by a few percent.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 186, *Paper and board — Sampling to determine average quality*

ISO 287, *Paper and board — Determination of moisture content of a lot — Oven-drying method*

ISO 638, *Paper, board and pulps — Determination of dry matter content — Oven-drying method*

ISO 7213, *Pulps — Sampling for testing*

3 Principle

The sample is treated with nitric acid in a closed vessel. The resulting solution is diluted and cadmium content determined by atomic absorption spectrometry using the graphite furnace technique.

Wet combustion may be done either in an autoclave or microwave oven.

4 Reagents

All reagents shall be of the highest possible purity. The quality normally designated “pro analysi” or “analytical reagent (AR)” is often not sufficiently pure. Use only freshly distilled and deionized water or water of equivalent purity.

NOTE Commercially available solutions may also be used.

4.1 Concentrated nitric acid, $c(HNO_3)$ = 15 mol/l

Use a quality specially made for use in the determination of trace metals.

4.2 Dilute nitric acid, $c(HNO_3)$ = 0,15 mol/l

Dilute with water 10 ml of concentrated nitric acid (4.1) to one litre.