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**Paper, board, pulps and cellulosic  
nanomaterials — Determination of  
dry matter content by oven-drying  
method —**

**Part 2:  
Suspensions of cellulosic  
nanomaterials**

*Papiers, cartons, pâtes et nanomatériaux cellulosiques —  
Détermination de la teneur en matières sèches par séchage à  
l'étuve —*

*Partie 2: Suspensions de nanomatériaux cellulosiques*



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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 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 6 *Paper, board and pulps*.

This first edition of ISO 638-2, together with ISO 638-1, cancels and replaces ISO 638:2008, which has been technically revised. The main changes compared to the previous edition are as follows:

- inclusion of cellulosic nanomaterials and paper and board for recycling in the scope;
- splitting of the standard in two parts;
- technical revision of the procedure;
- editorial revision of the document;
- update of precision clause.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

Determination of dry matter content and water content are carried out for different purposes.

This document is used when the dry matter content is needed to calculate the results for chemical analysis or physical testing, or to determine the water content of cellulosic nanomaterial suspensions.

ISO 638-1<sup>[1]</sup> is dedicated to the determination of the dry matter content or moisture content in paper, board, pulp and cellulosic nanomaterials in solid form, which all may be produced from virgin and/or recycled materials.

ISO 287<sup>[2]</sup> is used for the purpose of determining the average moisture content and the variation in moisture content (maximum and minimum values) of a lot of paper and board. In the converting of paper and board, moisture content is important as it can have an effect on processes such as printing and copying. Moisture content can have an effect on curl and dimensional stability.

ISO 4119<sup>[3]</sup> is used in laboratory procedures or is referred to in other International Standards in which the stock concentration of an aqueous pulp suspension requires determination.



# Paper, board, pulps and cellulosic nanomaterials — Determination of dry matter content by oven-drying method —

## Part 2: Suspensions of cellulosic nanomaterials

### 1 Scope

This document specifies an oven-drying method for the determination of the dry matter content in suspensions of cellulosic nanomaterials. The procedure is applicable to cellulosic nanomaterial suspensions which do not contain any appreciable quantities of materials other than water that are volatile at the temperature of  $105\text{ °C} \pm 2\text{ °C}$ . It is used, for example, in the case of cellulosic nanomaterial suspensions samples taken for chemical and physical tests in the laboratory, when a concurrent determination of dry matter content is required.

NOTE 1 ISO 638-1<sup>[1]</sup> specifies the dry matter content in paper, board, pulp and cellulosic nanomaterials in solid form, which all can be produced from virgin and/or recycled materials; ISO 287<sup>[2]</sup> specifies the determination of moisture content of a lot of paper and board; ISO 4119<sup>[3]</sup> specifies the determination of stock concentration of aqueous pulp suspensions; ISO 801 (all parts)<sup>[4]</sup> specifies the determination of saleable mass in lots.

NOTE 2 This document determines the total dry matter content of the sample, including any dissolved solids. If only the cellulosic material content free of dissolved solids is desired, dissolved solids are removed prior to measuring the dry matter content e.g. by washing or dialysis, taking care to retain all cellulosic material.

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1 cellulosic nanomaterial CNM

material composed predominantly of cellulose, with any external dimension in the *nanoscale* (3.5), or a material having internal structure or surface structure in the nanoscale, with the internal structure or surface structure composed predominantly of cellulose

Note 1 to entry: The terms nanocellulose (NC) and cellulose nanomaterial (CNM) are alternative terms for cellulosic nanomaterial (CNM).

Note 2 to entry: Some cellulosic nanomaterials can be composed of chemically modified cellulose.