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# Plastics — Polyamides — Accelerated conditioning of test specimens

*Plastiques — Polyamides — Conditionnement accéléré d'éprouvettes*

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# Foreword

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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).

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For an explanation on 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.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastics*.

This fourth edition cancels and replaces the third edition (ISO 1110:1995), which has been technically revised. The main changes compared to the previous edition are as follows:

— the symbol of the polyamide has been corrected;

— the references have been changed to undated references.

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.


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# Introduction

Various properties of polyamides (PA) depend upon their moisture content. Reproducible values of these properties can only be obtained with specimens having a specified moisture content. Such specimens are obtained by conditioning, i.e. by allowing them to reach equilibrium in an atmosphere with a specified temperature and relative humidity.

The rate of moisture absorption and, therefore, the rate of conditioning, is a function of the temperature. This rate is very low at room temperature. For example, a 4 mm thick test specimen of PA66 requires more than a year to attain its equilibrium moisture content in standard atmosphere 23/50 (see ISO 291). A higher temperature is used when conditioning specimens in a short period of time. Such a method for accelerated conditioning is presented in this document.

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# Plastics — Polyamides — Accelerated conditioning of test specimens

## 1 Scope

This document describes a method for the accelerated conditioning of test specimens of polyamides and copolyamides. It is applicable to grades containing fillers and other additives, but not grades containing more than a mass fraction of 2 % extractables.

The equilibrium moisture content attained by this method is close to the equilibrium moisture content obtained in standard atmosphere 23 °C/50 %RH. The values of mechanical properties obtained after accelerated conditioning in accordance with this method can differ slightly from those obtained after conditioning in standard atmosphere 23 °C/50 %RH.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 483, *Plastics — Small enclosures for conditioning and testing using aqueous solutions to maintain the humidity at a constant value*

## 3 Terms and definitions

No terms and definitions are listed in this document.

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/

## 4 Principle

The test specimens are stored in an atmosphere of 70 °C ± 1 °C and (62 ± 1) % relative humidity (psychrometeric temperature difference of 10 °C ± 0,3 °C) until moisture absorption by the specimen has reached at least 95 % of its equilibrium level.

## 5 Apparatus

**5.1** **Cabinet**, with closed air circulation by a fan, capable of maintaining temperature of 70 °C within a tolerance of ±1 °C and a psychrometric temperature difference of 10 °C within a tolerance of ±0,3 °C, corresponding to a relative humidity of (62 ± 1) %.

**5.2** If a cabinet as described in 5.1 is not available:

**5.2.1** **Oven**, capable of maintaining the temperature at 70 °C ± 1 °C.

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