INTERNATIONAL STANDARD

**ISO 1600**

Second edition
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# Plastics — Cellulose acetate — Determination of light absorption on moulded specimens produced using different periods of heating

*Plastiques — Acétate de cellulose — Détermination de l'absorption de lumière sur éprouvettes moulées produites en utilisant différentes périodes de chauffage*



Reference number
ISO 1600:1990(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 1600 was prepared by Technical Committee ISO/TC 61, *Plastics*.

This second edition cancels and replaces the first edition (ISO 1600:1975), of which it constitutes a minor technical revision.





International Organization for Standardization
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# Plastics — Cellulose acetate — Determination of light absorption on moulded specimens produced using different periods of heating

**WARNING — The use of this International Standard may involve hazardous materials, operations and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.**

## 1 Scope

This International Standard specifies a method for the determination of light absorption of cellulose acetate, employing test specimens taken from two mouldings which have been produced using different periods of heating.

The aim is to provide quantitative measurements which are compatible with visual judgements of yellowness and lightness, and of changes in these properties after moulding. The determinations are carried out on cellulose acetate in plasticized form rather than in solution, since a more reliable guide is thereby obtained to the performance of cellulose acetate in plastics materials.

This method minimizes the effects of haze or imperfections in the specimens.

This method is intended for cellulose acetate having an acetic acid yield of 54 % ± 2,5 %. It may also be applicable to other transparent plastics which are not strongly coloured and which can be moulded under the specified conditions.

## 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 565:1990, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings.*

ISO 585:1990[1], *Plastics — Unplasticized cellulose acetate — Determination of moisture content.*

## 3 Principle

The absorption of visible light by cellulose acetate is normally greatest at the blue end of the visible spectrum, and decreases continuously across the spectrum to the red end. Therefore two measurements of absorption, one at the red end and one at the blue end, are sufficient to characterize the absorption of light by the material.

For the determination of the initial optical density, specimens given the smallest practicable amount of heating are used. The optical densities are measured for blue light and for red light using specified colour filters, and the optical density at 25 mm thickness is calculated as the "initial light absorption".

The "light absorption after further heating" is obtained by similar measurements on further specimens prepared using a longer period of heating during moulding.

1) To be published.