STANDARD **1599**

Second edition
1990-12-01

Plastics — Cellulose acetate — Determination of viscosity loss on moulding

Plastiques — Acétate de cellulose — Détermination de la perte de viscosité au moulage

Reference number
ISO 1599:1990(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 1599 was prepared by Technical Committee ISO/TC 61, *Plastics*.

This second edition cancels and replaces the first edition (ISO 1599:1975), of which it constitutes a minor revision.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Plastics — Cellulose acetate — Determination of viscosity loss on moulding

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 the reduction in viscosity which occurs when cellulose acetate is moulded. The viscosity loss on moulding is related to the depolymerization of cellulose acetate, which generally increases brittleness in the moulded product.

This method is suitable for cellulose acetate which does not contain additives, fillers, etc., which may interfere with the determination of viscosity.

It is suitable for cellulose acetate having an acetic acid yield above 50 %.

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.*

ISO 1157:1990, *Plastics — Cellulose acetate in dilute solution — Determination of viscosity number and viscosity ratio.*

3 Principle

Cellulose acetate plasticized with dimethyl phthalate is moulded under specified conditions of temperature, pressure and time. After cooling, the moulding is ground up. The viscosity ratio of the ground material from the moulding and also that of the original cellulose acetate are determined in accordance with ISO 1157. The percentage viscosity loss is calculated from the values of viscosity before and after moulding.

NOTE 1 Since the moulded cellulose acetate contains dimethyl phthalate, this is also present in the solution for viscosity measurement; the solution of original cellulose acetate does not contain dimethyl phthalate. However, the concentration of dimethyl phthalate in the solution for viscosity measurement is too small to have any significant effect on viscosity.

4 Reagents

During the determination, use only reagents of recognized analytical grade.

4.1 Dimethyl phthalate, analytical grade, d_{20}^{20} 1,191 to 1,195, purity more than 99 % (*m*/*m*).

4.2 Solvents for viscosity ratio determination, as specified in ISO 1157.

1) To be published.