STANDARD 10363

First edition
1992-12-01

Hot-melt adhesives — Determination of thermal stability

Adhésifs thermofusibles — Détermination de la stabilité thermique

Reference number
ISO 10363:1992(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 10363 was prepared by Technical Committee ISO/TC 61, *Plastics*, Sub-Committee SC 11, *Products*.

Annex A of this International Standard is for information only.

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

Printed in Switzerland

Hot-melt adhesives — Determination of thermal stability

1 Scope

This International Standard specifies a method for determining the thermal stability of non-reactive hot-melt adhesives at temperatures up to 260 °C.

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 1770:1981, *Solid-stem general purpose thermometers.*

ISO 2555:1989, *Plastics — Resins in the liquid state or as emulsions or dispersions — Determination of apparent viscosity by the Brookfield Test method.*

ISO 4625:1980, *Binders for paints and varnishes — Determination of softening point — Ring-and-ball method.*

3 Principle

A quantity of hot-melt adhesive is heated under specified conditions. Samples are taken at regular time intervals and any changes in viscosity and in softening point (determined by the "ring-and-ball" method) during heating are noted. The maximum temperature and the duration of the test are fixed by agreement between the adhesive user and manufacturer.

4 Apparatus

4.1 Stainless-steel or glass vessel, external diameter 65 mm, height 95 mm, equipped with a loose-fitting lid.

4.2 Oil bath, stirred and capable of being maintained at the operating temperature recommended by the manufacturer of the hot-melt adhesive. Alternatively, a ventilated oven may be used instead of the oil bath. The oven or bath shall be capable of heating the sample to within ± 2 °C of the required temperature.

4.3 Glass stirring rod.

4.4 Apparatus for measuring the softening point by the "ring-and-ball" method as specified in ISO 4625.

4.5 Apparatus for measuring viscosity, in accordance with ISO 2555.

4.6 Thermometer, complying with type T of ISO 1770.

4.7 Balance, capable of weighing to the nearest 0,1 g.

5 Procedure

WARNING — For reasons of health and safety, conduct the tests in a ventilated space with a fume extraction system.

5.1 Place the stainless-steel or glass vessel (4.1) in the oil bath or oven (4.2) regulated to heat the sample to within ± 2 °C of the operating temperature recommended by the manufacturer of the hot-melt adhesive.