INTERNATIONAL STANDARD

ISO 13000-2

Second edition
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Plastics — Polytetrafluoroethylene (PTFE) semi-finished products —

Part 2: Preparation of test specimens and determination of properties

Plastiques — Semi-produits en polytétrafluoroéthylène (PTFE) —

Partie 2: Préparation des éprouvettes et détermination des propriétés

Reference number
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Contents

Page

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

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.

ISO 13000-2 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

This second edition cancels and replaces the first edition (ISO 13000-2:1997), which has been technically revised.

ISO 13000 consists of the following parts, under the general title *Plastics — Polytetrafluoroethylene (PTFE) semi-finished products*:

— *Part 1: Requirements and designation*

— *Part 2: Preparation of test specimens and determination of properties*

Plastics — Polytetrafluoroethylene (PTFE) semi-finished products —

Part 2: Preparation of test specimens and determination of properties

WARNING — Persons using this document should be familiar with normal laboratory practice, if applicable. This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any regulatory requirements.

1 Scope

This part of ISO 13000 specifies the preparation of test specimens and gives the test methods applicable to semi-finished products of polytetrafluoroethylene (PTFE).

2 Normative references

The following referenced documents are indispensable for the application 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 472, *Plastics — Vocabulary*

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

ISO 527-3, *Plastics — Determination of tensile properties — Part 3: Test conditions for films and sheets*

ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 1183 (all parts), *Plastics — Methods for determining the density of non-cellular plastics*

ISO 1923, *Cellular plastics and rubbers — Determination of linear dimensions*

ISO 2039-1, *Plastics — Determination of hardness — Part 1: Ball indentation method*

ISO 3611, *Micrometer callipers for external measurement*

ISO 4599, *Plastics — Determination of resistance to environmental stress cracking (ESC) — Bent strip method*

ISO 4600, *Plastics — Determination of environmental stress cracking (ESC) — Ball or pin impression method*

ISO 13000-1, *Plastics — Polytetrafluoroethylene (PTFE) semi-finished products — Part 1: Requirements and designation*

IEC 60243-1:1998, *Electrical strength of insulating materials — Part 1: Tests at power frequencies*

IEC 60243-2, *Electric strength of insulating materials — Part 2: Additional requirements for tests using direct voltage*

ASTM D 621-64, *Test methods for Deformation of Plastics Under Load* (Withdrawn — see Subclause 6.13 for details of availability)

ASTM D 1389, *Standard Test Method for Proof-Voltage Testing of Thin Solid Electrical Insulating Materials*

ASTM E 94, *Standard Guide for Radiographic Examination*

CIE Publication No. 15, *Colorimetry*

3 Terms and definitions

For the purposes of this part of ISO 13000, the terms and definitions given in ISO 472 and ISO 13000-1 apply.

4 Sampling

Details of procedures for sampling semi-finished products depend to a large extent on the physical shape of the particular material. Whenever feasible, the materials shall be sampled. Sampling shall be statistically adequate to satisfy the requirements of the test method concerned.

5 Preparation of test specimens

The specimens used for testing shall be taken directly from or shall be machined from the semi-finished product without other treatment. Thus, conversion of a semi-finished product into a test specimen by any moulding procedure is not permitted. Where applicable, ISO standards shall be followed for the preparation of test specimens. In some instances, special procedures are required that are described either in the general discussion or in the method.

6 Testing of semi-finished PTFE products

6.1 General

Properties required for specification purposes shall be determined in accordance with the International Standards referenced in this part of ISO 13000 or the procedures given in this part of ISO 13000. For the determination of density, tensile properties, hardness and electrical properties, condition the test specimens at 23 °C ± 2 °C for a period of at least 4 h prior to test. The other tests require no conditioning.

Annex A provides a list of other standards relating to testing semi-finished products of PTFE.

6.2 Linear dimensions

These shall be determined by the procedures provided in ISO 1923 for cellular plastics.