INTERNATIONAL STANDARD

ISO 13000-1

Third edition
2021-08

Plastics — Polytetrafluoroethylene (PTFE) semi-finished products —

Part 1: Requirements and designation

Plastiques — Semi-produits en polytétrafluoroéthylène (PTFE) — Partie 1: Spécifications et désignation

Reference number
ISO 13000-1:2021(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 13000-1:2005), which has been technically revised.

The main changes compared to the previous edition are as follows:

— in Clause 1, any requirement and permission have been removed, and the note has been deleted;

— in Clause 2, introductory wording has been updated;_

— in Clause 3, the clause title has been changed from "Terminology" to "Terms and definitions";

— in Clause 4, all tables have been numbered, titles have been provided; and the data in the tables have been revised;

— in Clause 5, designation examples have been added;

— former Annex A has been changed to Bibliography, and titles for standards have been corrected.

A list of all parts in the ISO 13000 series can be found on the ISO website.

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.

Plastics — Polytetrafluoroethylene (PTFE) semi-finished products —

Part 1: Requirements and designation

1 Scope

This document establishes a system of designation for processed unfilled polytetrafluoroethylene (PTFE) products, which can occur in several forms.

The PTFE used to make the semi-finished product is described in ISO 20568-1. The PTFE used to make the semi-finished product are virgin, reprocessed or recycled resin. The addition of up to 1,5 % by mass of pigment or colorant can be used.

2 Normative references

The following documents are referred to in the text 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 472, *Plastics — Vocabulary*

ISO 20568-1, *Plastics — Fluoropolymer dispersions and moulding and extrusion materials — Part 1: Designation system and basis for specifications*

ISO 13000-2, *Plastics — Polytetrafluoroethylene (PTFE) semi-finished products — Part 2: Preparation of test specimens and determination of properties*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 472, ISO 20568-1 and the following apply.

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/

3.1
moulded basic shape
semi-finished product (3.2) made by preforming and sintering without additional processing

3.2
semi-finished product
material, in the form of *skived tape* (3.3), sheets, rods, tubes, tubing, *moulded basic shapes* (3.1) or special shapes, that is produced for use either directly without further fabrication or in fabricating end use products, or both

3.3
skived tape
film or sheet prepared by cutting, slicing or shaving

Note 1 to entry: The term “veneered tape” is deprecated.

4 Requirements for PTFE semi-finished products

4.1 General

After considering the specific shape, dimensions and dimensional tolerances, the primary basis for designating a semi-finished product of PTFE is the tensile strength and percentage elongation at break of the product. Tests to determine the values for designation shall be run in accordance with the methods in ISO 13000-2. The semi-finished product is identified as “type P” for as-processed or “type S” for stabilized and also can be designated as “type E” with specified electrical properties when required for a particular application. The exclusion of the use of reprocessed or recycled material shall be specified if needed in order to meet special customer requirements. The values required for other properties are given in their respective subclauses.

4.2 Dimensions and dimensional tolerances

4.2.1 General

Dimensional tolerances shall be measured at 23 °C ± 2 °C.

4.2.2 Skived tape, skived sheet or film

See Table 1.

Table 1 — Code-letter of skived tape, skived sheet or film

Code-letter	Thickness	Tolerance
a	< 0,1 mm	$^{+0,01}_{0}$ mm
b	≥ 0,1 mm	$^{+10}_{0}$ %

The tolerance for width is $^{+3}_{0}$ %, with a maximum of 30 mm. For slit skived tape, the exact width shall be agreed upon between purchaser and supplier.

The tolerance for length is $^{+2}_{0}$ %.

4.2.3 Moulded sheet

For tolerance for moulded sheet, see Table 2.

Table 2 — Code-letter of moulded sheet

Code-letter	Thickness	Tolerance
a	< 5 mm	$^{+0,75}_{0}$ mm
b	≥ 5 mm	$^{+15}_{0}$ %

The length and width tolerance shall be $^{+3}_{0}$ %.