

ICS 83.080.20
CCS G 31



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 34691.2-2017

**Plastics -- Thermoplastic polyester (TP) moulding and extrusion
materials -- Part 2: Preparation of test specimens and
determination of properties
(English Translation)**

Issued on: November 1, 2017

Implemented on: May 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Preparation of specimens...	7
4 Conditioning of specimens...	8
5 Performance determination...	8

1 Scope

This Part of GB/T34691 specifies the methods and conditions for the preparation of test specimens and the determination of properties of thermoplastic polyester (TP) molding and extrusion materials. This part also specifies the requirements for the pretreatment of test materials and the conditioning of test specimens before testing.

This Part lists the appropriate and necessary properties and test methods for characterizing thermoplastic polyester (TP) molding and extrusion materials. These properties are selected from the general test methods in GB/T 19467.1-2004. This Part also lists other test methods that are widely used or have special significance for molding and extrusion materials.

In order to ensure the reproducibility and repeatability of the test results, the methods of specimen preparation and state adjustment, as well as the specified specimen size and test method specified in this part may be used. The test data obtained using specimens prepared under different conditions or using specimens of different sizes may be inconsistent.

This standard applies to homopolymer and copolymer thermoplastic polyesters.

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.

GB/T 1033.1-2008, Plastics -- Methods for determining the density of non-cellular plastics -- Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1:2004, IDT)

GB/T 1033.2-2010, Plastics -- Methods for determining the density of non-cellular plastics --

Part 2: Density gradient column method (ISO 1183-2: 2004, MOD)

GB/T 1033.3-2010, Plastics -- Methods for determining the density of non-cellular plastics --
Part 3: Gas pycnometer method (ISO 1183-3:1999, IDT)

GB/T 19466.2-2004, Plastics -- Differential scanning calorimetry (DSC) -- Part 2:
Determination of glass transition temperature (ISO 11357-2:1999, IDT)

GB/T 19466.3-2004, Plastics -- Differential scanning calorimetry (DSC) -- Part 3:
Determination of temperature and enthalpy of melting and crystallization (ISO
11357-3:1999, IDT)

GB/T 19467.1-2004, Plastics -- Acquisition and presentation of comparable single- point
data -- Part 1: Moulding materials (ISO 10350-1:1998, MOD)

ISO 11359-2:1999, Plastics - Thermomechanical analysis (TMA) - Part 2:

Determination of coefficient of linear thermal expansion and glass transition temperature

ISO 20753:2008, Plastics - Test specimens

IEC 60296:2012, Specification for unused mineral insulating oils for transformers and
switchgear)

3.1 General

The specimens shall be prepared by injection molding. The same processing conditions
and steps shall be used to prepare the specimens.

Before injection molding, sample materials should be kept in a moisture-proof container.

The water content of the filled or reinforced sample material is expressed as the mass
fraction of the water content to the total mass of the mixed ingredients.

NOTE: At present, GB/T 17037.1 for injection molding specimens is being revised. It only defines
the injection molding conditions. The specimen dimensions refer to ISO 20753 (China is adopting
this international standard to formulate the corresponding national standard in China). For other
national standards that use different names for the same specimen type, their specimen names will
be consistent with ISO 20753 after revision. Many test standards specify specimens or refer to GB/T
11997 and GB/T 17037 series standards. ISO 20753 is also referenced during revision.

3.2 Material handling before molding

Before molding, take appropriate measures to ensure that the mass fraction of water in the
sample material does not exceed 0.02%. For filled materials, this limit refers to the mass
fraction of the total mass of the thermoplastic and filler compound.

To ensure low water content, it is recommended to introduce a suitable gas (such as dry air, nitrogen or argon) into the injection molding machine feed hopper to keep the sample material in a gas atmosphere. Using a dehumidified feed hopper can give better

.....