

ICS 59.060.20

CCS W 50



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

GB/T 45710-2025

**Determination of oligomers in polyethylene terephthalate fibre
and chip - Advanced polymer chromatography (APC)**

聚对苯二甲酸乙二醇酯纤维及切片中低聚物的测定 高效聚合物色谱法 (APC)

Issued on: May 30, 2025

Implemented on: December 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed and coordinated by the National Technical Committee on Standardization of Chemical Fibers (SAC/TC586).

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Polyethylene terephthalate fiber and chips Determination of polymers by high performance

polymer chromatography (APC) Warning---People who use this document should have practical experience in formal laboratory work. This document does not address all possible safety issues.

The user is responsible for taking appropriate safety and health measures and ensuring compliance with the conditions stipulated in relevant national laws and regulations.

For certain solvents, please read the Material Safety Data Sheet (SDS) carefully.

1 Scope

This document describes a test method for the determination of oligomer content in polyethylene terephthalate (PET) by high performance polymer chromatography.

This document is applicable to polyethylene terephthalate fibers and chips, and other PET products shall be implemented accordingly.

2 Normative references

GB/T 4146

3 Terms and definitions

GB/T 4146 (all parts) and the following terms and definitions apply to this document.

3.1

Polyethylene terephthalate (PET) is a polymer with a degree of polymerization of no more than 10.

3.2

Based on the different molecular sizes of polymers, small particles and large-pore ethylene bridge hybrid particles are used to fill high stability, high resolution and Low diffusion columns are used to efficiently separate polymer molecular components.

4 Principle

Dissolve the PET sample with hexafluoroisopropanol, slowly add tetrahydrofuran to reprecipitate the PET macromolecules in the solution, and filter the solution.

Afterwards, the oligomer components were separated by high performance polymer chromatography, and the oligomer content in the sample was calculated based on the component concentration and its peak area. content.

5 Reagents or materials

5.1 Hexafluoroisopropanol. CAS No. 920-66-1, purity $\geq 99.5\%$.

5.2 Tetrahydrofuran. CAS No. 109-99-9, chromatographic grade.

5.3 Standard sample of fiber-grade polyester chips (GSB10-1332-F05).

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