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

GB/T 2412-2026

Replacing GB/T 2412-2008

**Plastics - Determination of isotactic index of polypropylene
(PP) thermoplastics - Extraction method**

塑料 聚丙烯 (PP) 热塑性塑料等规指数的测定 萃取法
(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document replaces GB/T 2412-2008 "Determination of the isotactic index of thermoplastic plastics such as polypropylene (PP) and propylene copolymers", and is consistent with...

Compared with GB/T 2412-2008, apart from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2008 edition);
- b) The terminology and definition of "isotactic index" have been added (see 3.1);
- c) A filter paper cassette and its description have been added (see 5.4);
- d) The recommended screen frame size has been increased (see 6.2);
- e) The size of the glass frit funnel was increased (see 6.3);
- f) Added "Filter paper cartridge for individual use" and its description (see 6.3);
- g) A low-temperature freezer and its description have been added (see 6.6);
- h) A low-temperature freezing chamber was added for the processing of granular materials (see Chapter 7);
- i) Added "Filter paper cassette for individual use" and changed the drying temperature of the oven (see 8.2, 6.3 in the 2008 edition);
- j) The descriptions of "m₀, m₁, and m₂" in the formulas have been changed (see 9.1);
- k) The requirements for result representation have been changed (see 9.2, 7.2 in the 2008 edition);
- l) Increased precision (see Chapter 10);
- m) The test report has been amended (see Chapter 11, Chapter 8 of the 2008 edition).

This document is modified to adopt ISO 9113:2019 "Plastics - Polypropylene (PP) and propylene copolymers - Determination of isotactic index of thermoplastics".

See Appendix A.

This document differs significantly from ISO 9113:2019. The relevant clauses are indicated in vertical single-line margins.

The lines (l) are marked. A summary of these technical differences and their causes can be found in Appendix B.

The following editorial changes have been made to this document.

---To harmonize with existing standards, the standard name has been changed to "Determination of the Isotactic Index of Polypropylene (PP) Thermoplastic Plastics".

"The Method of Taking"

---ISO 19069-1 has been replaced by GB/T 2546.1 (see Chapter 1) for informational purposes;

---Informative reference to GB/T 6379.2 has been added (see note 1 in Chapter 10);

---Appendix A (informative) "Comparison of Structure Numbers in this Document with ISO 9113:2019" has been added;

---Added Appendix B (Informative) "Technical Differences between this Document and ISO 9113:2019 and the Reasons Therefor".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Plastics Standardization (SAC/TC15).

1 Scope

This document describes the determination of the percentage of polypropylene by mass that is insoluble in boiling n-heptane, relative to the sample mass, under standard test conditions.

method.

This document applies to propylene homopolymers (PP-H) described in GB/T 2546.1, propylene impact copolymers (PP-B), and propylene random copolymers.

Polypropylene materials using copolymer (PP-R) are for reference use.

This document applies to base polymers, not mixtures.

This document does not apply to polypropylene materials modified with colorants, fillers, etc.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 8170 Rules for rounding off numerical values and the representation and

determination of limiting values

3 Terms and Definitions

The following terms and definitions apply to this document.

isotactic index

The mass fraction of the polypropylene sample that is insoluble in boiling n-heptane.

4 Method Overview

A certain amount of sample was placed in a Soxhlet extractor and extracted by reflux with boiling n-heptane. The mass of the sample before and after extraction was determined, and the weight was calculated.

The mass fraction of polypropylene that is insoluble in n-heptane is the isotactic index.

5 Reagents and Materials

5.1

n-Heptane. Analytical grade, free of aromatic hydrocarbons.

5.2

Acetone. analytical grade.

5.3

Dry ice or liquid nitrogen.

5.4

Filter paper cassette. The porosity should be moderate enough to allow for the reflux of n-heptane without causing loss of polypropylene powder. It should not soften or decompose during the extraction process.

And produce debris.