

Plastics - Determination of average molecular mass and molecular mass distribution of polymers using size-exclusion chromatography - Part 5: Method using light-scattering detection (ISO 16014-5:2012)

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English Version

Plastics - Determination of average molecular mass and
molecular mass distribution of polymers using size-exclusion
chromatography - Part 5: Method using light-scattering detection
(ISO 16014-5:2012)

Plastiques - Détermination de la masse moléculaire
moyenne et de la distribution des masses moléculaires de
polymères par chromatographie d'exclusion stérique -
Partie 5: Méthode utilisant la détection par diffusion
lumineuse (ISO 16014-5:2012)

Kunststoffe - Bestimmung der durchschnittlichen Molmasse
und der Molmassenverteilung von Polymeren mittels
Gelpermeationschromatographie - Teil 5:
Lichtstreuendetektionsverfahren (ISO 16014-5:2012)

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 16014-5:2012) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 139 "Paints and varnishes" the secretariat of which is held by DIN.

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Endorsement notice

The text of ISO 16014-5:2012 has been approved by CEN as a EN ISO 16014-5:2012 without any modification.

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Plastics — Determination of average molecular mass and molecular mass distribution of polymers using size-exclusion chromatography —

Part 5: Method using light-scattering detection

1 Scope

This part of ISO 16014 specifies a general method for determining the average molecular mass and the molecular mass distribution of polymers using SEC-LS, i.e. size-exclusion chromatography coupled with light-scattering detection. The average molecular mass and the molecular mass distribution are calculated from molecular mass data and mass concentrations determined continuously with elution time. The molecular mass at each elution time is determined absolutely by combining a light-scattering detector with a concentration-sensitive detector. Therefore, SEC-LS is classified as an absolute method.

For the applicability of the method, see ISO 16014-1:2012, Clause A.1.

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 16014-1:2012, *Plastics — Determination of average molecular mass and molecular mass distribution of polymers using size-exclusion chromatography — Part 1: General principles*

ISO 16014-2, *Plastics — Determination of average molecular mass and molecular mass distribution of polymers using size-exclusion chromatography — Part 2: Universal calibration method*

ISO 16014-3:2012, *Plastics — Determination of average molecular mass and molecular mass distribution of polymers using size-exclusion chromatography — Part 3: Low-temperature method*

ISO 16014-4:2012, *Plastics — Determination of average molecular mass and molecular mass distribution of polymers using size-exclusion chromatography — Part 4: High-temperature method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 472 and ISO 16014-1 and the following apply.

3.1

light-scattering detection

LS detection

a technique for determining the mass or size of polymer molecules in solution by measuring the light scattered by the polymer molecules