ICS 83.080.01 SLOVENSKÁ TECHNICKÁ NORMA Január 2019

STN	**Plasty** **Stanovenie molekulovej hmotnosti a distribúcie molekulových hmotností polymérov hmotnostnou spektrometriou v režime laserom asistovanej desorpcie/ionizácie matrice s časom letu (MALDI-TOF-MS) (ISO 10927: 2018)**	**STN** **EN ISO 10927** 64 0240

Plastics - Determination of the molecular mass and molecular mass distribution of polymer species by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF-MS) (ISO 10927:2018)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/18

Obsahuje: EN ISO 10927:2018, ISO 10927:2018

Oznámením tejto normy sa ruší
STN EN ISO 10927 (64 0240) zo septembra 2011

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 10927

July 2018

ICS 83.080.01

Supersedes EN ISO 10927:2011

English Version

Plastics - Determination of the molecular mass and molecular mass distribution of polymer species by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF-MS) (ISO 10927:2018)

Plastiques - Détermination de la masse moléculaire et de la distribution des masses moléculaires des polymères par spectrométrie de masse, à temps de vol, après désorption/ionisation laser assistée par matrice (SM-MALDI-TOF) (ISO 10927:2018)

Kunststoffe - Bestimmung der Molmasse und Molmassenverteilung von polymeren Species durch matrixunterstütze Laser-Desorptions/Ionisations-Flugzeit-Massenspektrometrie (MALDI-TOF-MS) (ISO 10927:2018)

This European Standard was approved by CEN on 28 June 2018.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 10927:2018) 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.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2019, and conflicting national standards shall be withdrawn at the latest by January 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 10927:2018 has been approved by CEN as EN ISO 10927:2018 without any modification.

INTERNATIONAL STANDARD

ISO 10927

Second edition
2018-06

Plastics — Determination of the molecular mass and molecular mass distribution of polymer species by matrix-assisted laser desorption/ ionization time-of-flight mass spectrometry (MALDI-TOF-MS)

Plastiques — Détermination de la masse moléculaire et de la distribution des masses moléculaires des polymères par spectrométrie de masse, à temps de vol, après désorption/ionisation laser assistée par matrice (SM-MALDI-TOF)

Reference number
ISO 10927:2018(E)

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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).

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 61, *Plastics,* Subcommittee SC 5, *Physical-chemical properties.*

This second edition cancels and replaces the first edition (ISO 10927:2011), which has been technically revised to update Figure 1 and 6.7 on data handling.

Introduction

The molecular mass and molecular mass distribution of a synthetic polymer are fundamental characteristics that result from the polymerization process. They may be used for a wide variety of correlations for fundamental studies and for processing and product applications. Determination of the molecular mass and molecular mass distribution is used for quality control of polymers and for specification purposes in the commerce of polymers. The comparability of MALDI-TOF-MS results obtained in different laboratories can be ensured by using standardized conditions of measurement, identical samples and identical matrix preparation methods. The classification of MALDI-TOF-MS as an equitable (standardized) method compared with other established methods of polymer characterization could result in a significant increase in the use of MALDI-TOF-MS.

INTERNATIONAL STANDARD **ISO 10927:2018(E)**

Plastics — Determination of the molecular mass and molecular mass distribution of polymer species by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF-MS)

1 Scope

This document specifies a general method for determining the average molecular mass and molecular mass distribution of polymers (see Reference [1]) from 2 000 g · mol^{-1} to 20 000 g · mol^{-1} by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF-MS).

The average molecular masses and molecular mass distributions are calculated from a calibration curve constructed using synthetic-polymer and/or biopolymer standards. This method is therefore classified as a relative method.

The method is not applicable to polyolefins or to polymers with a polydispersity >1,2.

2 Normative references

The following documents are referred to in the text in such a way 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*

