

# DIN EN ISO 10927:2018-10 (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) (ISO 10927:2018)

---

### Contents

	Page
European foreword .....	3
Foreword .....	4
Introduction .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Principle .....	7
5 Reagents .....	7
5.1 Matrices .....	7
5.2 Solvents .....	7
5.3 Salts .....	8
5.4 Molecular mass standards .....	8
6 Apparatus .....	8
6.1 General .....	8
6.2 Sample introduction chamber/target .....	8
6.3 Laser source .....	9
6.4 Flight tube .....	9
6.5 Detector .....	9
6.6 Data recording .....	9
6.7 Data handling .....	10
7 Procedure .....	10
7.1 General .....	10
7.2 Sample preparation .....	10
7.2.1 General .....	10
7.2.2 Preparation of polymer/matrix/salt solutions .....	10
7.2.3 Deposition of the sample on the sample plate (target) .....	10
7.2.4 Preparation and spotting of biopolymer/matrix solutions .....	11
7.3 Instrument settings .....	11
7.4 Recording spectra .....	12
8 Data acquisition and processing .....	12
8.1 General .....	12
8.2 Calibration .....	13
8.2.1 General .....	13
8.2.2 Calibration of mass axis using synthetic-polymer standards .....	13
8.2.3 Calibration of mass axis using biopolymer standards .....	13
8.2.4 Self-calibration method .....	13
8.3 Generation of calibration curve .....	13
8.4 Signal intensity axis calibration .....	13

<b>9</b>	<b>Expression of results.....</b>	<b>14</b>
9.1	Calculation of molecular mass distribution.....	14
9.2	Calculation of the average molecular masses.....	14
<b>10</b>	<b>Precision .....</b>	<b>14</b>
<b>11</b>	<b>Test report.....</b>	<b>14</b>
	<b>Annex A (normative) Calibrants.....</b>	<b>16</b>
	<b>Annex B (informative) Precision data.....</b>	<b>17</b>
	<b>Bibliography.....</b>	<b>18</b>