

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 |

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