

ISO 2561:2023-11 (E)

Plastics - Determination of residual styrene monomer in polystyrene (PS) and impact-resistant polystyrene (PS-I) by gas chromatography

| Contents | Page |
|---|-----------|
| Foreword..... | iv |
| 1 Scope..... | 1 |
| 2 Normative references..... | 1 |
| 3 Terms and definitions..... | 1 |
| 4 Principle..... | 1 |
| 5 Reagents and materials..... | 1 |
| 5.1 Internal standard..... | 2 |
| 5.2 Solvent..... | 2 |
| 5.3 Precipitator..... | 2 |
| 5.4 Aromatic hydrocarbons..... | 2 |
| 5.5 Carrier gases and fuel gases for gas chromatograph..... | 2 |
| 6 Apparatus..... | 2 |
| 6.1 General..... | 2 |
| 6.2 Gas chromatograph..... | 2 |
| 6.3 Data processor..... | 3 |
| 6.4 Sample injection syringe..... | 3 |
| 6.5 Analytical balance..... | 3 |
| 6.6 Volumetric flasks..... | 3 |
| 6.7 Headspace Vials..... | 3 |
| 7 Preparation of sample..... | 3 |
| 8 Procedure..... | 3 |
| 8.1 General..... | 3 |
| 8.2 Preparation of internal-standard solution..... | 3 |
| 8.3 Preparation of sample solution for sample introducing option A..... | 3 |
| 8.4 Preparation of sample solution for sample introducing option B..... | 3 |
| 8.5 Preparation of sample solution for sample introducing option C..... | 4 |
| 8.6 Preparation of calibration solutions..... | 4 |
| 8.6.1 General..... | 4 |
| 8.6.2 Calibration solutions for sample introducing option A..... | 4 |
| 8.6.3 Calibration solutions for sample introducing option B..... | 4 |
| 8.6.4 Calibration solution for sample introducing option C..... | 4 |
| 8.7 Gas-chromatographic procedure..... | 5 |
| 8.7.1 Gas-chromatograph operating conditions..... | 5 |
| 8.7.2 Recording the gas chromatograms of sample solutions and calibration solutions..... | 6 |
| 8.7.3 Evaluation of the gas-chromatographic peaks..... | 6 |
| 9 Expression of results..... | 7 |
| 9.1 Calculation of results from a calibration graph..... | 7 |
| 9.2 Acceptability of results and measurement sensitivity..... | 8 |
| 10 Test report..... | 8 |
| Annex A (informative) Examples of typical test conditions..... | 9 |
| Annex B (informative) Correlation between mass of aromatic hydrocarbon in calibration solution and concentration of aromatic hydrocarbon in sample solution for typical calibration solutions..... | 13 |