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**