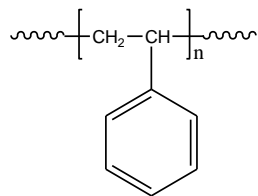


Sample Name: Polystyrene

SEC of Homopolymer:

Sample #: P5718-S

Structure:

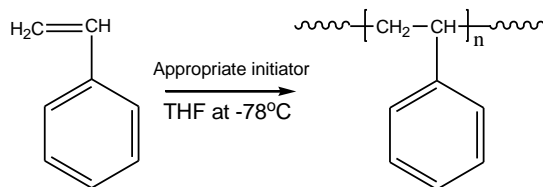


Composition:

Mn x 10 ³	PDI
170.0	1.07

Synthesis Procedure:

Polystyrene is obtained by living anionic polymerization of styrene as illustrated below:



Characterization:

The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

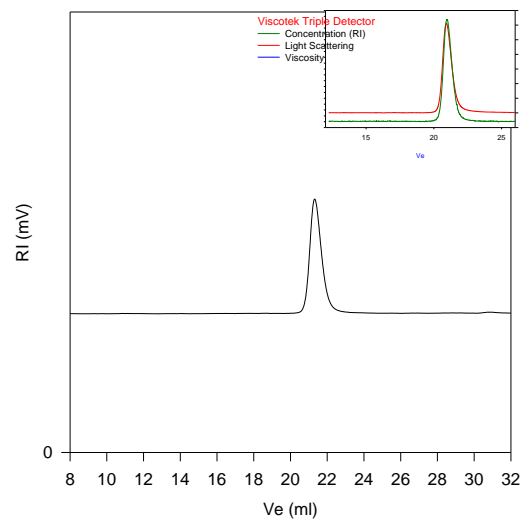
Thermal analysis:

Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T_g) has been considered.

Solubility:

Polystyrene is soluble in DMF, THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes.

P5718-S



Size Exclusion Chromatography of Poly styrene:

— M_n = 170,000, M_w = 182,000, M_w/M_n = 1.07
Solution Viscosity in THF at 35 °C: 0.890 dl/g
dn/dc in THF at 35 °C: 0.185 ml/g
R_{gw}: 18.00 nm

T_g of polystyrene as function of molecular weight

