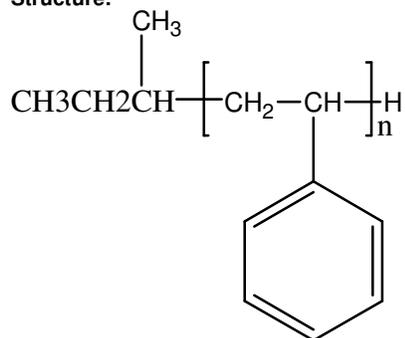


Sample Name: Polystyrene

Sample #: P4710-S

Structure:

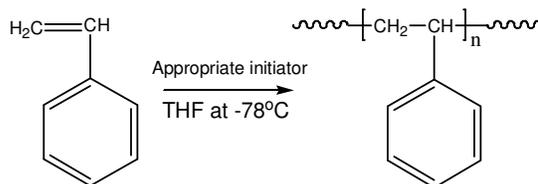


Composition:

Mn x 10 ³	PDI
75.0	1.05

Synthesis Procedure:

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



Characterization:

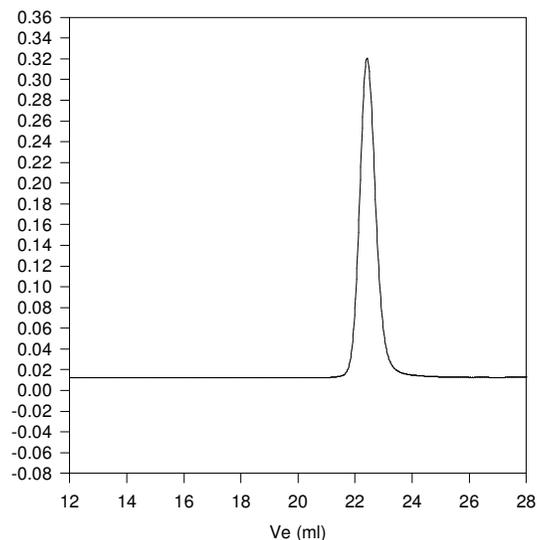
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

Solubility:

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

SEC of Homopolymer

P4710-S



Size exclusion chromatograph of polystyrene:

M_n=75000, M_w=78500, PI=1.05

Solution Viscosity in THF at 35 °C: 0.525dl/g

Radius of Gyration: 10.89nm

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.

T_g of polystyrene as function of molecular weight

