

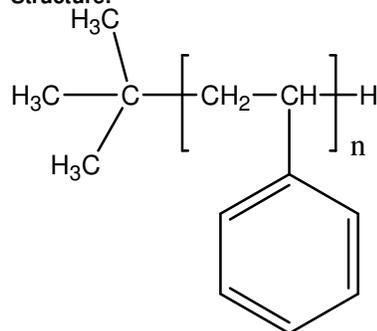
SEC of Homopolymer

P4687-S

Sample Name: Polystyrene

Sample #: P4687-S

Structure:

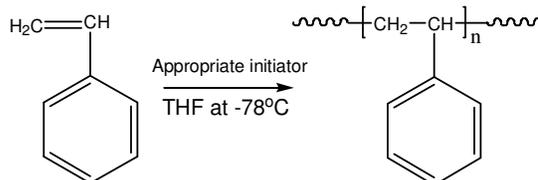


Composition:

$M_n \times 10^3$ (HNMR)	PDI
3.2	1.2

Synthesis Procedure:

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

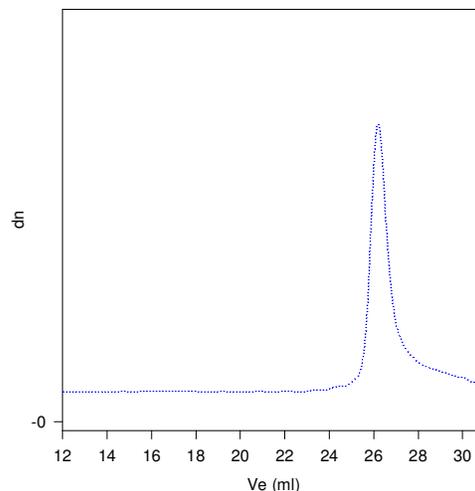


Characterization:

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 CHCl_3 . It precipitates from methanol, ethanol, water and hexanes.

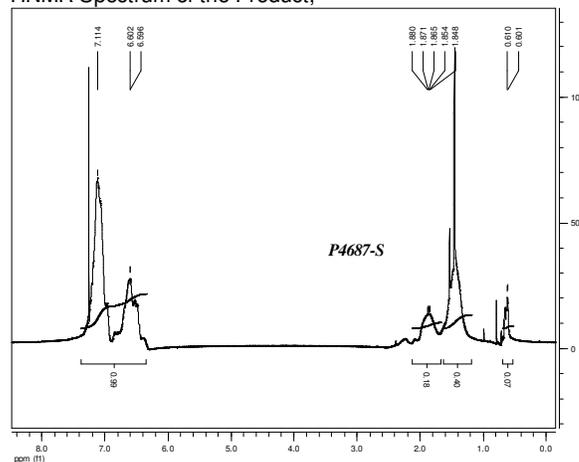


Size Exclusion Chromatography of polystyrene

$M_n=3200$, $M_w=3800$, $M_w/M_n=1.2$

Mn: from ^1H NMR: 3400

HNMR Spectrum of the Product:



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

T_g of polystyrene as function of molecular weight

