

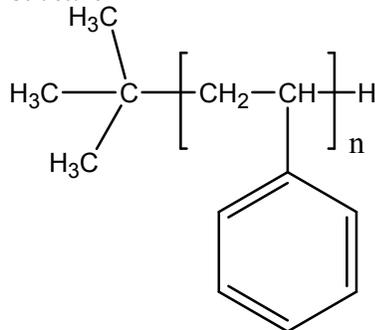
# Sample Name: Polystyrene

## SEC of Homopolymer

P4691-S

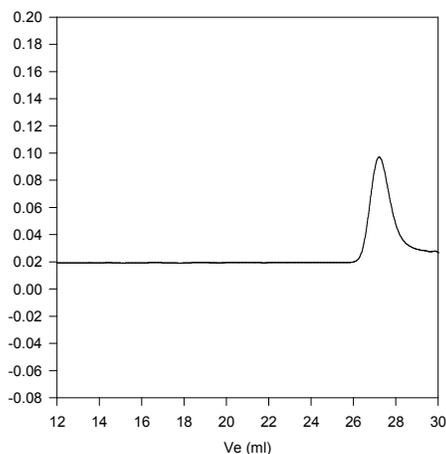
Sample #: P4691-S

Structure:



Composition:

$M_n \times 10^3$ (HNMR)	PDI
1.6 (1.7)	1.16



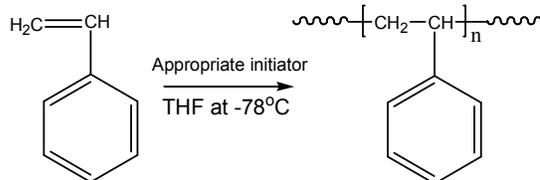
Size exclusion chromatograph of polystyrene:

$M_n=1600$ ,  $M_w=1850$ ,  $PI=1.16$

$M_n$  by HNMR: 1700

Synthesis Procedure:

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



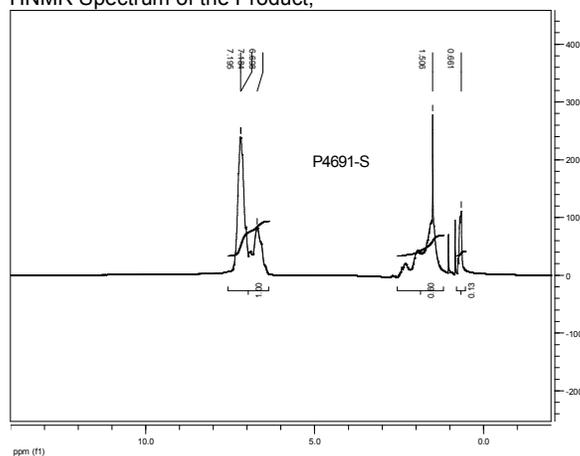
Characterization:

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  $\text{CHCl}_3$ . It precipitates from methanol, ethanol, water and hexanes.

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

