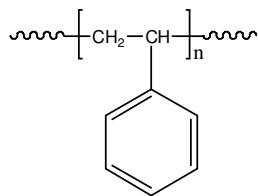


Sample Name: Polystyrene

Sample #: p4436-S

Structure:

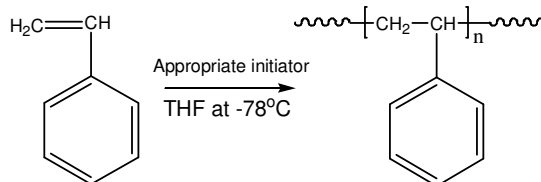


Composition:

$M_n \times 10^3$	PDI
820.0	1.14

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.

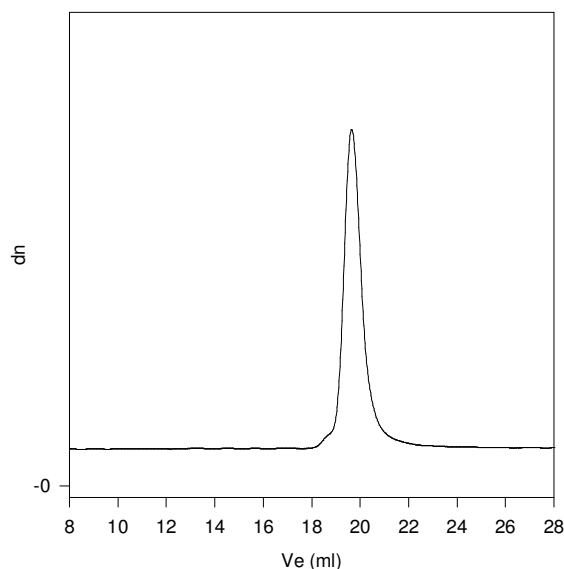
Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of $10^\circ\text{C}/\text{min}$. The inflection glass transition temperature (T_g) has been considered.

Solubility:

Polystyrene is soluble in DMF, THF, toluene and CHCl_3 . It precipitates from methanol, ethanol, water and hexanes.

SEC of Homopolymer

P4436-S



Size Exclusion Chromatography of polystyrene

$M_n=820,000$, $M_w=935,000$, $M_w/M_n=1.14$

T_g of polystyrene as function of molecular weight

