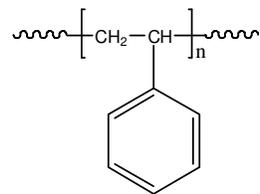


Sample Name: Polystyrene

Sample #: P1509-S

Structure:

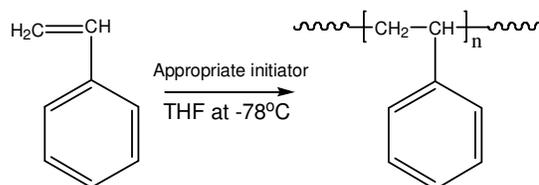


Composition:

$M_n \times 10^3$	PDI
73.5	1.04

Synthesis Procedure:

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



Characterization:

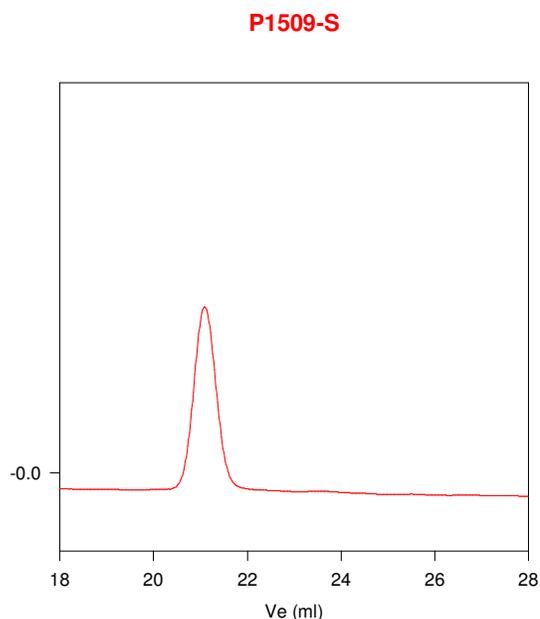
The molecular weight and polydispersity index (PDI) were obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with 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 $10^\circ C/min$. 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:



Size exclusion chromatograph of polystyrene:

$M_n=73500$, $M_w=76500$, $PI=1.04$

solution Viscosity in THF at $30^\circ C$: $0.458 dl/g$ and radius of gyration: 10.47 nm obtained by Viscotek detectors

T_g of polystyrene as function of molecular weight

