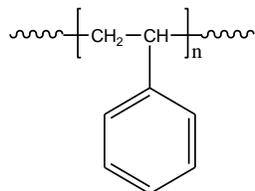


## Sample Name: Polystyrene

Sample #: P8069-S

### Structure:

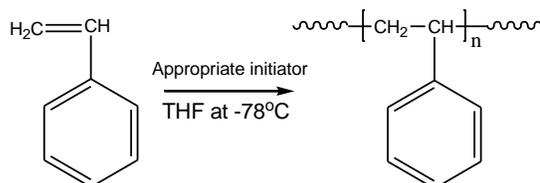


### Composition:

$M_n \times 10^3$	PDI
76.0	1.06

### 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:

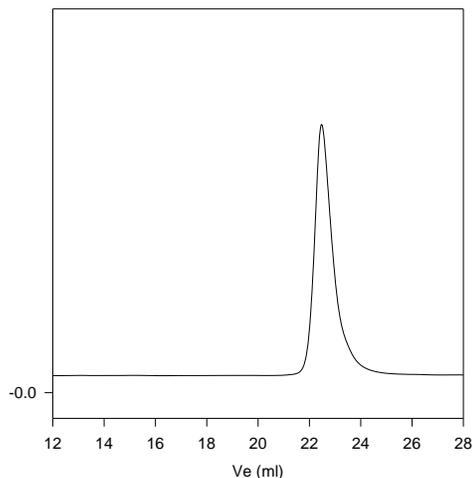
Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of  $10^\circ C/min$ . The inflection glass transition temperature ( $T_g$ ) has been considered.

### Solubility:

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

### SEC of Homopolymer:

P8069-S



Size exclusion chromatograph of polystyrene:

$M_n=76000$   $M_w=80500$ ,  $PI=1.05$

Light scattering data: solution Intrinsic Viscosity in THF at  $30^\circ C$ :  $0.519 dl/g$   
Radius of Gyration:  $11.15$  nm

### $T_g$ of polystyrene as function of molecular weight

