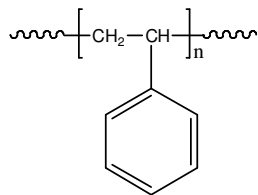


## Sample Name: Polystyrene Broad Distribution

Sample #: P3345A-S

### Structure:

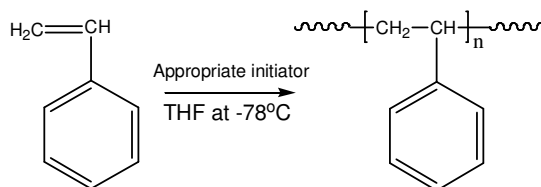


### Composition:

$M_n \times 10^3$	PDI
980.0	1.6

### 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.

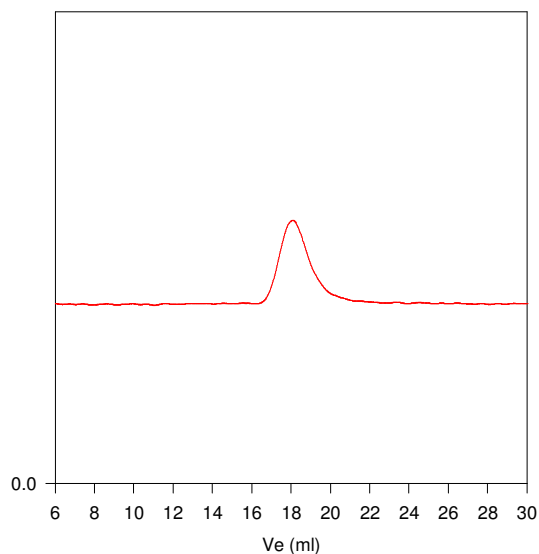
Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of  $10^\circ\text{C/min}$ . The inflection glass transition temperature ( $T_g$ ) has been considered.

### Solubility:

Polystyrene is soluble in DMF, THF, toluene and  $\text{CHCl}_3$ . It precipitates from methanol, ethanol, water and hexanes.

### SEC of Homopolymer

**P3345A-S**



Size exclusion chromatograph of polystyrene:

$M_n=980,000$ ,  $M_w=1568,000$   $PI=1.6$

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

