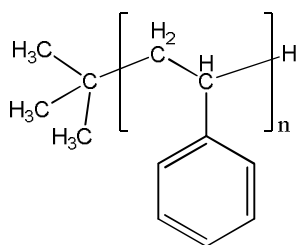


Sample Name: **Polystyrene**

Sample #: **P5138-S**

Structure:

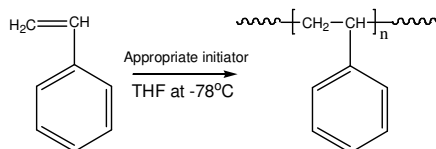


Composition:

$M_n \times 10^3$ (g/mol)	M_w/M_n
1.5	1.25
Glass transition temperature:	$T_g = 82^\circ\text{C}$

Synthesis procedure:

Polystyrene was obtained by living anionic polymerization of styrene. The scheme of reaction is shown below:



Characterization:

The molecular weight and polydispersity index (M_w/M_n) were obtained by size exclusion chromatography (SEC) using THF as an eluent. SEC analysis was performed on a Varian liquid chromatograph equipped with three SEC columns from Supelco (G6000-4000-2000 HXL) and triple detectors (refractive index, UV and light scattering detectors) from Viscotek Co.

Thermal Analysis:

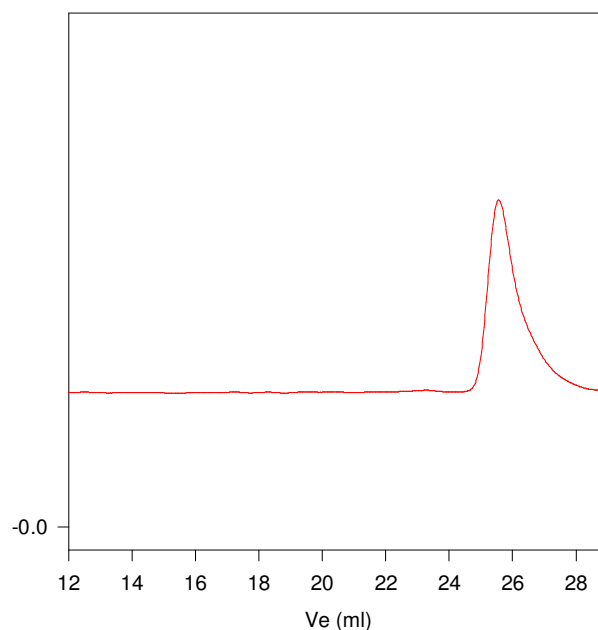
Thermal analysis was performed on TA Instruments Q100 differential scanning calorimeter (DSC) under a nitrogen atmosphere. The glass transition temperature (T_g) of the polymer was measured at a scan rate of $10^\circ\text{C}/\text{min}$ shortly after creating thermal history of the sample.

Solubility:

Polystyrene is soluble in DMF, THF, toluene, chloroform; and it precipitates from methanol, ethanol, hexanes, and water.

SEC elugram of the polymer:

P5138-S



Size exclusion chromatograph of polystyrene:

$M_n=1520$, $M_w=1900$, $PI=1.25$

DSC thermogram (2nd heating run, $10^\circ/\text{min}$):

