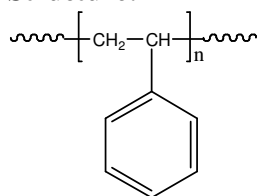


Sample Name: **Polystyrene**

Sample #: **P934-S**

**Structure:**

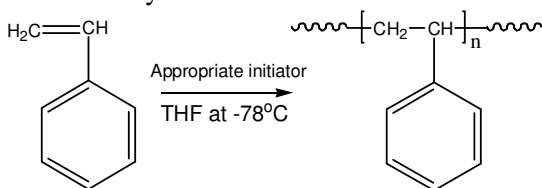


**Composition:**

Mn x 10 <sup>3</sup>	PDI
237.0	1.8

**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.

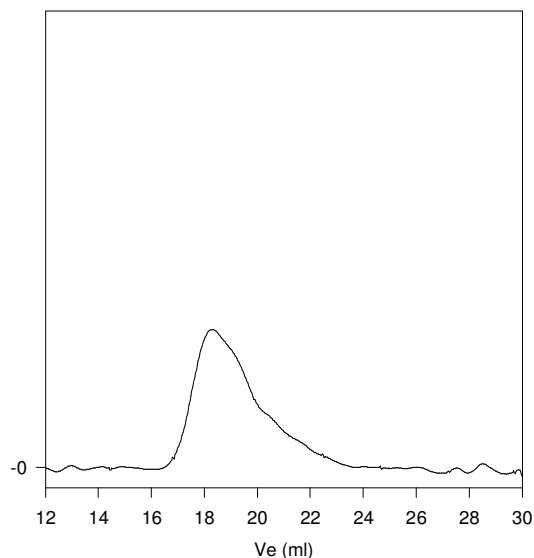
Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature ( $T_g$ ) has been considered.

**Solubility:**

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

**SEC of Homopolymer:**

**P934-S**



Size exclusion chromatograph of Polystyrene:

$M_n=237,000$ ,  $M_w=439,000$ ,  $PI=1.8$

**DSC**

$T_g$  of polystyrene as function of molecular weight

