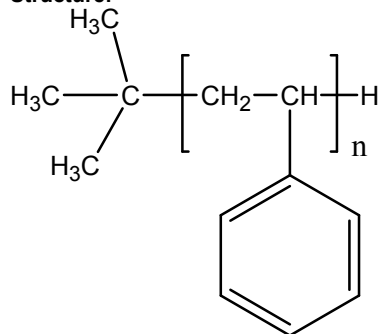


Sample #: **P4691-S**

**Structure:**

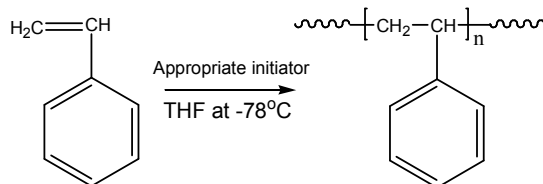


**Composition:**

$M_n \times 10^3$ (HNMR)	PDI
1.6 (1.7)	1.16

### Synthesis Procedure:

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

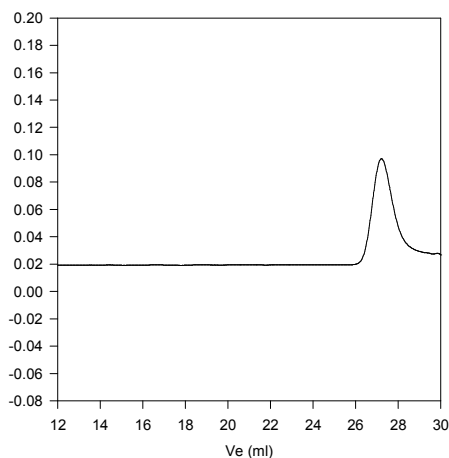


**Characterization:**

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.

**Solubility:**

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

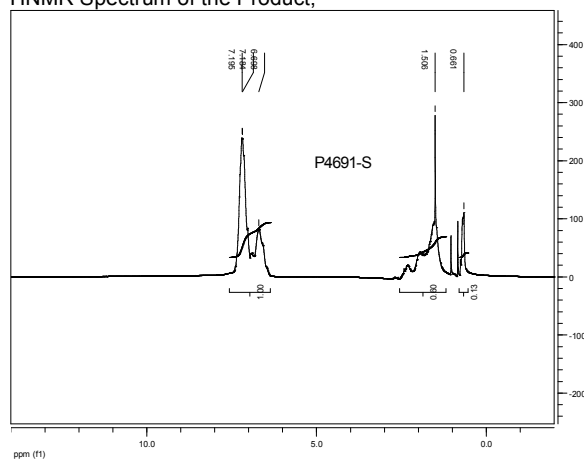


Size exclusion chromatograph of polystyrene:

M<sub>w</sub>=1600, M<sub>u</sub>=1850, PI=1.16

Mn by HNMR: 1700

### HNMR Spectrum of the Product;



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.

### T<sub>g</sub> of polystyrene as function of molecular weight

