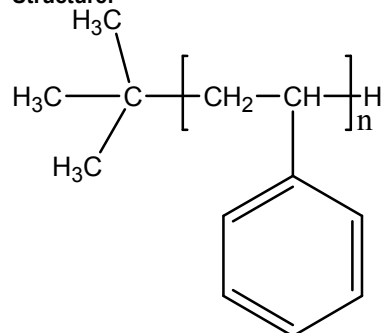


sample Name: **Polystyrene**

Sample #: **P4688-S**

Structure:

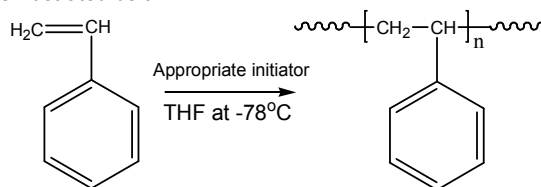


Composition:

| $M_n \times 10^3$ (HNMR) | PDI |
|-----------------------------|------|
| 1.6 (1.8) | 1.13 |

Synthesis Procedure:

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



Characterization:

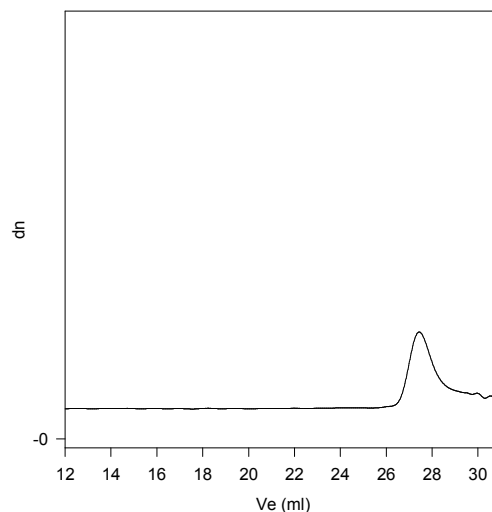
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple detectors from Viscotek Co.

Solubility:

Polystyrene is soluble in DMF, THF, toluene and CHCl₃. It precipitates from methanol, ethanol, water and hexanes.

SEC of Homopolymer

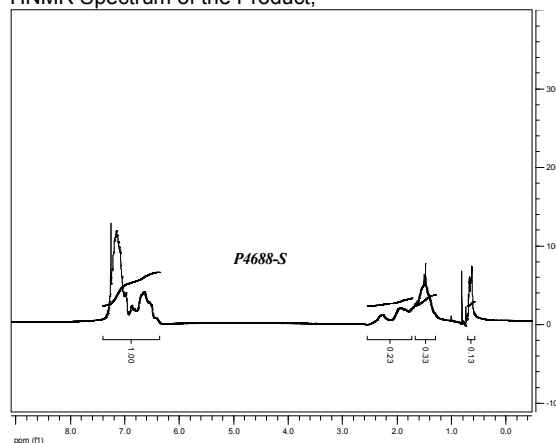
P4688-S



Size Exclusion Chromatography of polystyrene

$M_n=1600$, $M_w=1800$, $M_w/M_n=1.13$ by HNMR M_n : 1800

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_g of polystyrene as function of molecular weight

