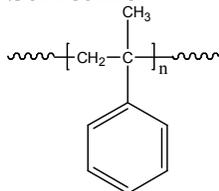


Sample Name: Poly(α -methyl styrene)

Sample #: P51- α MeS

Structure:

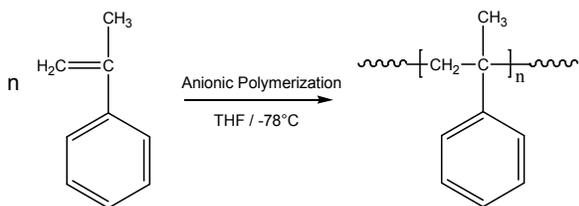


Composition:

$M_n \times 10^3$	PDI
126.0	1.06
T_g ($^{\circ}\text{C}$)	169

Synthesis Procedure:

Poly(α -methyl styrene) is synthesized by living anionic polymerization of α -methyl styrene and the reaction scheme is shown below.



Characterization:

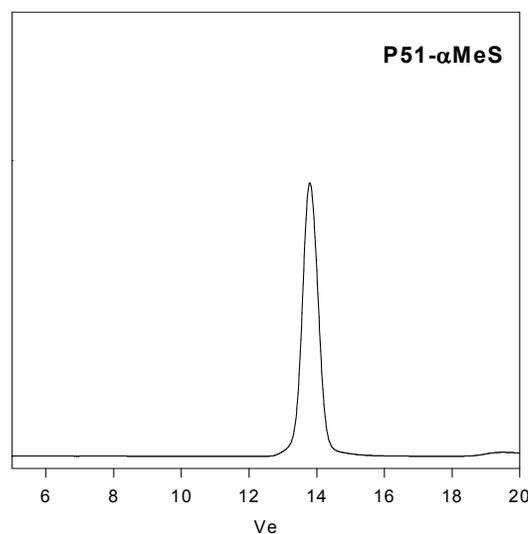
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography (SEC) in THF. SEC analysis was performed on a Varian liquid chromatograph equipped with refractive and UV light scattering detectors. Three SEC columns from Supelco (G6000-4000-2000 HXL) were used with triple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

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of $10^{\circ}\text{C}/\text{min}$. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

Poly(α -methyl styrene) is soluble in DMF, THF, toluene and CHCl_3 . It precipitates from methanol, ethanol, water and hexanes.

SEC of Homopolymer:



Size Exclusion Chromatography of Poly(α -methyl styrene):
 $M_n=126000$, $M_w=133600$, $M_w/M_n=1.06$

DSC thermogram for the polymer:

