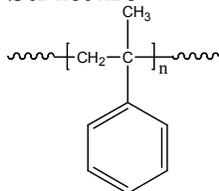


Sample Name: Poly( $\alpha$ -methyl styrene)

Sample #: P1809- $\alpha$ MeS

**Structure:**

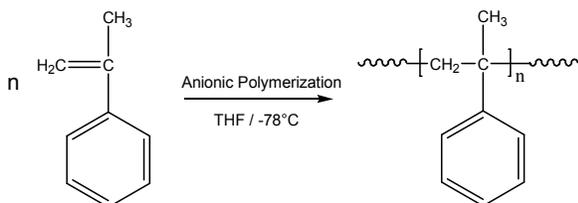


**Composition:**

| $M_n \times 10^3$     | PDI  |
|-----------------------|------|
| 84.3                  | 1.04 |
| $T_g$ ( $^{\circ}C$ ) | 171  |

**Synthesis Procedure:**

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



**Characterization:**

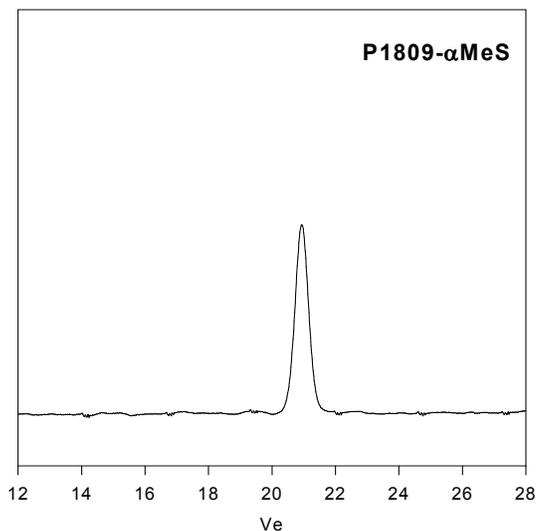
The molecular weight and polydispersity index (PDI) are obtained by size exclusion chromatography.

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of  $10^{\circ}C/min$ . 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( $\alpha$ -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  $\alpha$ -methyl styrene:

$M_n=84300$   $M_w=88000$   $M_w/M_n=1.04$

**DSC thermogram for the polymer:**

