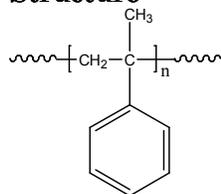


**Sample Name:** Poly( $\alpha$ -methyl styrene)

**Sample #:** P8834-  $\alpha$  MeS

**Structure:**

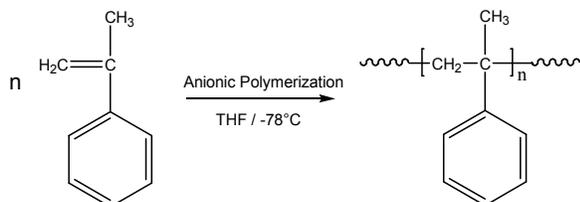


**Composition:**

Mn x 10 <sup>3</sup>	PDI
325.0	1.18
T <sub>g</sub> (°C)	167

**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 (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.

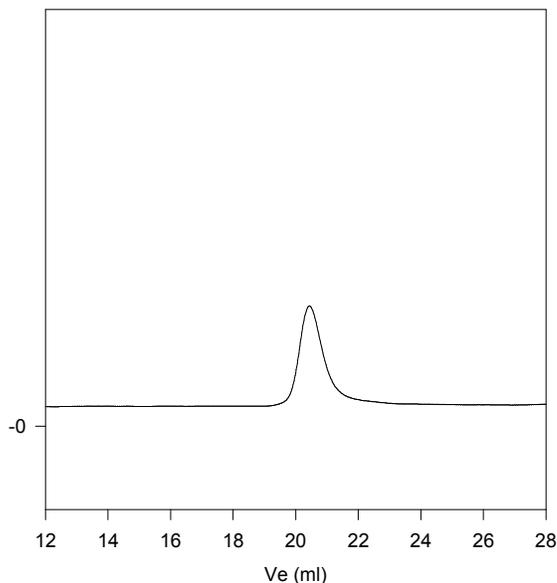
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of  $10^\circ C/min$ . The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

**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:**

**P8834- $\alpha$ MeS**



Size exclusion chromatograph of Poly  $\alpha$ -methylstyrene

$M_n=325,000$ ,  $M_w$ : 383,000  $M_w/M_n$ : 1.18

**DSC thermogram for the polymer:**

