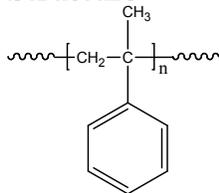


## Sample Name: Poly( $\alpha$ -methyl styrene)

Sample #: P4588-MeS

### Structure:

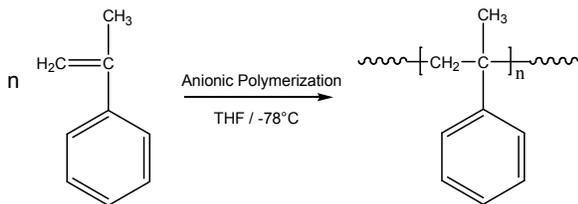


### Composition:

$M_n \times 10^3$	PDI
1.3	1.18
$T_g$ ( $^{\circ}C$ )	96

### 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.

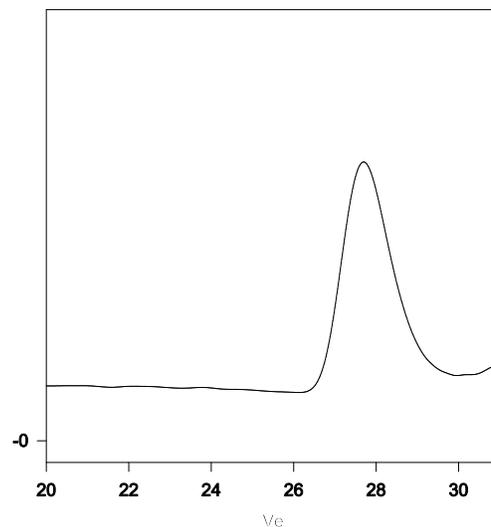
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of  $10^{\circ}C/min$ . The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature ( $T_g$ ).

### 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:

P4588-MeS



Size exclusion chromatography of Poly( $\alpha$ -methyl styrene) with on-line TriSEC detector:

$M_n=1300$ ,  $M_w=1530$ ,  $M_w/M_n=1.18$

## DSC thermogram for the polymer:

