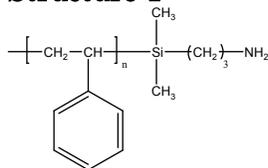


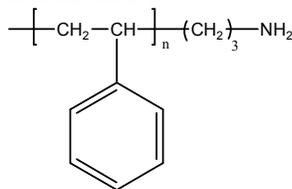
Sample Name:
Amino Terminated Polystyrene

Sample #: P10460-SNH2
 This bears structure # 2

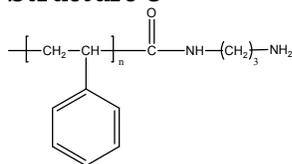
Structure 1:



Structure 2:



Structure 3:

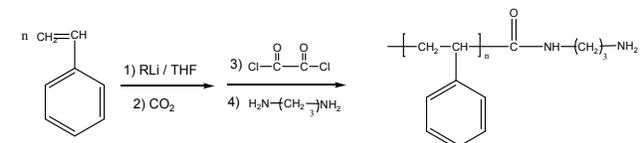
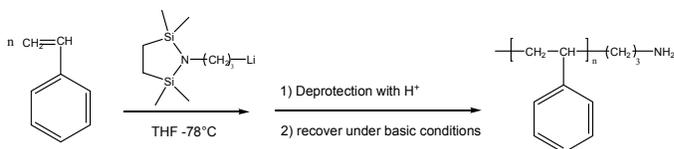
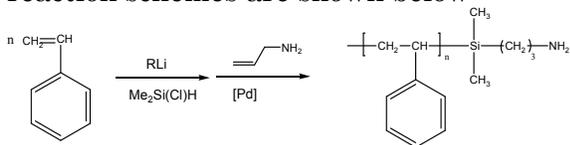


Composition:

| | |
|-------------------|--------|
| $M_n \times 10^3$ | PDI |
| 108.0 | 1.12 |
| T_g (°C) | 102 oC |

Synthesis Procedure:

α , ω -amino terminated polystyrene was synthesized by anionic living polymerization with different end-grouping strategies. The reaction schemes are shown below:



Characterization:

The molecular weight and polydispersity index of this polymer were determined by size exclusion chromatography (SEC) using a Varian liquid chromatograph equipped with a UV and refractive index detector. However, amino terminated polystyrene was found to interact with chromatography columns and therefore the amino group was protected by reaction with 1-naphthyl isocyanate before GPC analysis. Removal of the protecting group was confirmed by UV spectroscopy and the degree of functionality was confirmed by titration with HClO_4 using crystal violet as the indicator.

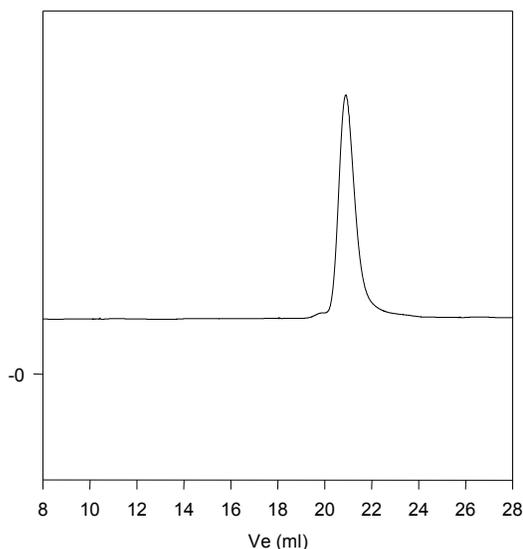
Thermal analysis:

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: Polymer is soluble in THF, CHCl_3 toluene and precipitated out from methanol and hexane.

SEC of Sample:

P10460-SNH2



Size exclusion chromatography of Amino Terminated polystyrene
 $M_n=108,000$, $M_w=121,000$, $PI=1.12$ functionality > 98%