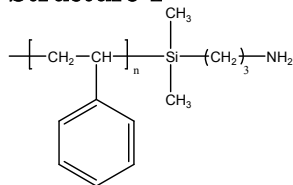


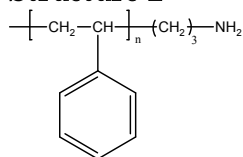
**Sample Name:**  
**Amino Terminated Polystyrene**

**Sample #:** P11123C-SNH2  
**This lot bears structure # 2**

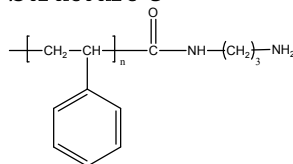
**Structure 1:**



**Structure 2:**



**Structure 3:**

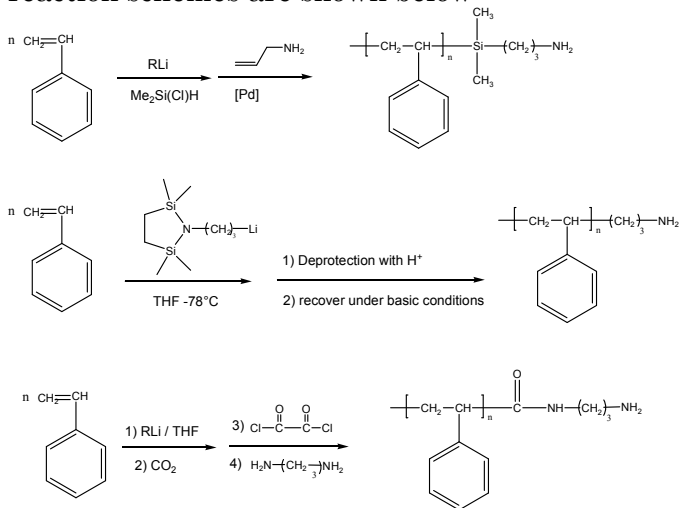


**Composition:**

$M_n \times 10^3$	PDI
21.0	1.4
$T_g$ (°C)	102

**Synthesis Procedure:**

$\alpha$ ,  $\omega$ -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  $\text{HClO}_4$  using crystal violet as the indicator.

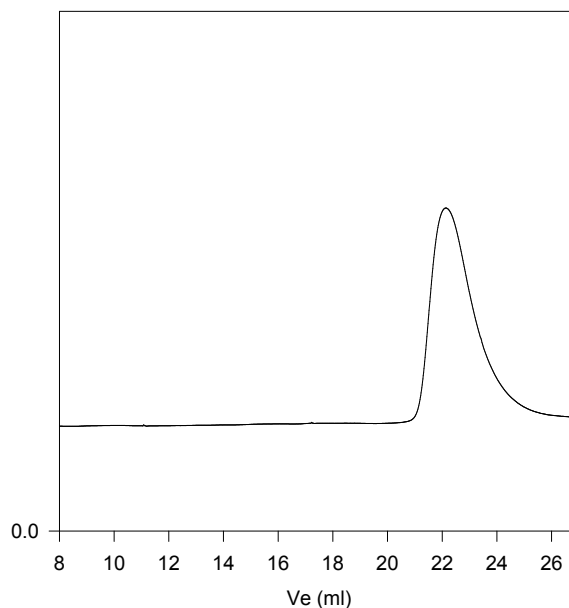
**Thermal analysis:**

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,  $\text{CHCl}_3$  toluene and precipitated out from methanol and hexane.

**SEC of Sample:**

**P11123C-SNH2**



Size exclusion chromatography of monoamino terminated polystyrene. (NH2 group end capped with 1-naphthyl isocyanate)

$M_n=21,000$ ,  $M_w=29,000$ ,  $PI=1.4$ , functionality=0.98.