

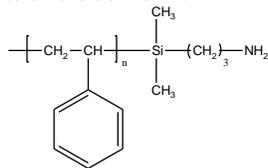
Sample Name:

Amino Terminated Polystyrene

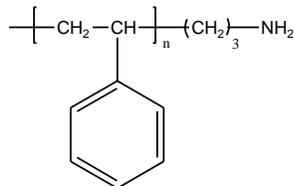
Sample #: P6058-SNH2

This bears structure # 2

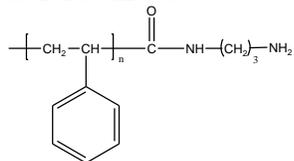
Structure 1:



Structure 2:



Structure 3:

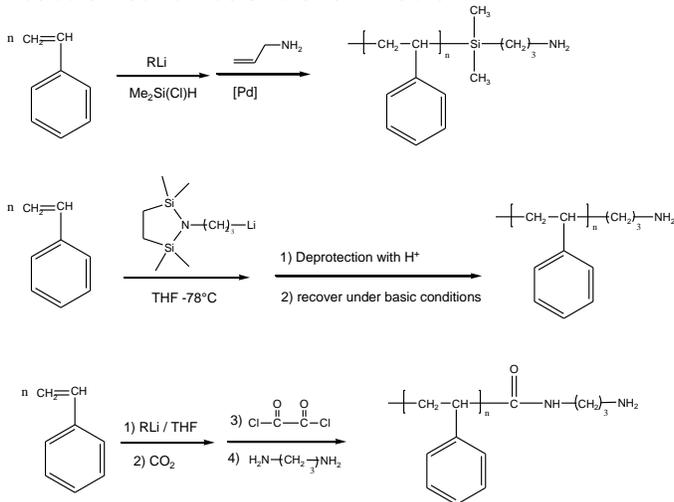


Composition:

Mn x 10 ³	PDI
120.0	1.04
T _g (°C)	102

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 HClO₄ using crystal violet as the indicator.

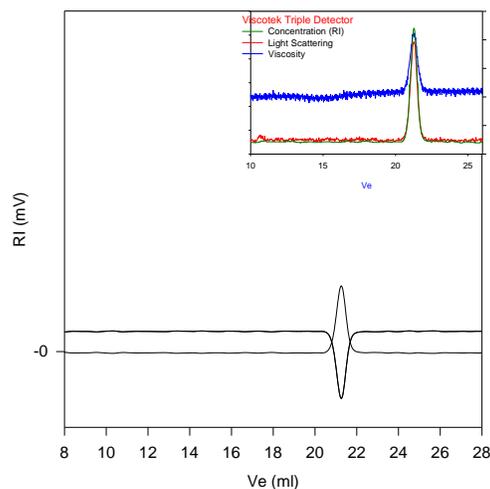
Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°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: Polymer is soluble in THF, CHCl₃ toluene and precipitated out from methanol and hexane.

SEC of Sample:

P6058-SNH2



Size Exclusion Chromatography of Poly styrene:

M_n = 120,000, M_w = 125,000, M_w/M_n = 1.04

dn/dc in THF at 35 °C: 0.185 ml/g

Rgw: 14.04nm

UV response ast 290nm PSNH2 end capped with naphthyl isocyanate