



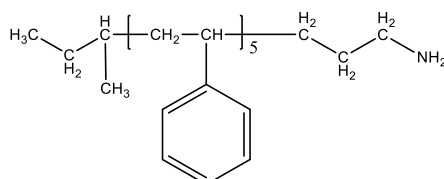
## Product Profile

### Identification

**Product Name:** Amino Terminated Polystyrene

**Product Lot Number:** P6058-SNH2

**Chemical Architecture:**

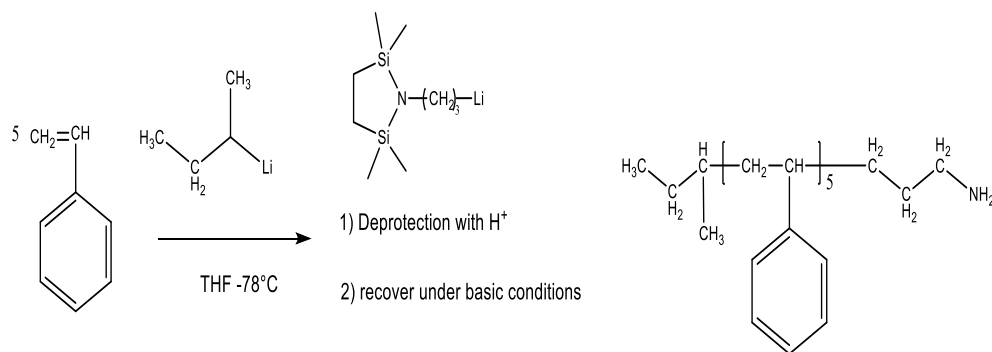


**Composition:**

<b>Mn (g/mole)</b>	<b>120,000</b>
<b>Mw (g/mole)</b>	<b>125,000</b>
<b>Mw/Mn</b>	<b>1.04</b>
<b>Primary Amino group test using ninhydrin</b>	<b>Blue color pass</b>

### Method of Synthesis

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



**Solubility in different solvents:**

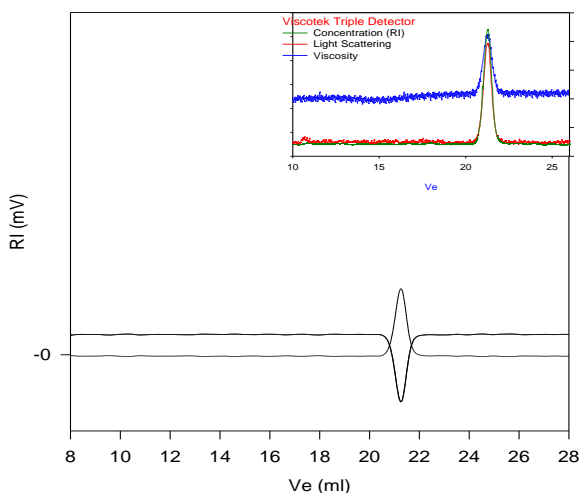
THF	√	Methanol	X
$\text{CHCl}_3$	√	Hexane	X
Toluene	√		

## Validation of Architecture

### A. Gel Permeation Chromatography (GPC), SEC Profile:

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<sub>4</sub> using crystal violet as the indicator.

#### 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 at 290nm PSNH2 end capped with naphthyl isocyanate