

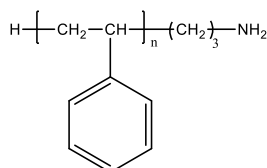
## Product Profile

### Identification

**Product Name:** Amino Terminated Polystyrene

**Product Lot Number:** P11123B-SNH2

**Chemical Architecture:**

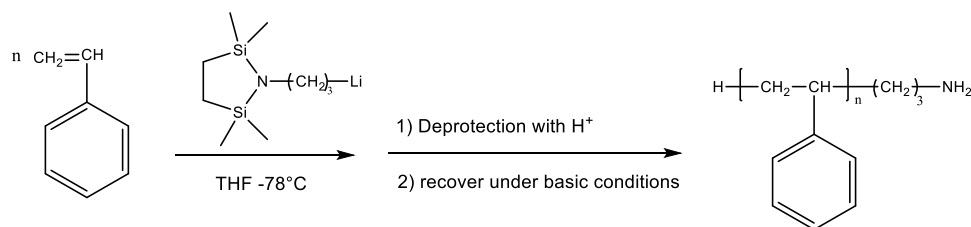


**Composition:**

<b>Mn (g/mole)</b>	<b>29,000</b>
<b>Mw (g/mole)</b>	<b>37,000</b>
<b>Mw/Mn</b>	<b>1.28</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	<b>X</b>
CHCl <sub>3</sub>	√	Hexane	<b>X</b>
Toluene	√		

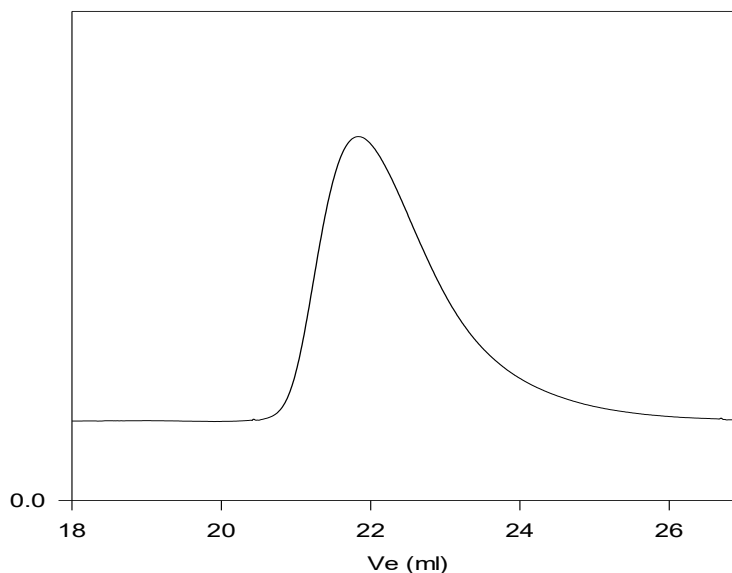


## Validation of Architecture

### 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  $\text{HClO}_4$  using crystal violet as the indicator.

#### **P11123B-SNH2**



Size exclusion chromatography of monoamino terminated polystyrene.  
(NH<sub>2</sub> group end capped with 1-naphthyl isocyanate)

$M_n=29,000$ ,  $M_w=37,000$ , ,  $PI=1.28$ , functionality=0.98.