



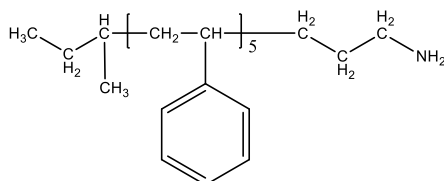
Product Profile

Identification

Product Name: Amino Terminated Polystyrene

Product Lot Number: P3694-SNH2

Chemical Architecture:

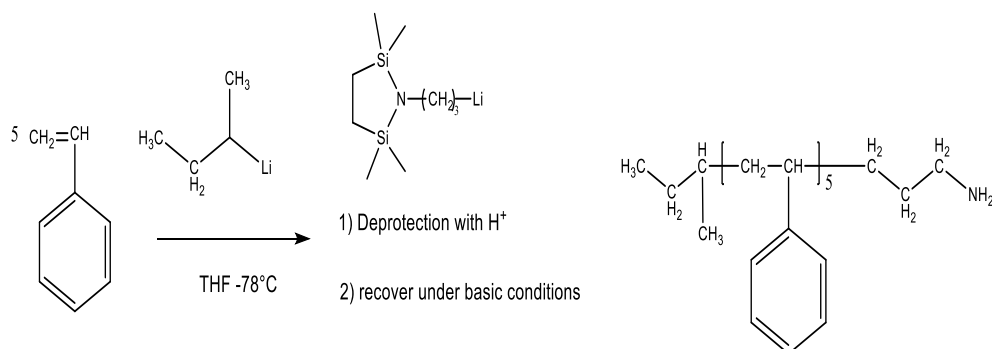


Composition:

Mn (g/mole)	25,000
Mw (g/mole)	31,000
Mw/Mn	1.25
Primary Amino group test using ninhydrin	Blue color pass

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:

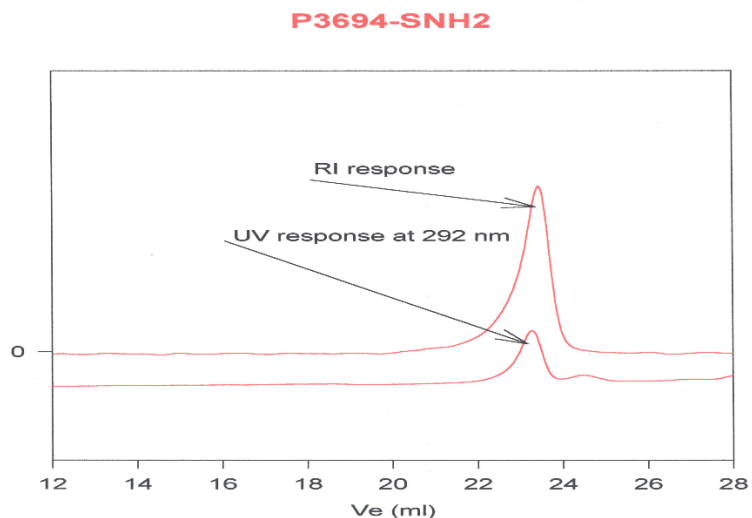
THF	✓	Methanol	X
CHCl ₃	✓	Hexane	X
Toluene	✓		



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_4 using crystal violet as the indicator.



Size exclusion chromatography of Amino Terminated polystyrene end capped with 1-naphthyl isocyanate:

$M_n=25000$, $M_w=31000$, $PI=1.25$, functionality ≥ 0.95