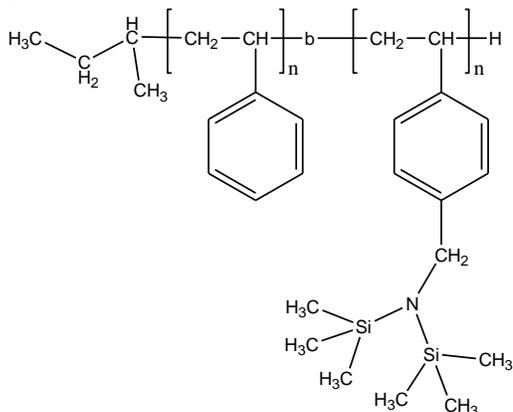


**Sample Name:** Poly(styrene-b-4-(N,N-bis(trimethylsilyl)aminomethyl) styrene)

**Sample #:** P40621A-S4AMS-Protected

**Structure:**

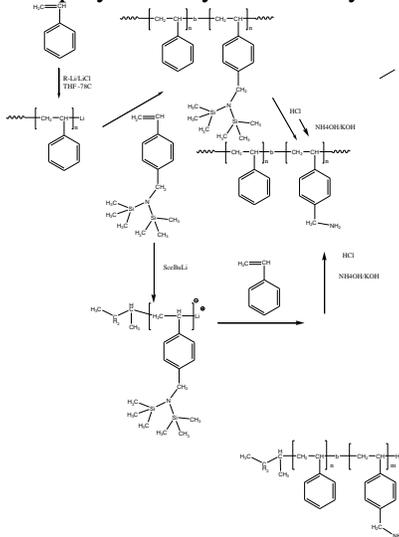


**Composition:**

Mn x 10 <sup>3</sup> S-b-4AMS-Protected	Mw/Mn (PDI)
141.5-b-3.2	1.04

**Synthesis Procedure:**

The polymer is synthesized by anionic process:



**Characterization:**

Polymer analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of the styrene protons at 6.3-7.2 ppm with the peak area at 3.76. HNMR analysis was carried out in CdCl<sub>3</sub> for the amino protected group with trimethyl silyl groups. Block copolymer PDI is determined by SEC.

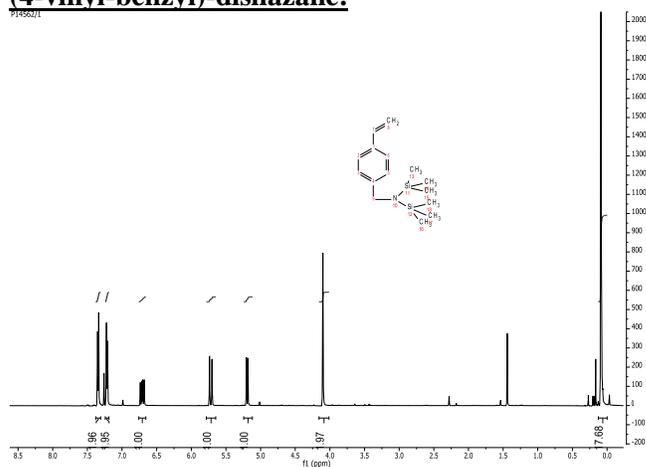
**Solubility:**

Poly(styrene-b-4-(N,N-bis(trimethylsilyl)aminomethyl) styrene) is soluble in THF, CHCl<sub>3</sub>, Toluene. Once the trimethyl silyl group removed the amino methyl styrene block polymer was found insoluble in most of the solvents. It was brought back to free amino group by treatment with NH<sub>4</sub>OH solution in THF/water mixture. The solubility of such type of polymer in different solvent is based on its composition: The following table illustrate the solubility in the following solvents:

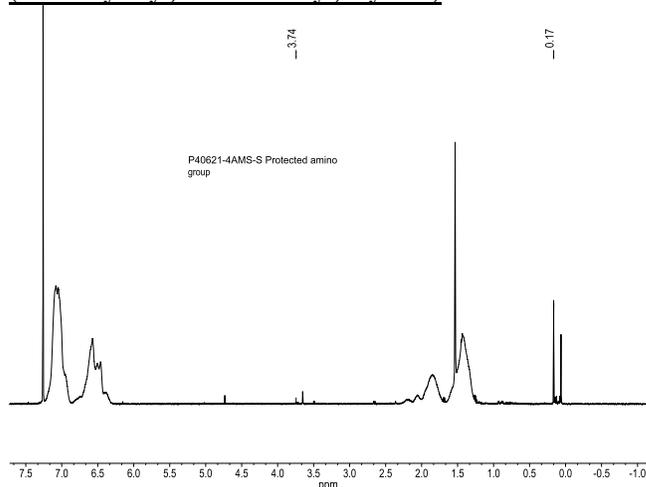
THF	THF/Methanol 90:10	CHCl <sub>3</sub>	DMF	DMF- CH <sub>3</sub> OH 95:5	DMF:THF 50:50
Soluble	Soluble	Soluble	Soluble	soluble	soluble

**Partial Solubility:** The solution light blue coloration illustrates formation of micelles.

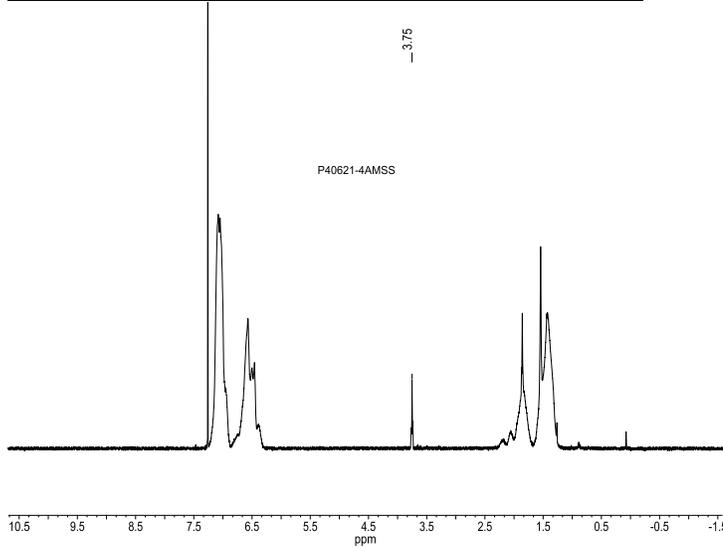
**<sup>1</sup>H NMR of the Monomer 1,1,1,3,3,3-Hexamethyl-2-(4-vinyl-benzyl)-disilazane:**



**<sup>1</sup>H NMR of the polymer: Poly(styrene-b-4-(N,N-bis(trimethylsilyl)aminomethyl) styrene)**



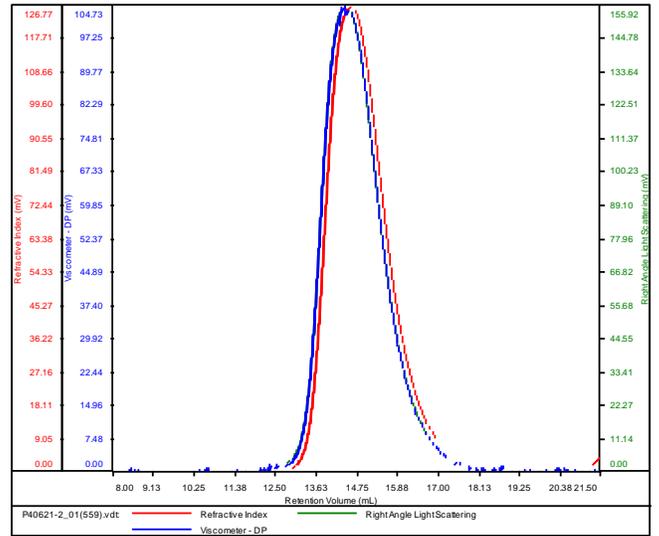
## <sup>1</sup>H NMR of Poly(4-amino methyl styrene-b-styrene)



## SEC elugram of the block polymer

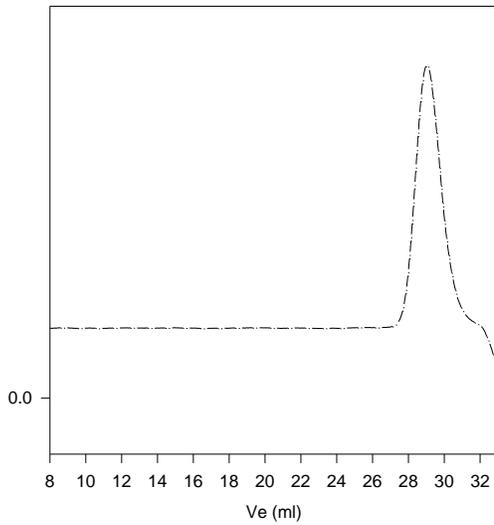
### P40621-4AMS-S

Conc	10.7503
dn/dc	0.1650
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS80k-May2017-0000.vcm



## SEC profile of the first block

### P40621-4AMS (NH<sub>2</sub> protected)



Size Exclusion Chromatogram of Poly(4-aminomethylstyrene protected -b-styrene)

— 4-Amino methylstyrene-Protected:  $M_n=3,200$ ,  $M_w=3700$ ,  $M_w/M_n=1.13$

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Sample	Mn	Mw	Mp	Mw/Mn	IV
P40621-2_01(559).vdt	144,404	149,995	148,615	1.039	1.0000