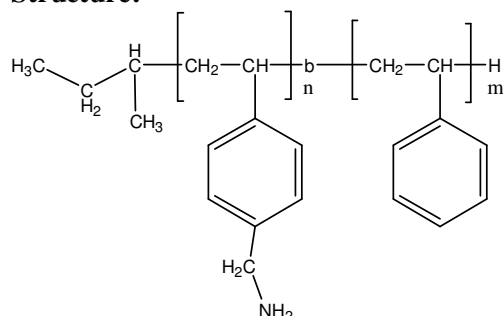


Sample Name:

**Poly(4-amino methyl styrene-b-Styrene)**

Sample #: **P11422-4AMSS**

**Structure:**

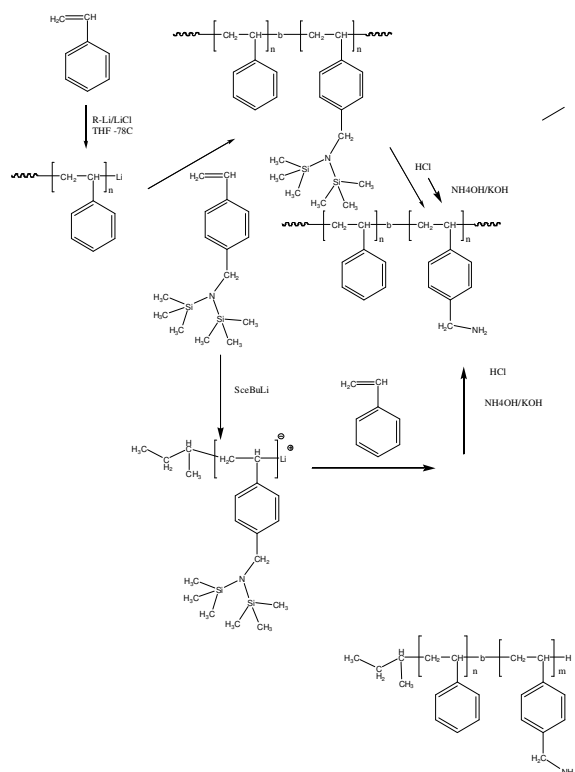


**Composition:**

Mn x 10 <sup>3</sup> 4AMS-b-S	Mw/Mn (PDI)
1.5-b-4.0	1.3

**Synthesis Procedure:**

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 of the polymer:**

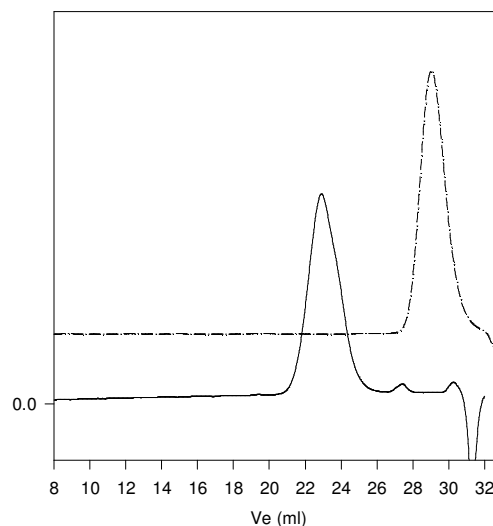
Poly(styrene-b-4-(N,N-bis (trimethylsilyl) aminomethyl)styrene) polymer (protected Amino compound) is soluble in THF, CHCl<sub>3</sub>, Toluene. Once the trimethyl silyl group removed the amino methyl styrene (salt with HCl) block polymer was found insoluble in most of the solvents. It was brought back 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
Opaque solution	Insoluble	opaque	Soluble in Hot	soluble	soluble

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

**SEC profile of the block copolymer**

**P4022-4AMS-S**



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

— 4-Amino methylstyrene-Protected: M<sub>n</sub>=3,200, M<sub>w</sub>=3700, M<sub>w</sub>/M<sub>n</sub>=1.13

- - - 4AMS-S: M<sub>n</sub> P4AMS(3200)-PS(4000), M<sub>w</sub>/M<sub>n</sub>=1.3  
After deprotection: 1500-b-4000