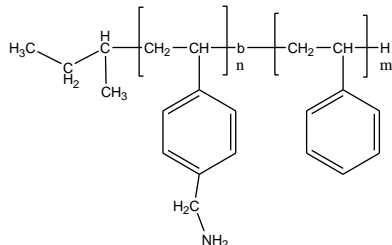


Sample Name:

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

Sample #: **P11424-4AMSS**

Structure:

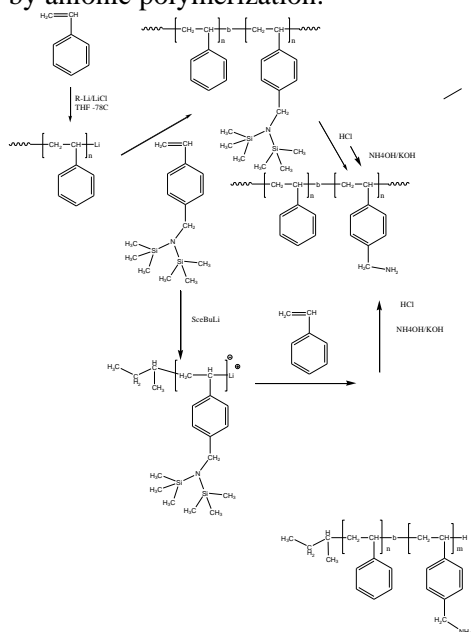


Composition:

Mn x 10 ⁻³ 4AMS-b-S	Mw/Mn (PDI)
3.0-b-8.0	1.2

Synthesis Procedure:

Poly(4-amino methyl styrene-b-Styrene) is obtained by anionic polymerization.



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 ¹H-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 CdCl₃ for the amino protected group with trimethyl silyl groups. Block copolymer PDI is determined by SEC.

Solubility of the polymer

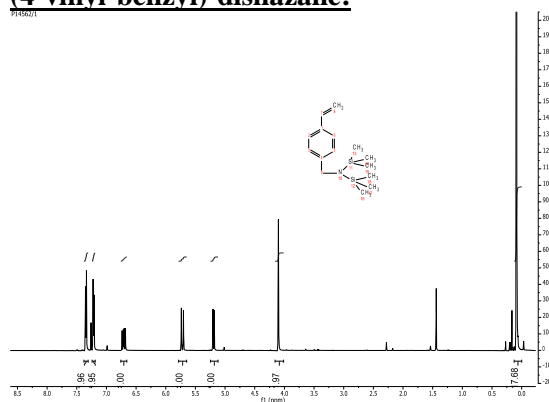
Poly(styrene-b-4-(N,N-bis(trimethylsilyl)aminomethyl)styrene) polymer (protected Amino compound) is soluble in THF, CHCl₃, Toluene. Once the trimethyl silyl group removed the amino methyl styrene (salt with HCl) block polymer was found insoluble in most of the solvents. It was brought back to free amino group by treatment with NH₄OH solution in THF/water mixture.

The solubility of such type of polymer in different

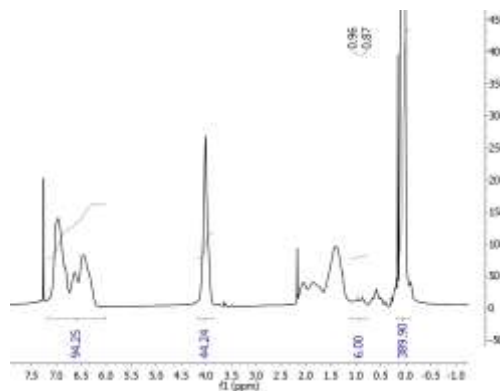
THF	THF/Methanol 90:10	CHCl ₃	DMF	DMF- CH ₃ OH 95:5	DMF:THF 50:50
Opaque solution	Insoluble	opaque	Soluble in Hot	soluble	soluble

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

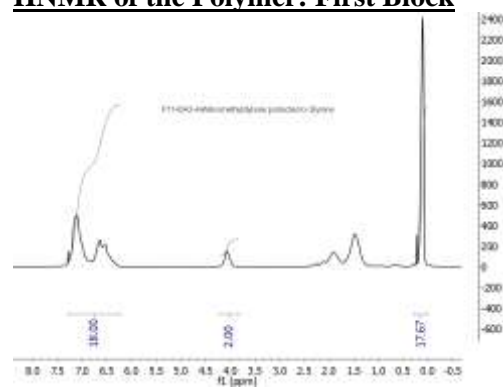
HNMR of the Monomer 1,1,1,3,3,3-Hexamethyl-2-(4-vinyl-benzyl)-disilazane:



HNMR of the Polymer: First Block

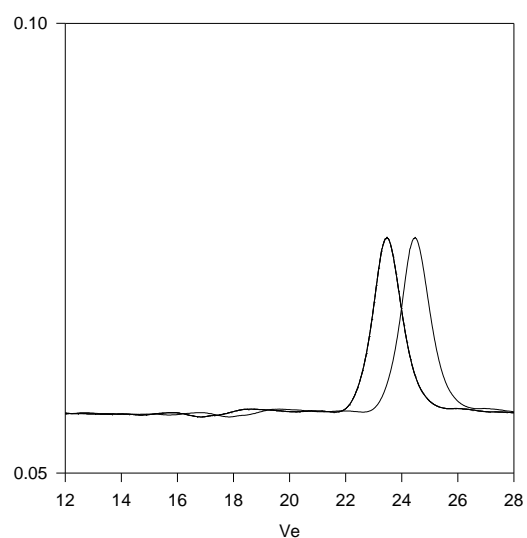


HNMR of the Polymer: First Block



SEC profile of the block copolymer

P11424-SMMA



Size Exclusion Chromatography of:

- 4-Amino MS protected first block , $M_n=6,500$ M_w : 7,400, $PI=1.09$
 - 4AMS protected-bS Diblock (6,500)-b-PS(8,000) $PI=1.2$
- After deprotection of amino groups:
 M_n 3000-b-8,000 M_w/M_n 1.2