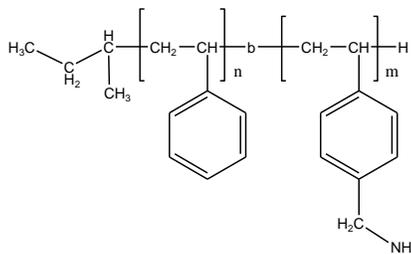


Sample Name:

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

Sample #: P11206-4AMSS

Structure:

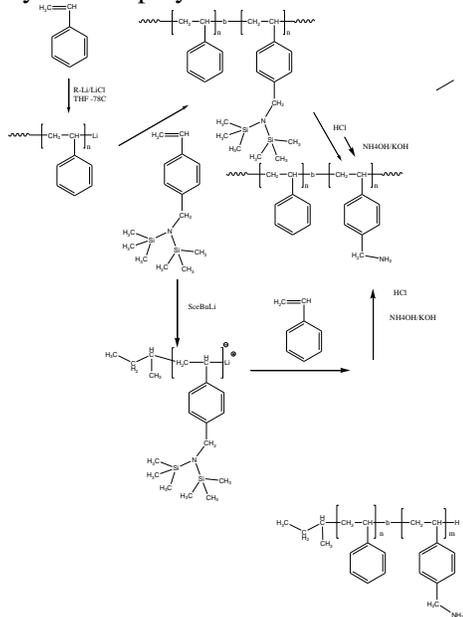


Composition:

$M_n \times 10^3$ 4AMS-b-S	M_w/M_n (PDI)
120-b-107	1.20

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 $^1\text{H-NMR}$ 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_3 for the amino protected group with trimethyl silyl groups. Block copolymer PDI is determined by SEC.

Solubility of the polymer

Poly(4-amino methyl styrene-b-Styrene) polymer (protected Amino compound) is soluble in THF, CHCl_3 , Toluene. Once the trimethyl silyl group removed the free amino methyl styrene block polymer was found insoluble in most of the solvents:

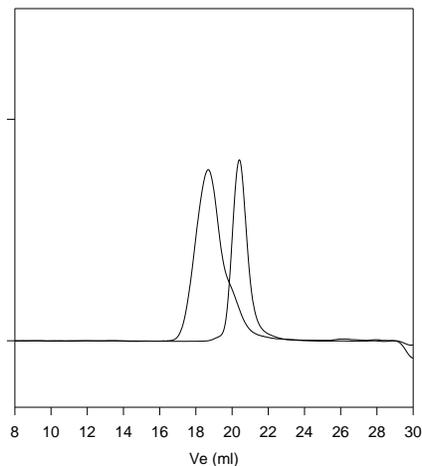
The solubility of such type of polymer in different solvent is based on its composition: The following table illustrate the solubility in the following solvents:

THF	THF/Methanol 90:10	CHCl_3	DMF	DMF- CH_3OH 95:5
Insoluble	Insoluble	Heterogeneous	Partial soluble	Partial soluble

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

SEC profile of the block copolymer

P11206-S4AMS (protected amino group)



Size exclusion chromatography of
poly(styrene-b-4-(N,N-bis(trimethylsilyl)aminomethyl)styrene)

- Polystyrene, $M_n=107,000$ $M_w=116,500$ $PI=1.09$
- Polystyrene(107,000)-b-4-(N,N-bis(trimethylsilyl)aminomethyl)styrene (273,000), $PI=1.20$
- After Deprotection of Amino group:
PStyrene-b-4 amino Methylstyrene $M_n: 107,000$ -b-120,000 M_w/M_n 1.20