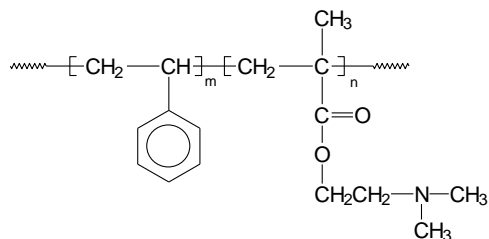


Sample Name:

Poly(styrene-b-N,N-dimethyl amino ethyl methacrylate)

Sample #: **P2740-SDMEMA**



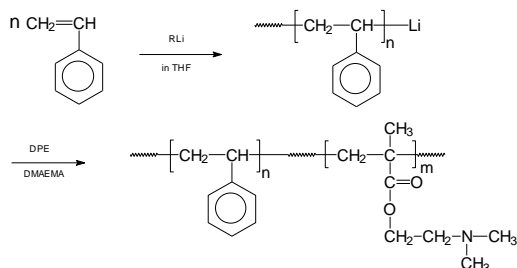
Structure:

Composition:

$M_n \times 10^3$ S-b-DMEMA	M_w/M_n (PDI)
14.0-b-8.3	1.11

Synthesis Procedure:

Poly(styrene-b-N,N-dimethyl amino ethyl methacrylate) is prepared by anionic polymerization with sequential monomer addition of styrene followed by addition of NN-dimethyl amino ethyl methacrylate. Polymerization was carried out in THF at -78°C .



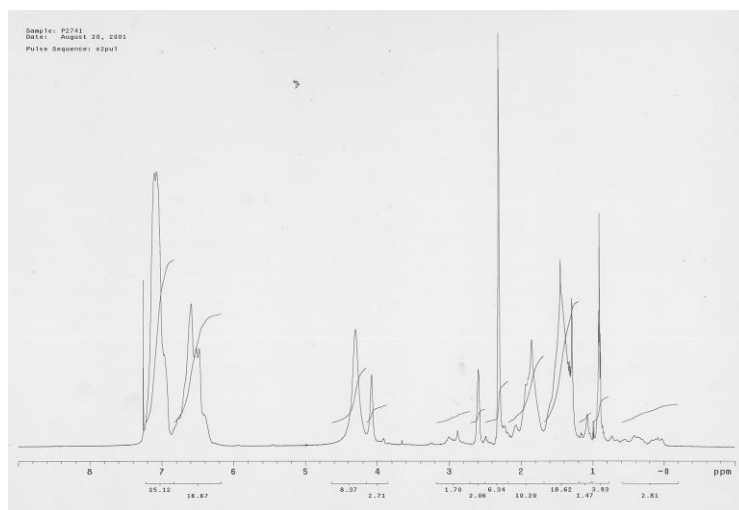
Characterization:

An aliquot of the polystyrene block was terminated before addition of NN-dimethyl amino ethyl methacrylate and 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 of NN-dimethyl amino ethyl methacrylate at 4.2 ppm. Block copolymer PDI is determined by SEC.

Solubility:

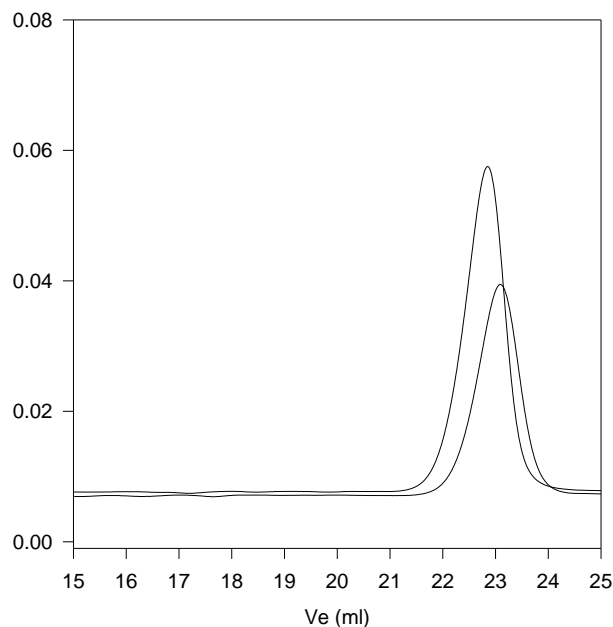
Block copolymer soluble in THF, dioxane, CHCl_3 . It is formed a suspension like cloudy solution in methanol, ethanol.

^1H NMR spectrum of the sample



SEC profile of the block copolymer

P2740-S-NNDMEMA



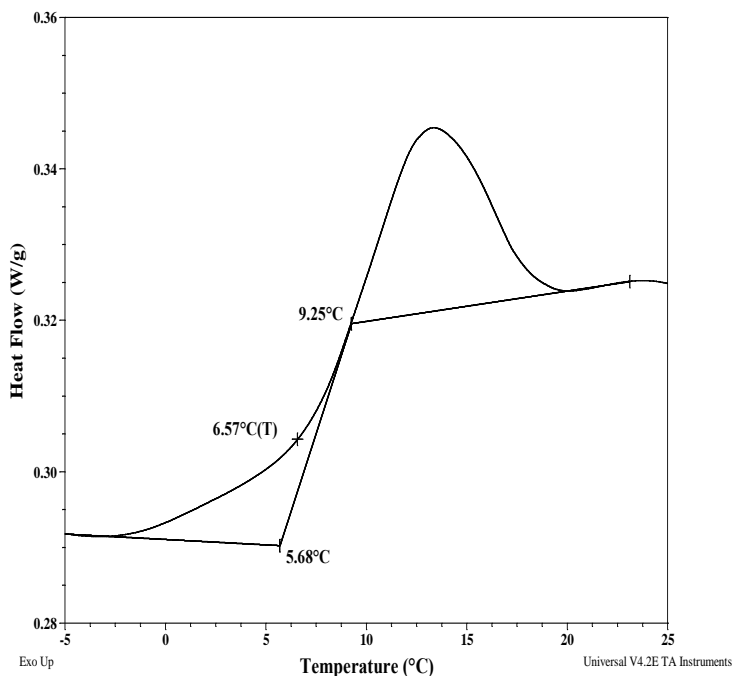
—— Polystyrene, $M_n=14000$, $M_w=15400$ $PI=1.11$

—— Block Copolymer PS(14000)-b-PNNDMEMA(8300), $PI=1.11$

Thermal analysis of sample P2740-SDMEMA

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

DSC thermogram for PDMEA block:



Glass transition temperature at a glance

T_g for PS block	86°C
T_g for PDMEA block	07°C

DSC thermogram for PS block:

