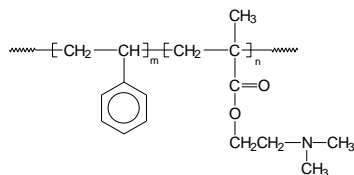


Sample Name: Poly(styrene)-b-poly(N,N-dimethylaminoethyl methacrylate)

Sample #: P42344-SDMAEMA

Structure:



Composition:

Mn x 10 ³ S-b-DMEMA	Mw/Mn (PDI)
7.0-b-9.0	1.02

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.

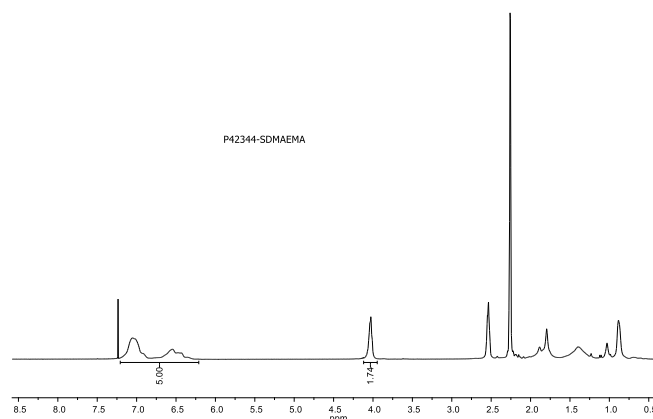
Characterization:

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 ¹H-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:

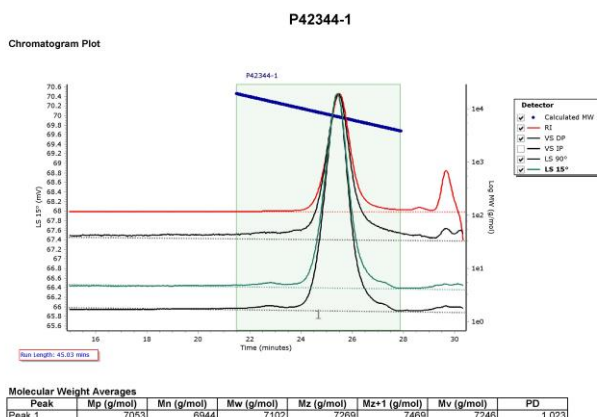
Block copolymer soluble in THF, dioxane, CHCl₃. It is formed a suspension like cloudy solution in methanol, ethanol.

HNMR spectrum of the polymer in CdCl₃:



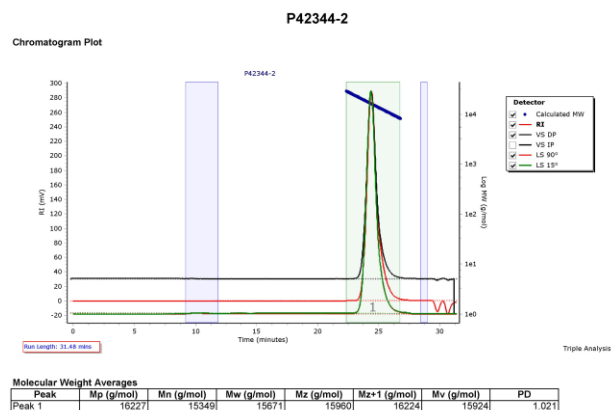
SEC profile of the first block:

Agilent GPC/SEC Software



SEC profile of the block copolymer:

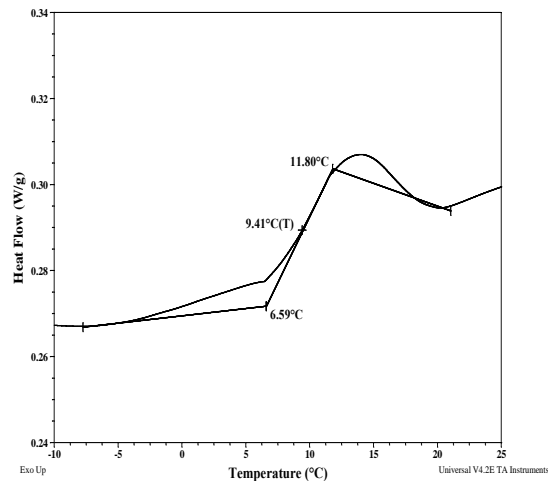
Agilent GPC/SEC Software



Thermal analysis of sample P42344-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	92°C
T_g for PDMEA block	09°C

DSC thermogram for PS block:

