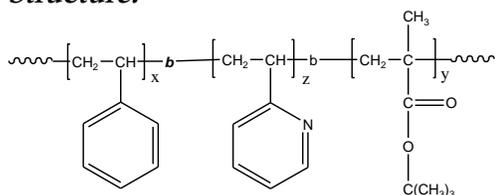


Sample Name:

Poly(styrene-b-2-vinyl pyridine-tert.butylmethacrylate)

Sample #: P9624-S2VPtBuMA

Structure:



Composition:

Mn x 10 ³ S-b-2VP-b-tBuMA	PDI
62-b-21.0-b-330.0	1.18
T _g for PS block: 106°C T _g for 2VP block: Not found	T _g for tBuMA block: 128°C

Synthesis Procedure:

Poly(styrene-b-2-vinyl pyridine-tert.butylmethacrylate) triblock copolymer is prepared by living anionic polymerization.

Characterization:

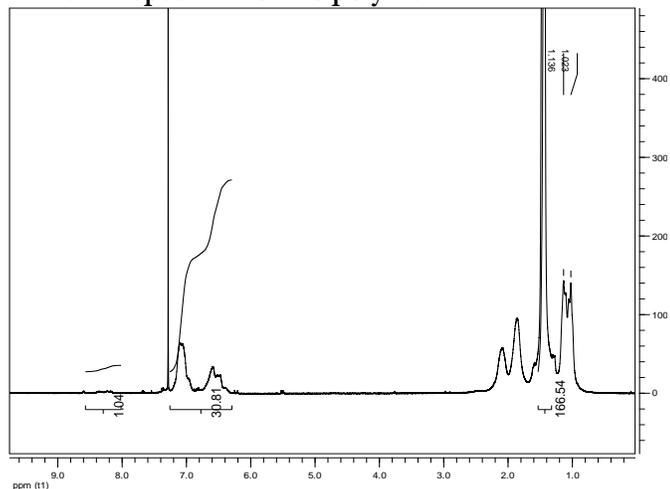
An aliquot of the anionic polystyrene block was terminated before addition of 2VP and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The Block copolymer composition was then calculated from ¹H-NMR spectroscopy by comparing the peak area of the 2VP proton at 8.2 ppm with the peak area of the aromatic protons of polystyrene at 6.3-7.2 ppm and tert.butyl protons at 1.4 ppm.

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).

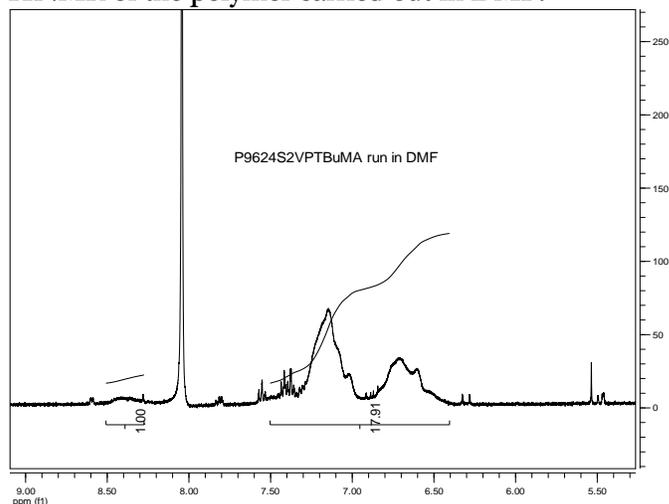
Solubility:

Poly(styrene-b-2-vinylpyridine-b-tert.BuMA) is soluble in THF, toluene, and CHCl₃.

¹H-NMR Spectrum of the polymer

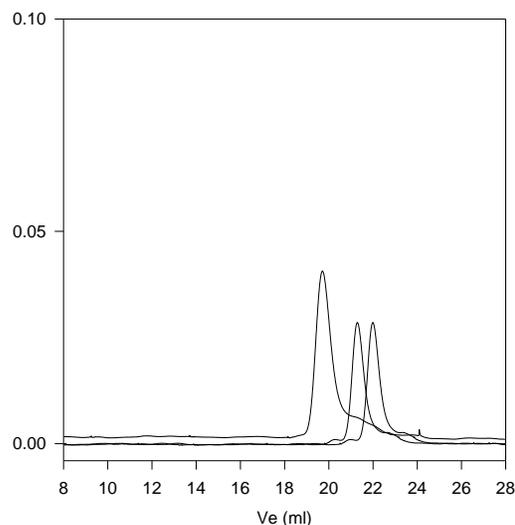


HNMR of the polymer carried out in DMF:



SEC for the triblock polymer:

P9624-S2VPtBuMA



Size exclusion chromatography of poly(St-b-t.BuMA-b-2VP)

— PS, M_n=62,000, M_w=66,000, M_w/M_n=1.06

— Poly(S-b-2VP): PSt(62000)-b-2VP(21,000) M_w/M_n=1.06

— Triblock copolymer: P(S) 62,000-b-2VP(21,000)-b-tBuMA(337000): M_w/M_n=1.18
Composition from ¹H NMR

DSC thermograms for the polymer:

