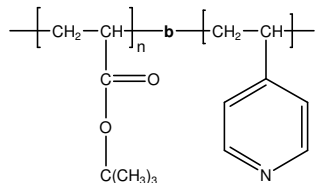


**Sample Name:** Poly(t-butyl acrylate-b-4-vinyl pyridine)

**Sample #:** P1888-tBuA4VP

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> tBuA-b-4VP	PDI
10.3-b-0.8	1.20
T <sub>g</sub> for t-BuA block	45°C
T <sub>g</sub> for 4VP block	Not traceable

**Synthesis Procedure:**

Poly(t-butyl acrylate-b-4-vinyl pyridine) is prepared by living anionic polymerization with sequence addition of t-butyl acrylate followed by 4-vinyl pyridine in THF using a RLi/LiCl adduct.

**Characterization:**

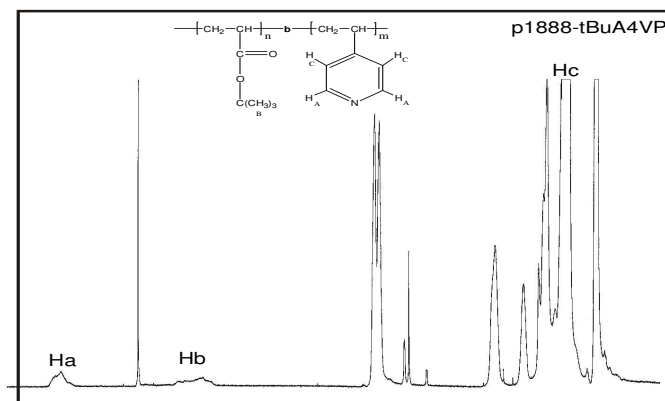
An aliquot of the anionic poly(methyl methacrylate) block was terminated before addition of 4-vinyl pyridine and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was determined by titrating poly vinyl pyridine with HClO<sub>4</sub> in acetic acid using crystal violet indicator.

Thermal analysis of the sample was carried out using a differential scanning calorimeter (TA Q100) at a heating rate of 10°C/min. The inflection glass transition temperature (T<sub>g</sub>) has been considered.

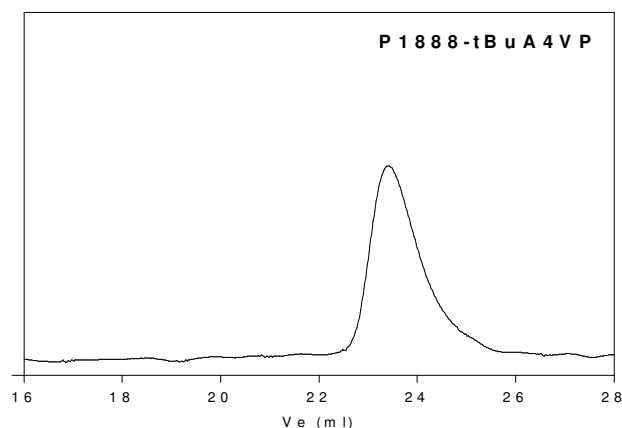
**Solubility:**

Poly(t-butyl acrylate-b-4 vinyl pyridine) is soluble in DMF, CHCl<sub>3</sub> and methanol.

**<sup>1</sup>H-NMR Spectrum of the block copolymer:**



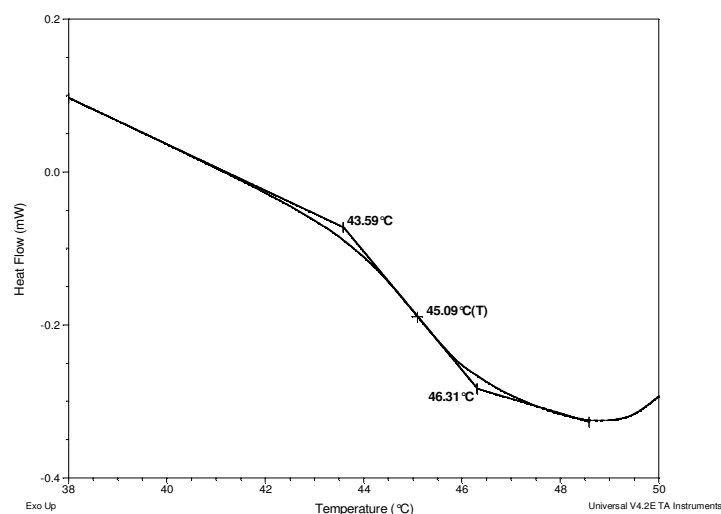
**SEC Analysis:**



Size exclusion chromatograph of Poly(t-butyl acrylate) in THF  
M<sub>n</sub> = 10300, M<sub>w</sub> = 12200, PDI = 1.18

Composition of block copolymer by titration: Mn 10300 (tBuA) - 800 (4VP)

**Thermogram for the sample**



**Reference:**

1. S. K. Varshney, X. F. Zhong and A. Eisenberg  
*Macromolecules*, 1993, 26, 701-706.