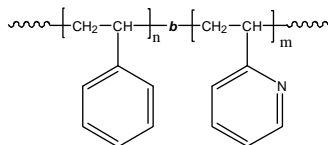


**Sample Name:** Poly(styrene-*b*-2-vinyl pyridine)

**Sample #:** P18546-S2VP

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> S-b-2VP	PDI
65.0– <i>b</i> –80.0	1.35
T <sub>g</sub> of P2VP block:	Not distinct 95°C for 100k homopolymer
T <sub>g</sub> of PS block:	104 °C

**Synthetic Procedure:**

Poly(styrene-*b*-2-vinyl pyridine) was prepared by living anionic polymerization in THF at –78 °C in presence of LiCl as an additive.

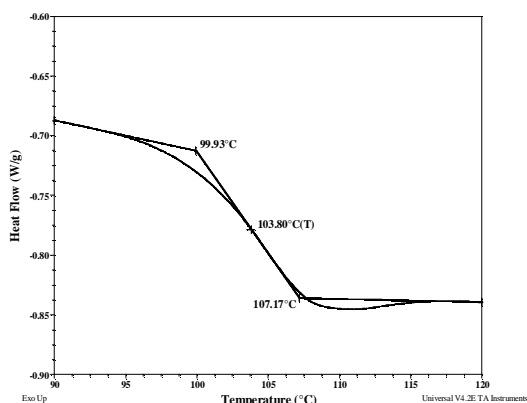
**Characterization:**

Polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The block copolymer composition was calculated from <sup>1</sup>H-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. The composition of the block copolymer can also be determined by titration in acetic acid/HClO<sub>4</sub> using crystal violet indicator.

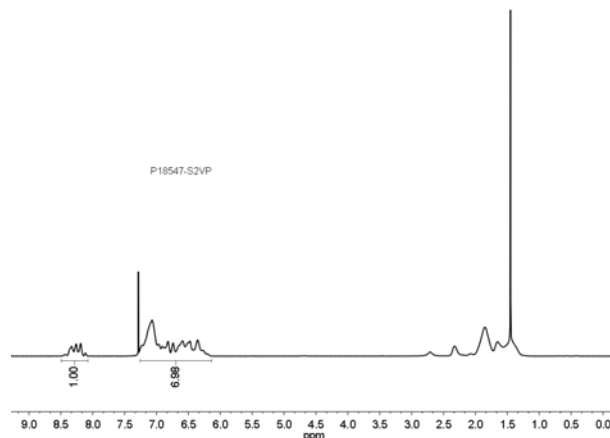
**Thermal analysis:**

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<sub>g</sub>).

**DSC thermogram of the polymer:**



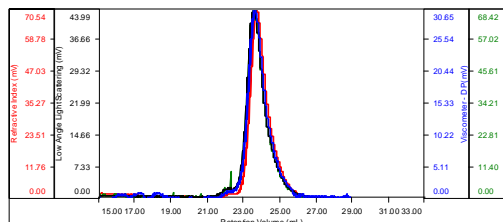
**<sup>1</sup>H-NMR (500 MHz, CDCl<sub>3</sub>) spectrum of the polymer:**



**SEC elugram:**

Sample ID: P185546\_

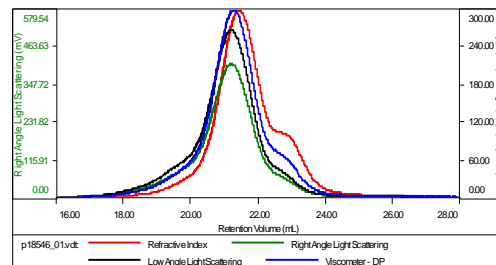
Concentration (mg/mL)	1.0470
Sample dn/dc (mL/g)	0.1850
Method File	PS80K-March13-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18546-S_01.vdt	65,328	68,688	66,301	1.051	0.7188

Sample ID: P18546-S2VP

Concentration (mg/mL)	5.6773
Sample dn/dc (mL/g)	0.1700
Method File	PS80K-0903-2014-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	MW Number Average (Da)	MW Weight Average (Da)	MW at Peak (Da)	Polydispersity	Intrinsic Viscosity (dL/g)
p18546_01.vdt	144,864	197,522	189,049	1.363	0.7717

**References:**

- (1). S. K. Varshney, X. F. Zhong and A. Eisenberg Macromolecules, **1993**, 26, 701–706.
- (2). Z.Gao, S. K. Varshney, S. Wong, A. Eisenberg Macromolecules, **1994**, 27, 7923–7927.