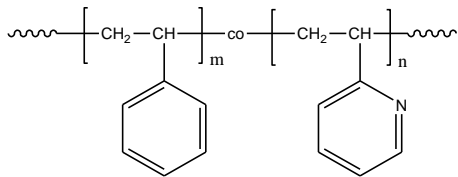


Sample Name:

Random Copolymer Poly(styrene-co-2-vinylpyridine)

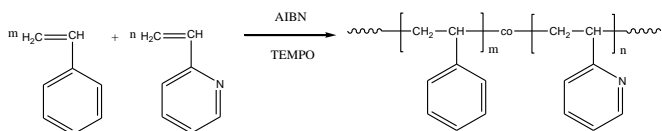
Sample #: P7617-S2VPran**Structure:****Composition:**

2VP (mol%) : 61%

| | |
|---|-----|
| Mn x 10 ³ PS-co-P2VP | PDI |
| 27.5 | 1.5 |
| T _g for the random copolymer | 94C |

Synthesis Procedure:

The polymer is prepared by radical polymerization of styrene and 2-vinylpyridine in the presence of TEMPO and AIBN. The scheme of the reaction is illustrated below:

**Characterization:**

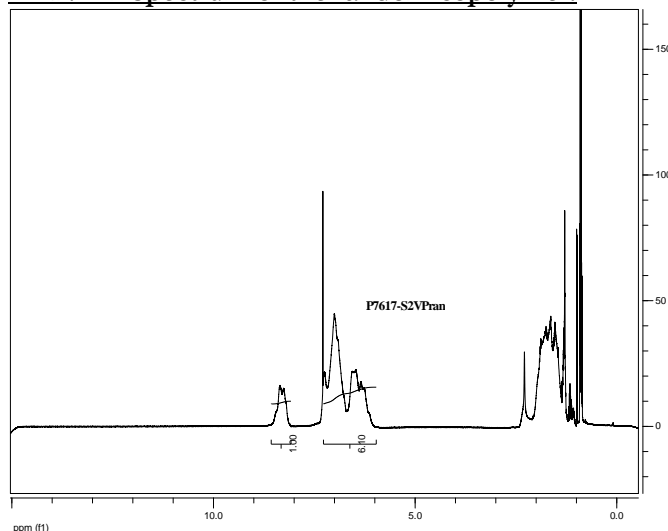
The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of 2VP protons at 8.3 ppm with the styrene protons at about 6.1-7.2 ppm that deducts the contribution of the 2VP protons.

Thermal analysis:

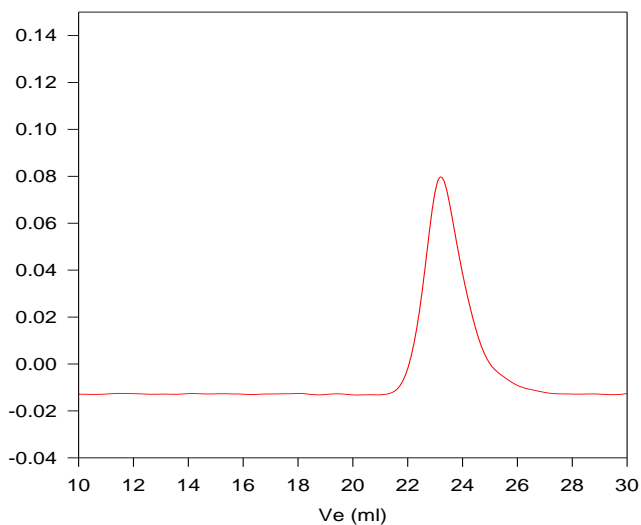
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

Solubility:

The polymer is soluble in CHCl₃, THF, DMF, toluene and precipitated out from hexane

¹H-NMR Spectrum of the random copolymer:**SEC of the random copolymer:**

P7617-S2VPran



Size exclusion chromatograph of the polymer:

M_n=27500, M_w=41300, M_w/M_n=1.5

2VP= 61.0 mole% from NMR

DSC thermogram for the sample: