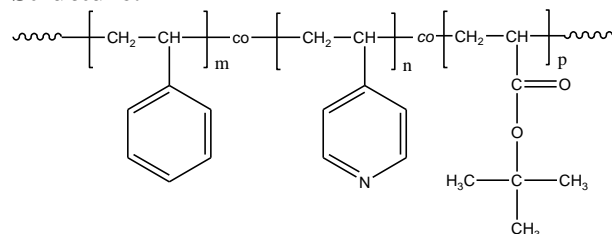


Sample Name: Random Copolymer Poly (styrene-co-4-vinylpyridine-co-tertbutyl acrylate)

Sample #: P14539-S4VPtBuAran

Structure:



Composition:

Mn x 10 ³ PS4VPtBuAran	PDI
72.0	1.34
T _g for random polymer	125 °C
S4VPtBuA ratio (mol%)	15: 81: 4

Synthesis Procedure:

The polymer is prepared by RAFT polymerization of styrene, 4-vinylpyridine and tBuA.

Characterization:

The polymer was analyzed by size exclusion chromatography (SEC) equipped with light scattering detector and refractive detector in DMF at 50 °C to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from ¹H-NMR spectroscopy in DMF by comparing the peak area of 4VP protons at 8.33 ppm with the styrene protons at about 6.3-7.4 ppm that deducts the contribution of the 4VP protons, tBuA moiety at 1.4-1.5 ppm.

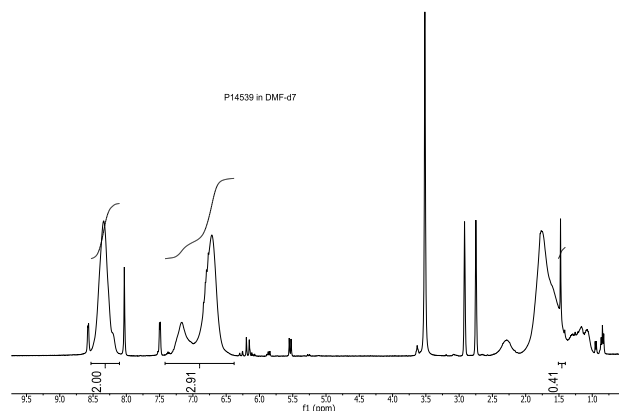
Thermal analysis:

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).

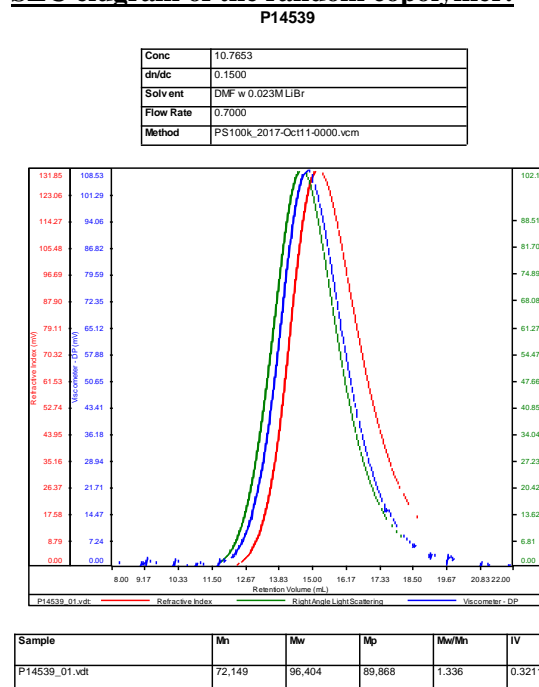
Solubility:

The polymer is soluble in THF, DMF and in hot methanol.

¹H-NMR Spectrum of the random copolymer:



SEC elugram of the random copolymer:



DSC thermogram for the sample:

