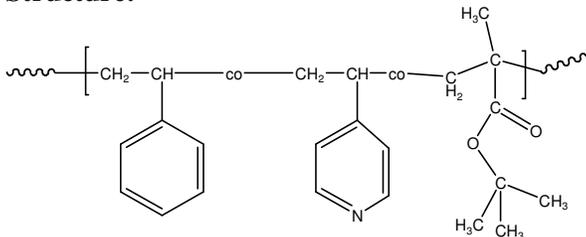


Sample Name:

Random Copolymer Poly(styrene-co-4-vinylpyridine-co-tert.butyl methacrylate)

Sample #: **P11231-S4VPtBuMAran**

Structure:



Composition:

$M_n \times 10^3$ PS4VPtBuMAran	PDI
480.0	2.5

T_g for random polymer	113 °C
--------------------------	--------

S4VPtBuMA ratio	15:67:18
-----------------	----------

Synthesis Procedure:

The polymer is prepared by RAFT radical polymerization of styrene and 4-vinylpyridine and tBuMA.

Characterization:

The polymer was analyzed by size exclusion chromatography (SEC) in DMF at 60 °C to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from $^1\text{H-NMR}$ spectroscopy by comparing the peak area of 4VP protons at 8.28 ppm with the styrene protons at about 6.1-7.2 ppm that deducts the contribution of the 4VP protons, tBu moiety at 1.4 ppm

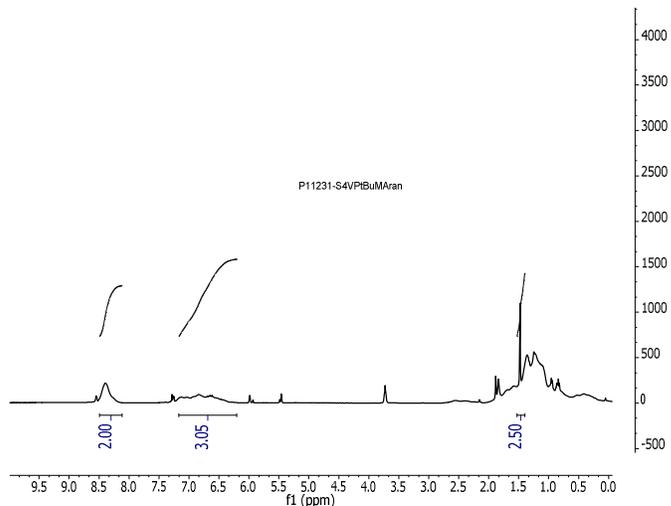
Thermal analysis:

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).

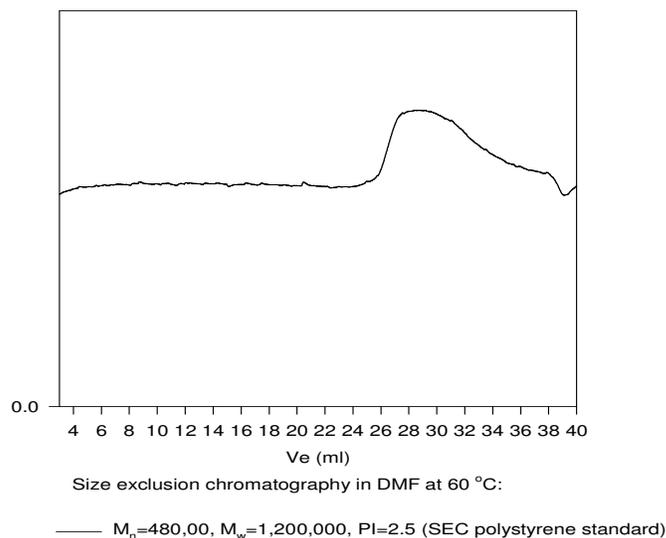
Solubility:

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

$^1\text{H-NMR}$ Spectrum of the random copolymer:



SEC elugram of the random copolymer:
P11231-S4VPtBuMAran



DSC thermogram for the sample

