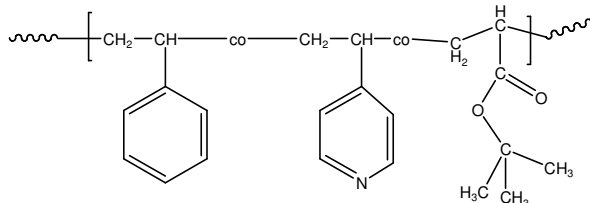


Sample Name:

**Random Copolymer Poly(styrene-co-4-vinylpyridine-co-tert.butylacrylate)**

Sample #: **P11230-S4VPtBuAran**

**Structure:**



**Composition:**

Mn x 10 <sup>3</sup> PS4VPtBuAran	PDI
510.0	2.2

T <sub>g</sub> for random polymer	108 °C
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S4VPtBuA ratio	16:64:20
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**Synthesis Procedure:**

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

**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 <sup>1</sup>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, tBuA moiety at 1.4 ppm

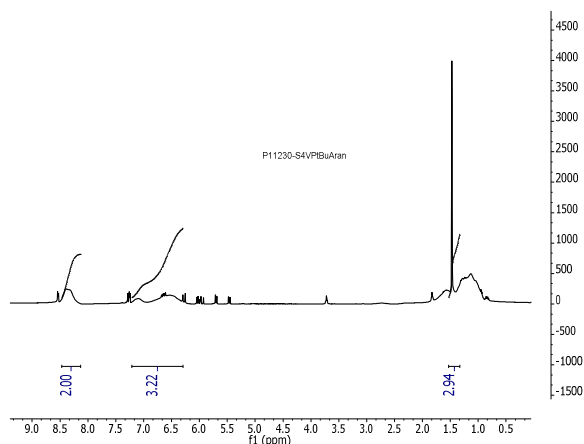
**Thermal analysis:**

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<sub>g</sub>).

**Solubility:**

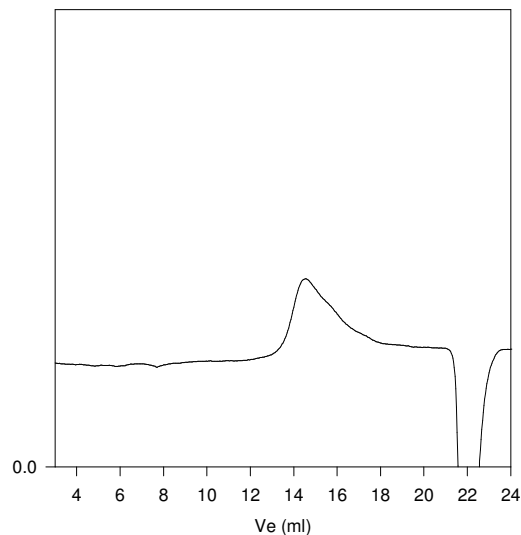
The polymer is soluble in THF, DMF and in hot methanol.

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



**SEC elugram of the random copolymer:**

**P11230-S4VPtBuAran**



Size exclusion chromatography in DMF at 60 °C:

— M<sub>n</sub>=510,00, M<sub>w</sub>=1,122,000, PI=2.2 (SEC polystyrene standard)

**DSC thermogram of the sample**

