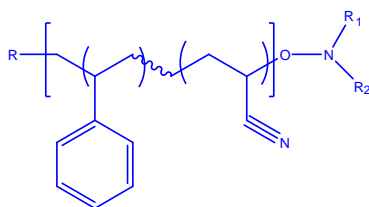


Sample Name:

Random Copolymer Poly(styrene-co-acrylonitrile)

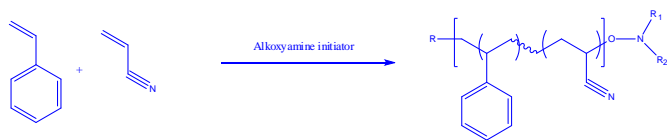
Sample #: P6421-SANran

Structure:**Composition:**

Mn x 10 ³ (Styrene wt%)	PDI
50.2 (70%)	1.35
	99°C

Synthesis Procedure:

Random Copolymer is prepared by nitroxide-mediated radical polymerization of styrene, and acrylonitrile.

**Characterization:**

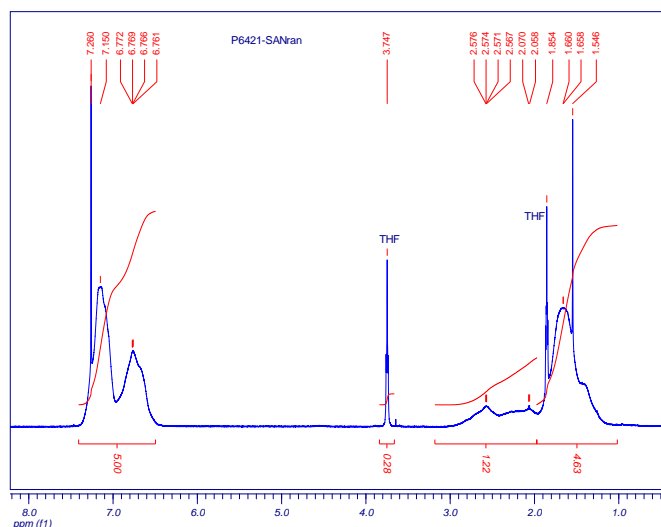
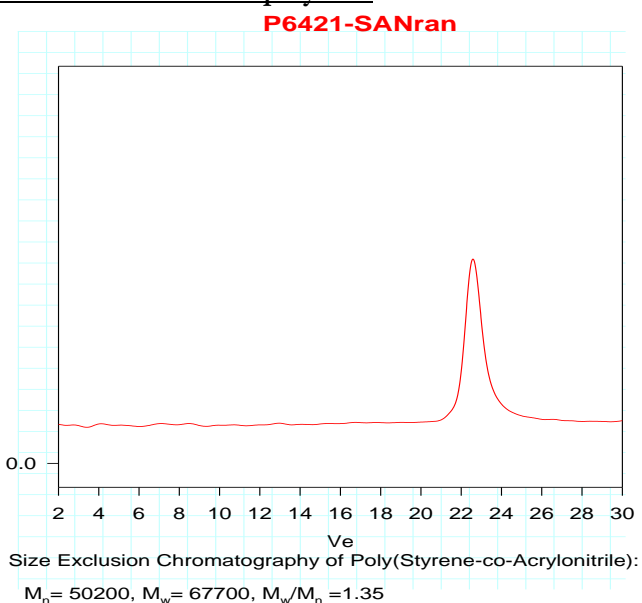
The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area the aromatic protons at 6.66-7.05 ppm with the protons of acrylonitrile at about 1.5-2.5 ppm that deducts the contribution of the styrene backbone protons.

Thermal analysis:

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°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:

Random Copolymer Poly(styrene-co-acrylonitrile) is soluble in CHCl₃, THF, DMF at this composition and precipitated out from methanol.

Proton NMR of copolymer:**SEC of the random copolymer:****DSC thermogram for the sample:**