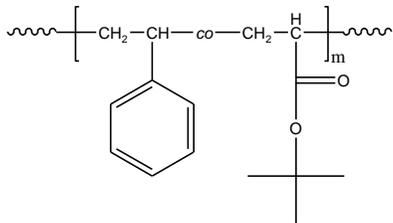


Sample Name:

Random Copolymer Poly(styrene-co-t-butyl acrylate)

Sample #: P7048-StBuAran

Structure:



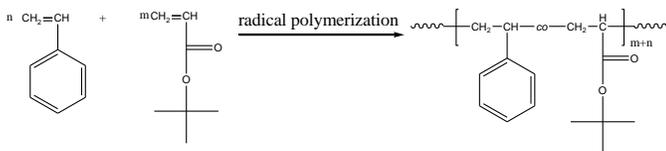
Composition:

PS (mol%) : 63

Mn x 10 ³ PS-co-PtBuA	PDI
50.6	1.9

Synthesis Procedure:

Random Copolymer poly(styrene-co-t-butyl acrylate) is prepared by radical polymerization of styrene and t-butyl acrylate. The scheme of the reaction is illustrated below:



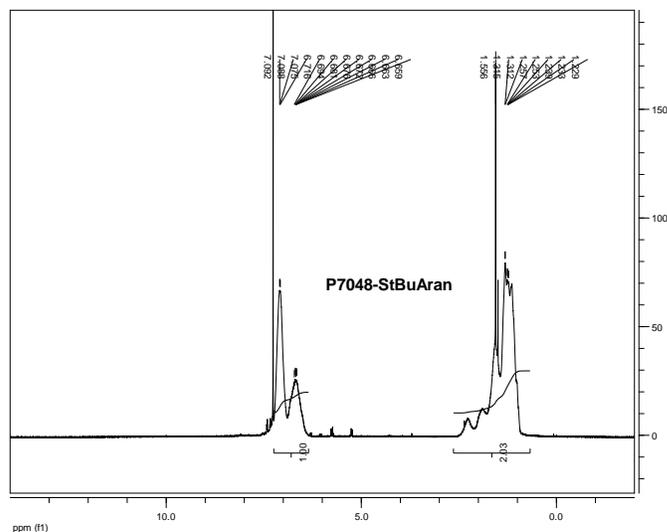
Characterization:

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 the aromatic protons of styrene at about 6.66-7.05 ppm with the protons of t-butyl acrylate at about 0.8-2.5 ppm that deducts the contribution of the styrene back bone protons.

Solubility:

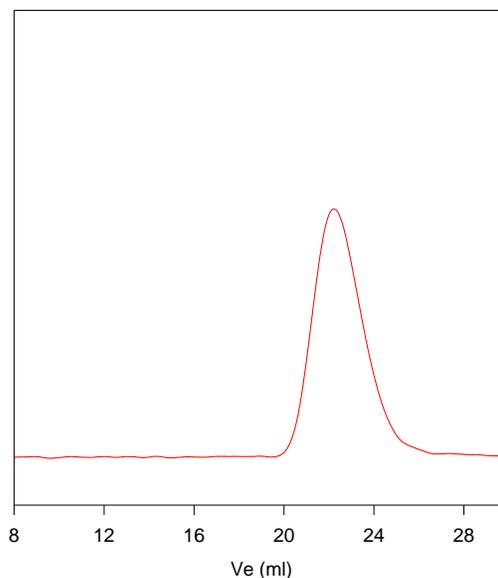
Random Copolymer poly(styrene-co-t-butyl acrylate) is soluble in CHCl₃, THF, DMF, toluene and precipitated out from methanol and water.

¹H-NMR Spectrum of the random copolymer:



SEC of the random copolymer:

P7048-StBuAran



Size exclusion chromatograph of random copolymer: poly(S-co-t-BuA):

M_n=50600, M_w=98300, M_w/M_n=1.9

Polystyrene content: 63%mol by NMR