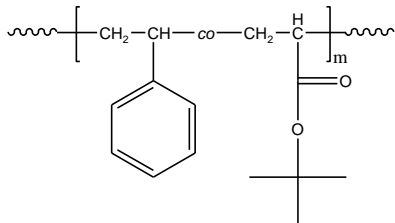


**Sample Name:**

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

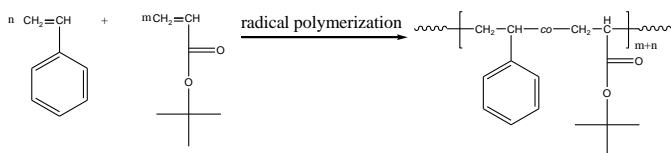
**Sample #: P7048-StBuAran****Structure:****Composition:**

PS (mol%) : 63

$M_n \times 10^3$ PS-co-PtBuA	PDI
50.6	1.9

**Synthesis Procedure:**

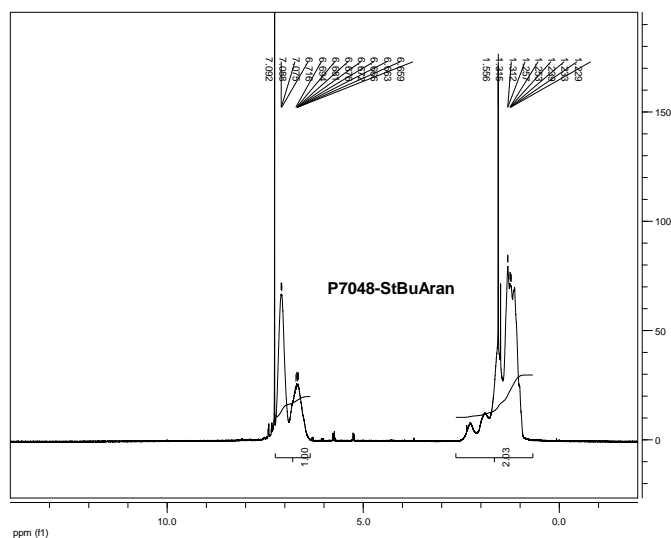
Random Copolymer poly(styrene-co-t-butyl acrylate) is prepared by radical polymerization of styrene and t-butyl acrylate. The scheme of the reaction is illustrated below:

**Characterization:**

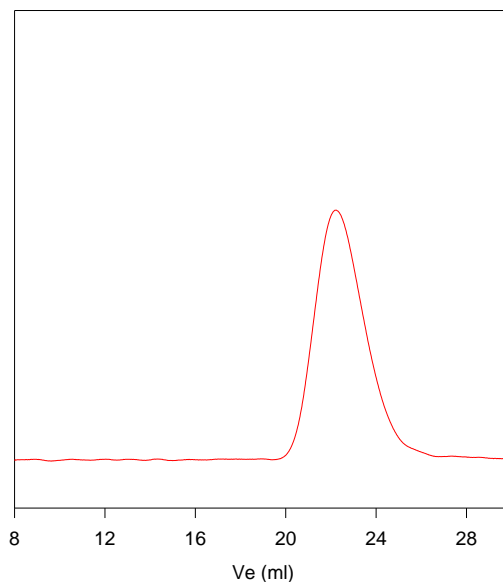
The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from  $^1\text{H-NMR}$  spectroscopy by comparing the peak area the aromatic protons of styrene at about 6.66-7.05 ppm with the protons 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  $\text{CHCl}_3$ , THF, DMF, toluene and precipitated out from methanol and water.

 **$^1\text{H-NMR}$  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