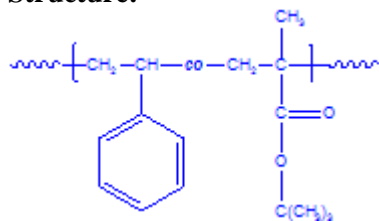


Sample Name: Random Copolymer Poly(styrene-co-t-butyl methacrylate)

Sample #: P2102-StBuMAran

Structure:



Composition:

Mn x 10 ³ PS-co-PtBuMA	PDI
96.2	1.7
T _g for the random polymer	102°C

Synthesis Procedure:

Random Copolymer poly(styrene-co-t-butyl methacrylate) is prepared by radical polymerization of styrene and t-butyl methacrylate.

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.

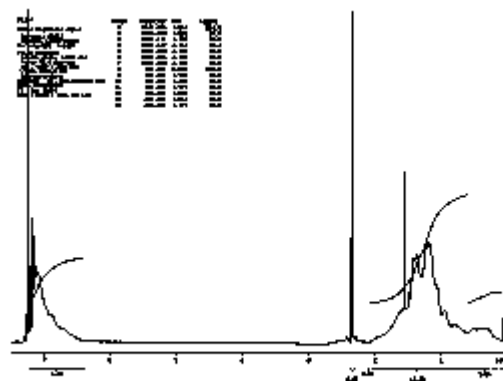
Thermal analysis:

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:

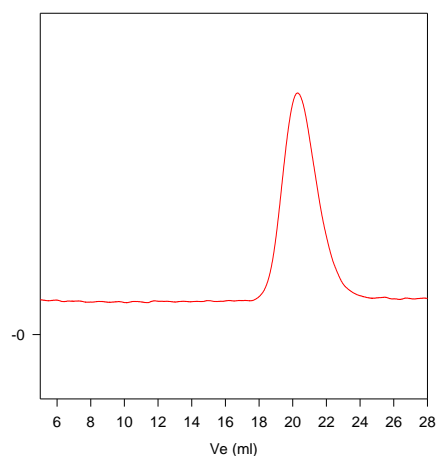
Random Copolymer poly(styrene-co-t-butyl acrylate) is soluble in CHCl₃, THF, DMF, toluene and precipitated out from methanol and water.

¹H-NMR Spectrum of the random copolymer:



SEC of the random copolymer:

P2102-1StBuMA



Size exclusion chromatograph of random copolymer: poly(St-co-tBuMA):

M_w=96200, M_n=163500 M_w/M_n=1.7

Thermogram for the sample:

