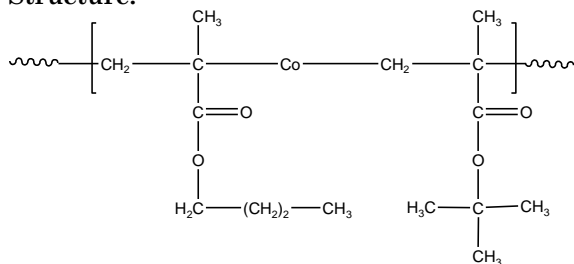


**Sample Name:**

Random Copolymer Poly(n-Butyl methacrylate-co-tert.-butyl methacrylate)

**Sample #:** P5773B-n-BuMAAtBuMA ran

**Structure:****Composition:**

Mn × 10 <sup>3</sup> PnBuMA-co-tert.BuMA	PDI
530.0	1.3
T <sub>g</sub> of random polymer	52 °C
Ratio of nBuMA:tBuMA	70:30
Syndio:hetero:iso fraction	73:25:2

**Synthesis Procedure:**

Random Copolymer Poly(n-Butylmethacrylate-co-tert.butyl methacrylate) is prepared by anionic polymerization.

**Characterization:**

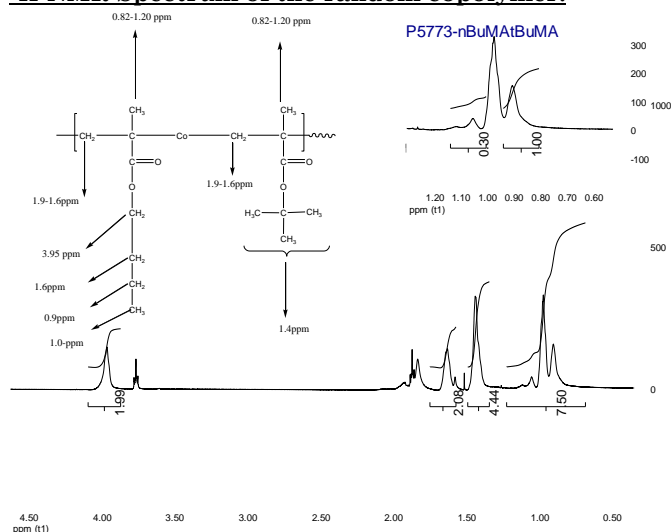
The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area the aromatic protons of ppm with the protons of methylene (-CH<sub>2</sub>) of nBuMA at 4ppm and tert.butyl of tert.BuMA at about 1.4 ppm. Following are the estimated chemical shifts:

**Thermal analysis**

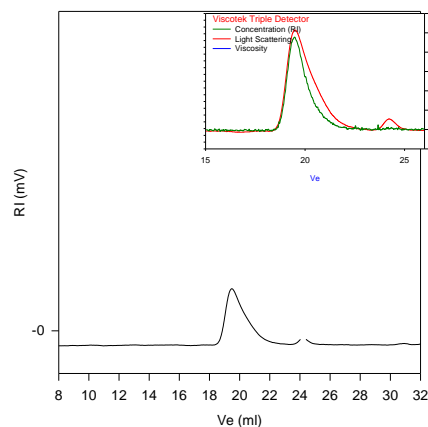
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T<sub>g</sub>).

**Solubility:**

The polymer is soluble in CHCl<sub>3</sub>, THF, DMF, toluene and precipitated out from methanol and water.

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

P5773B-nBuMAAtBuMAran



Size Exclusion Chromatography of Copolymer:

— M<sub>n</sub> = 530,000, M<sub>w</sub> = 689,000, M<sub>w</sub>/M<sub>n</sub> = 1.3  
Solution Viscosity in THF at 35 °C: 1.968 dl/g  
dn/dc in THF at 35 °C: 0.084 ml/g  
R<sub>g</sub>: 32.61 nm

**Thermogram for the sample:**