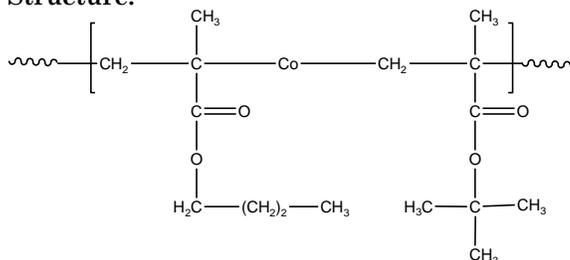


### Sample Name:

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

Sample #: P5772-n-BuMA:tBuMA ran

### Structure:



### Composition:

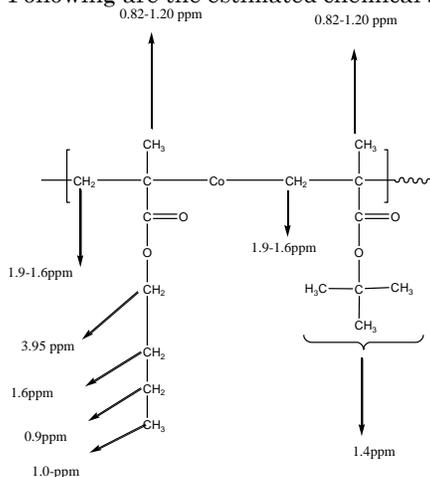
Mn × 10 <sup>3</sup> PnBuMA-co-tert.BuMA	PDI
130.0	3.5
T <sub>g</sub> of random polymer	31 °C
nBuMA:tBuMA	61:39
Syndio:hetero:iso	25:55:18

### 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 of 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:



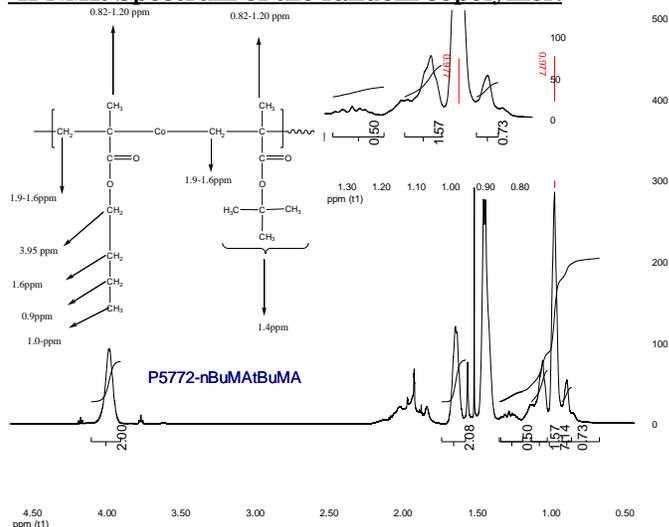
### Thermal analysis

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:

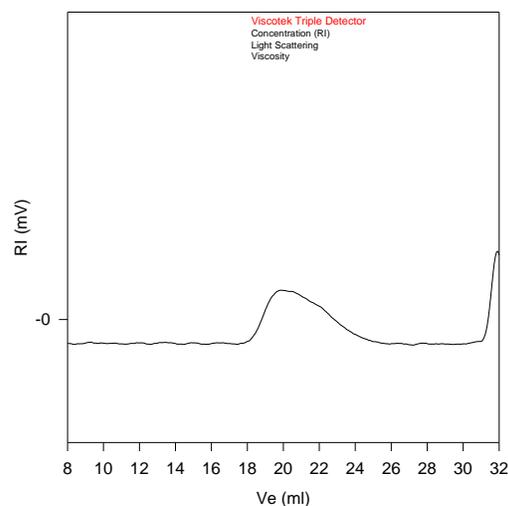
The polymer is soluble in CHCl<sub>3</sub>, THF, DMF, toluene and precipitated out from methanol and water.

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



### SEC of the random copolymer:

P5772-nBuMA:tBuMAran



Size Exclusion Chromatography of Copolymer:  
— M<sub>n</sub> = 130,000, M<sub>w</sub> = 455,000, M<sub>w</sub>/M<sub>n</sub> = 3.5

### Thermogram for the sample:

