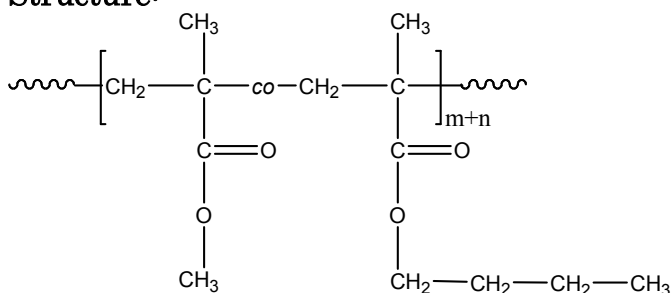


**Sample Name:**

Random Copolymer Poly(methyl methacrylate-co-n-butyl methacrylate)

**Sample #: P10600-MMA<sub>n</sub>BuMA<sub>r</sub>****Structure:****Composition:**

Mn x 10 <sup>3</sup> PMMA-co-PnBuMA	PDI
45.0	1.3
MMA:nBuMA molar ratio	60:40

**Synthesis Procedure:**

Random Copolymer Poly(methyl methacrylate-co-n-butyl methacrylate) is prepared by anionic polymerization

**Characterization:**

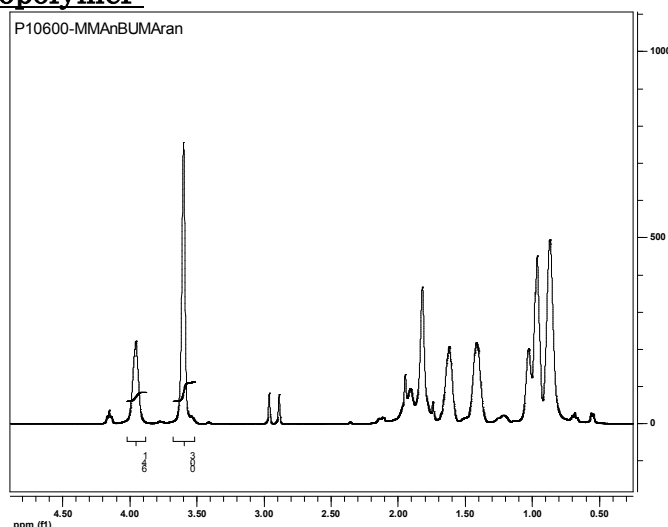
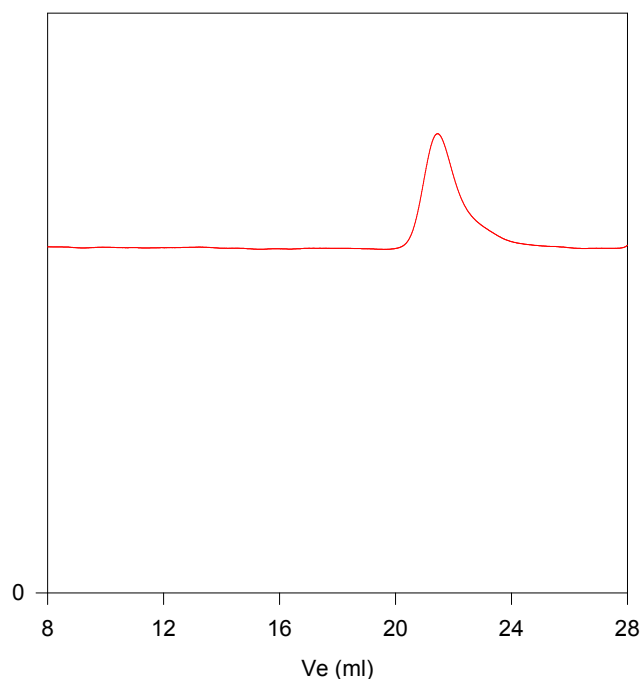
The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from <sup>1</sup>H-NMR spectroscopy by comparing the peak area of OCH<sub>3</sub> ester protons from MMA at 3.6ppm and OCH<sub>2</sub> protons of nBuMA at 4.0 ppm

**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, and precipitated out from methanol and hexane.

**<sup>1</sup>H-NMR Spectrum of the random copolymer:****SEC of the random copolymer:****P10600-MMA<sub>n</sub>BuMA<sub>r</sub>**

Size exclusion chromatograph of random copolymer:

M<sub>n</sub>=45,000, M<sub>w</sub>=58,500, M<sub>w</sub>/M<sub>n</sub>=1.3

MMA molar % by HNMR: 60%