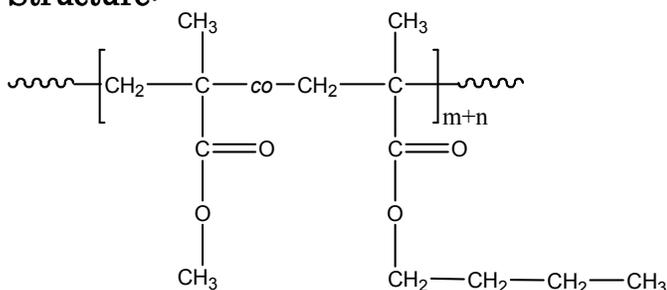


## Sample Name:

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

## Sample #: P13114-MMA<sub>n</sub>BuMA<sub>r</sub>

### Structure:



### Composition:

M <sub>n</sub> x 10 <sup>3</sup> PMMA-co-PnBuMA	PDI
20.0	1.15
T <sub>g</sub> of random polymer	109 °C
MMA:nBuMA molar ratio	87:13

### 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

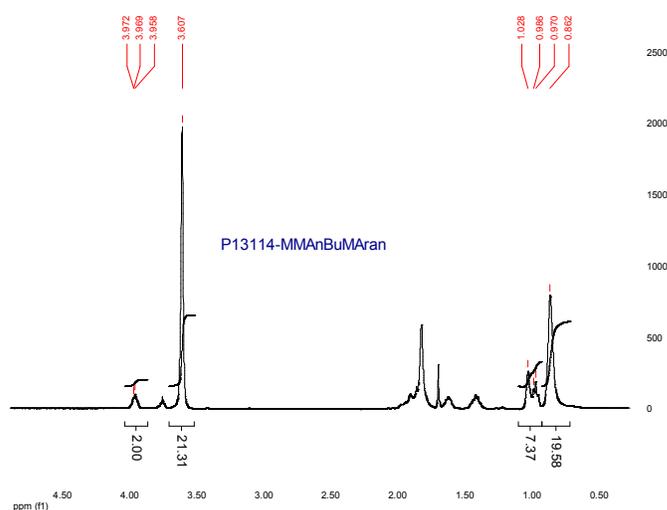
### Thermal analysis

Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter (DSC) 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:

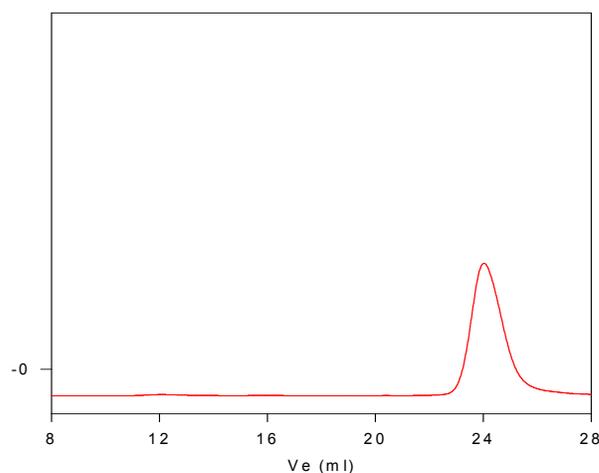
The polymer is soluble in CHCl<sub>3</sub>, THF, DMF, and precipitated out from methanol and hexane.

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



## SEC of the random copolymer:

P13114-MMA<sub>n</sub>BuMA<sub>r</sub>



Size exclusion chromatograph of random copolymer:

M<sub>n</sub>=20,000, M<sub>w</sub>=23000, M<sub>w</sub>/M<sub>n</sub>=1.15  
MMA molar % by HNMR: 87%

## Thermogram for the sample:

