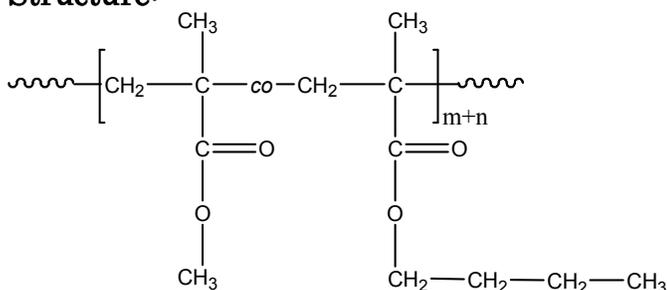


Sample Name:

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

Sample #: P13115-MMA_nBuMA_r

Structure:



Composition:

M _n x 10 ³ PMMA-co-PnBuMA	PDI
22.0	1.15
T _g of random polymer	116 °C
MMA:nBuMA molar ratio	92:8

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 ¹H-NMR spectroscopy by comparing the peak area of OCH₃ ester protons from MMA at 3.6ppm and OCH₂ protons of nBuMA at 4.0 ppm

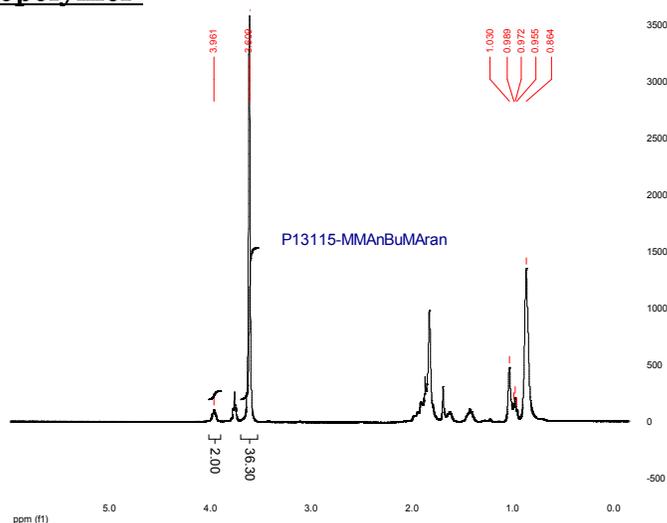
Thermal analysis

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_g).

Solubility:

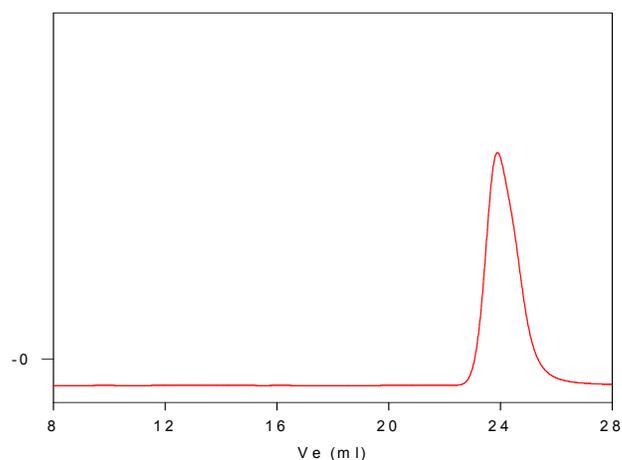
The polymer is soluble in CHCl₃, THF, DMF, and precipitated out from methanol and hexane.

¹H-NMR Spectrum of the random copolymer:



SEC of the random copolymer:

P13115-MMA_nBuMA_r



Size exclusion chromatograph of random copolymer:

M_n = 22,000, M_w = 25500, M_w/M_n = 1.15
MMA molar % by HNMR: 98%

Thermogram for the sample:

