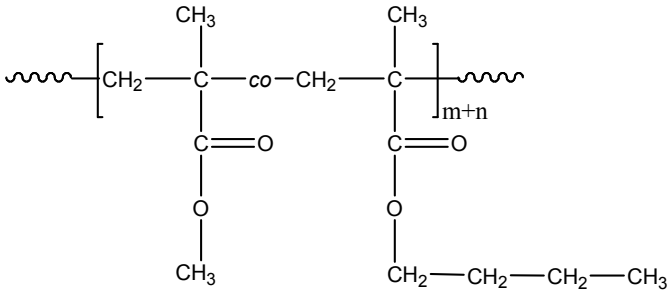
Sample Name:
Random Copolymer Poly(methyl methacrylate-co-n-butyl methacrylate)

Sample #: P10454-MMAnBuMAran

Structure:



Composition:

Mn x 10^3 PMMA-co-PnBuMA	PDI
31.5	1.07
MMA:nBuMA molar ratio	52:48

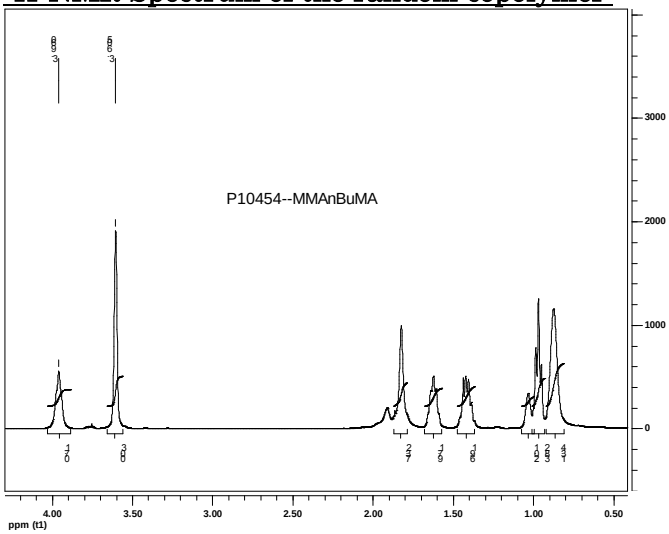
Synthesis Procedure:
Random Copolymer Poly(methyl methacrylate-co-n-buthyl methacrylate) is prepared by anionic polymerization.

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 ^{1}H-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 (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_g).

Solubility:
The polymer is soluble in $CHCl_3$, THF, DMF, and precipitated out from methanol and hexane.

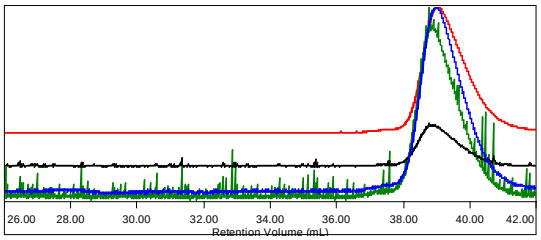
^{1}H-NMR Spectrum of the random copolymer:



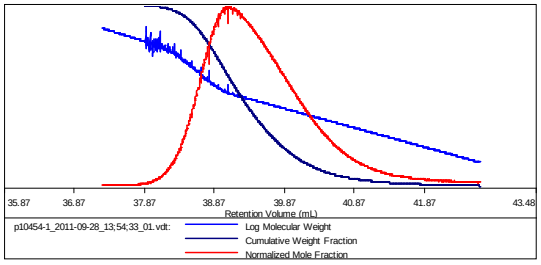
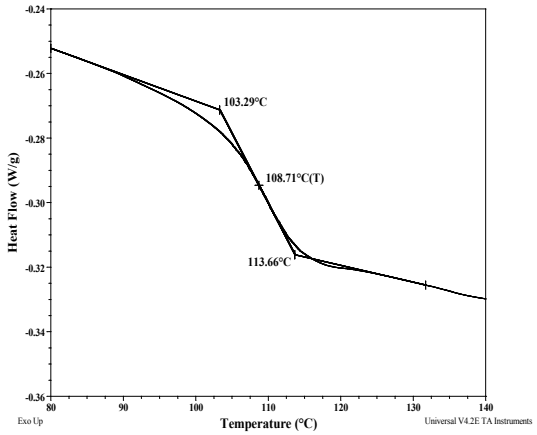
SEC of the random copolymer:

Sample ID: P10454-1

Concentration (mg/mL)	5.4066
Sample dn/dc (mL/g)	0.0800
Method File	PS80K-July-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn (Da)	Mw (Da)	Mp (Da)	Mw/Mn	IV (dL/g)
p10454-1_2011-09-28_13;54;33_01.vdt	31,261	33,355	33,734	1.067	0.2790



Thermogram for the sample: