Sample Name:

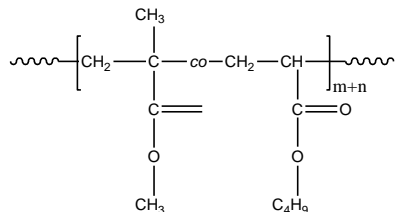 **Random Copolymer Poly(methyl methacrylate-co-n-butyl acrylate)**

Sample #: P1701-MMAnBuAran

Structure:

Composition:

PMMA (mol%) :

Mn x 10^3 PMMA-co-PnBA	PDI
126.7	1.26
T_g of random polymer	-13°C

Synthesis Procedure:

Random Copolymer Poly(styrene-co-methyl methacrylate) is prepared by either anionic or group transfer or radical polymerization of methyl methacrylate and n-butyl acrylate.
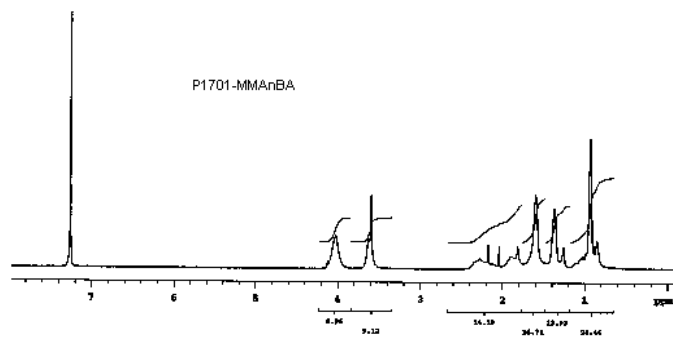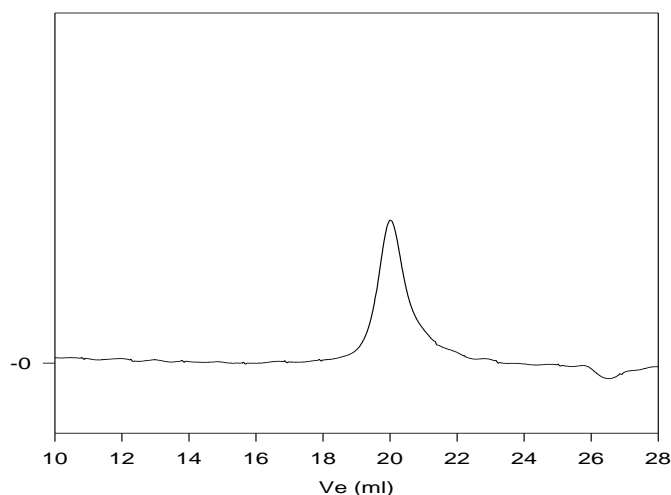
Characterization:

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.

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 $CHCl_3$, THF, DMF, toluene and precipitated out from methanol and water.

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

SEC of the random copolymer:

P1701-MMAnBA

Size exclusion chromatograph of poly(MMA-co-nBA):
M_w=159600, M_n=126700, M_p=171700, M_w/M_n=1.26

Thermogram for the sample: