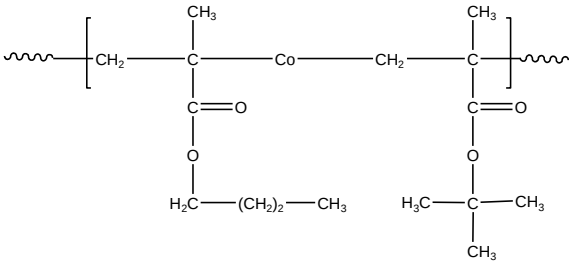
Sample Name:
Random Copolymer Poly(n-Butyl methacrylate-co-tert.-butyl methacrylate)
Sample #: P5784-n-BuMAtBuMA ran
Structure:

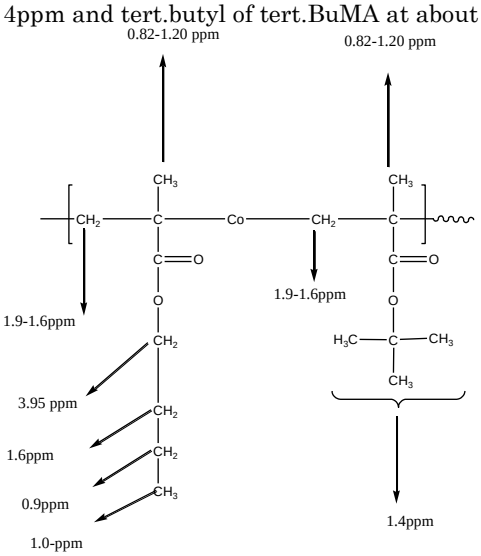


Composition:

Mn × 10^3 PnBuMA-co-tert.BuMA	PDI
540.0	1.3
T_g of random polymer	100 °C
nBuMA:tert.BuMA	45:55
Syndio:hetero:iso fraction	67:27:6

Synthesis Procedure:
Random Copolymer Poly(n-Butylmethacrylate-co-tert.butyl methacrylate) is prepared by anionic polymerization.

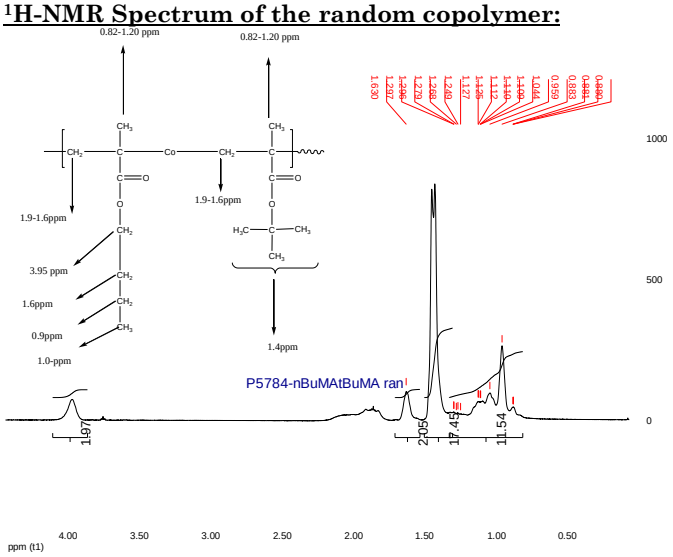
Characterization:
The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from ^{1}H-NMR spectroscopy by comparing the peak area of the protons of methylene (-CH2) of nBuMA at 4ppm and tert.butyl of tert.BuMA at about 1.4 ppm.



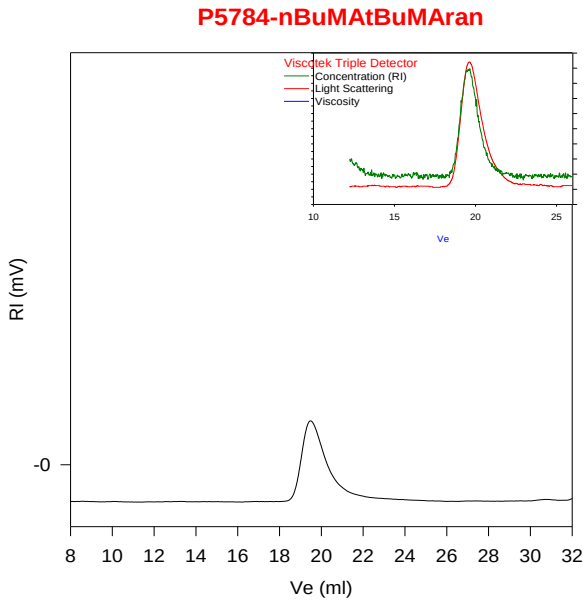
Thermal analysis
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 10°C/min.The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

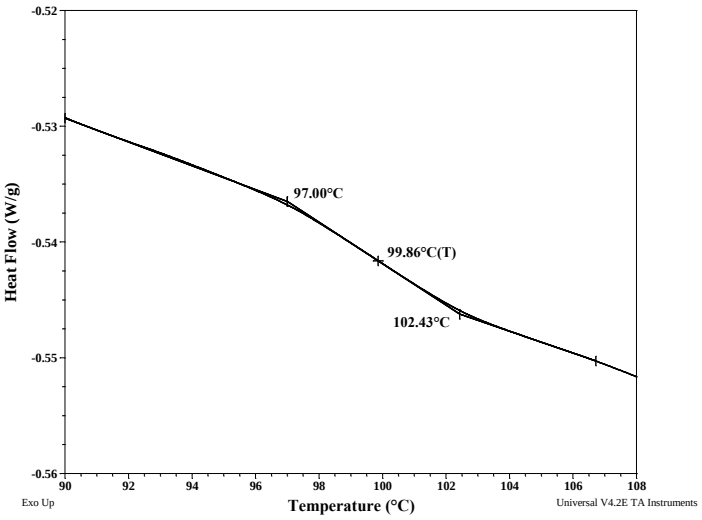
Solubility:
The polymer is soluble in $CHCl_3$, THF, DMF, toluene and precipitated out from methanol and water.

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



SEC of the random copolymer:



Size Exclusion Chromatography of Copolymer:
—— M_n = 540,000, M_w = 702,000, M_w/M_n = 1.30
Solution Viscosity in THF at 35 oC: 1.720dl/g
dn/dcin THF at 35 oC: 0.084 ml/g
Rgw: 32.20nm

Thermogram for the sample: