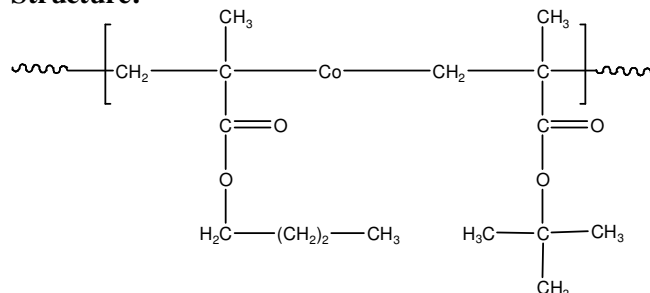


Sample Name:

Random Copolymer: Poly(n-Butyl Methacrylate-co-tert-Butyl Methacrylate)

Sample #: P18542-nBuMATBuMA ran

Structure:



Composition:

$M_n \times 10^3$ PnBuMA-co-tert.BuMA	PDI
32.5	3.4
T_g of random polymer	33 °C
nBuMA : tBuMA ratio	55 : 45
Syndio : hetero : iso fraction	40 : 38 : 22

Synthetic Procedure:

Poly(n-butylmethacrylate-co-tert.butyl methacrylate) random copolymer was prepared by anionic polymerization.

Solubility:

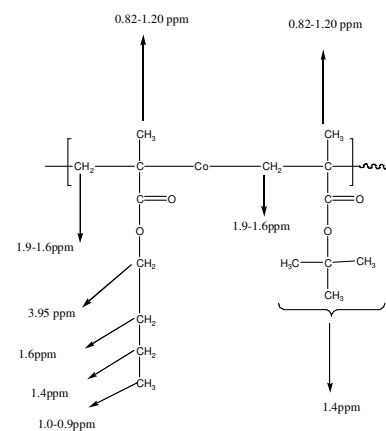
The polymer is soluble in CHCl_3 , THF, DMF, toluene; and it precipitates from methanol and water.

Thermal analysis

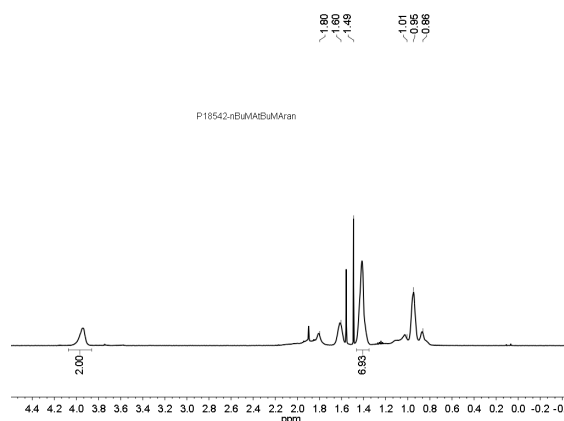
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

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 $^1\text{H-NMR}$ spectroscopy by comparing the peak area the aromatic protons of ppm with the protons of methylene (-CH₂) of nBuMA at 4ppm and tert.butyl of tert.BuMA at about 1.4 ppm. Following are the estimated chemical shifts:

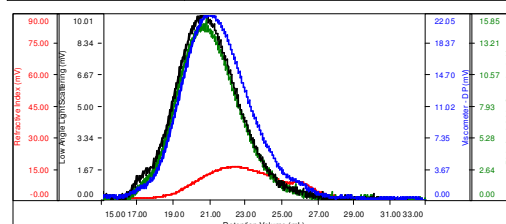


$^1\text{H-NMR}$ (500 MHz, CDCl_3):



SEC of P18542-nBuMATBuMAran:

Concentration (mg/mL)	2.5186
Sample divdc (mL/g)	0.0640
Method File	PS80K-Feb25-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	M_n	M_w	M_p	M_w/M_n	IV
P18542-nBuMATBuMA_ran_01.vdt	32,545	111,604	108,010	3.429	0.7809

DSC of the copolymer:

