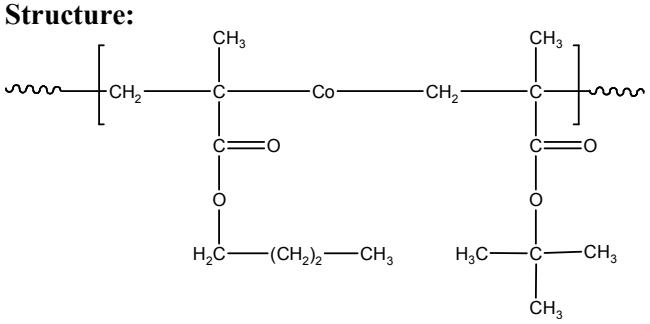
Sample Name:

Random Copolymer of Poly (n-Butyl Methacrylate–*co*–tert-Butyl Methacrylate)

Sample #: **P16117-nBuMAtBuMA ran**

Structure:



Composition:

Mn × 10^3 PnBuMA-co-tert.BuMA	PDI
80.0	1.46

nBuMA : tBuMA molar ratio	13 : 87

Synthetic Procedure:

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

Solubility:

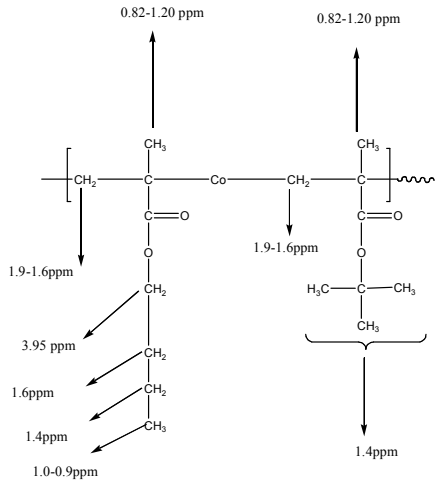
The polymer is soluble in $CHCl_3$, THF, DMF, toluene; and it precipitates from methanol and water.

Thermal analysis

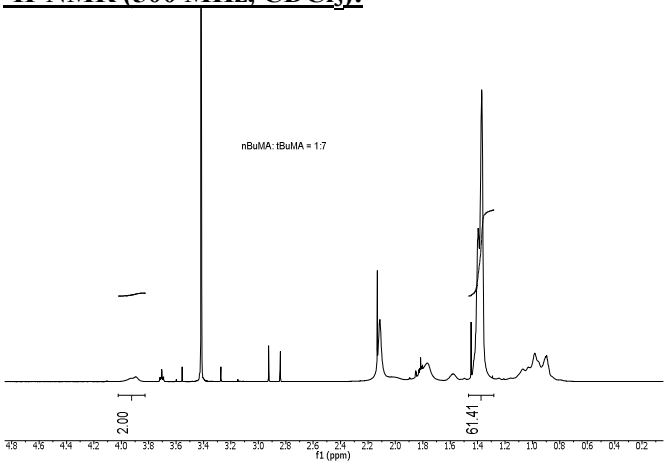
Thermal analysis of the samples was carried out on a TA Q100 differential scanning calorimeter at a heating rate of 20°C/min. The midpoint of the slope change of the heat flow plot of the second heating scan was considered as the glass transition temperature (T_g).

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}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:



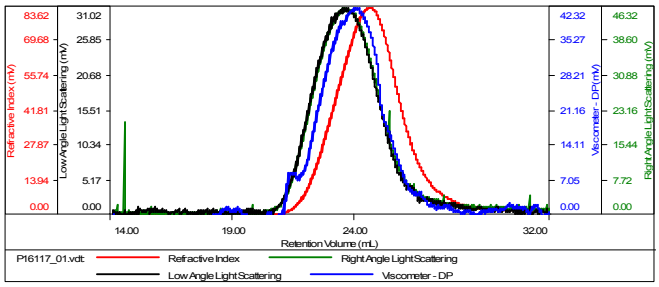
^{1}H-NMR (500 MHz, $CDCl_3$):



SEC of P16117-nBuMAtBuMAran:

Sample ID: P16117-nBuMAtBuMA ran

Concentration (mg/mL)	25.4690
Sample dn/dc (mL/g)	0.0700
Method File	PS80K-Oct2016-2-0000.vcm
Column Set	3x PL 1113-6300
Solvent	THF



Sample	Mn (Da)	Mw (Da)	Mw/Mn	IV (dL/g)	Mp (Da)
P16117_01.vdt	80,082	117,027	1.461	0.1564	86,414