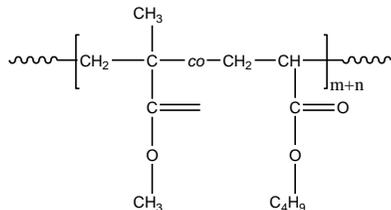


Sample Name:

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

Sample #: **P7224-MMAnBuAran**

Structure:



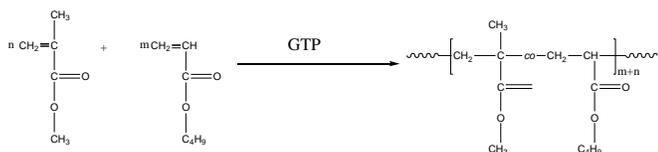
Composition:

PMMA 10 mole%

Mn x 10 ³ PMMA-co-PnBA (k)	PDI
12.0	2.3

Synthesis Procedure:

Random Copolymer Poly(styrene-co-methyl methacrylate) is prepared by group transfer radical polymerization of methyl methacrylate and n-butyl acrylate in the presence of 1-methoxy-1-(trimethylsilyloxy)-2-methyl-1-propene and tetrabutylammonium bi(benzoate). The scheme of the reaction is illustrated below:



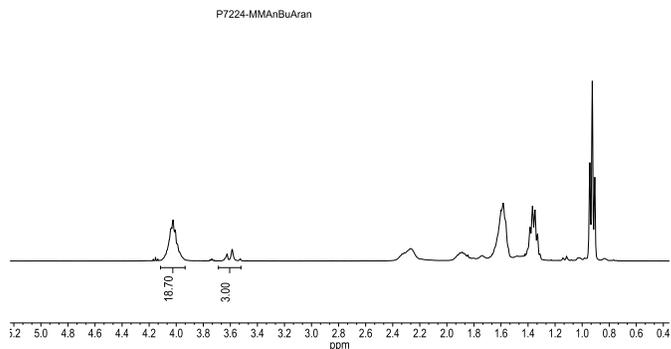
Characterization:

The polymer was analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the methyl peak area of MMA at 3.6 ppm with the methyl protons of methyl tBuA at about 0.95 ppm.

Solubility:

The polymer is soluble in CHCl₃, THF, DMF, toluene and precipitated out from methanol and water.

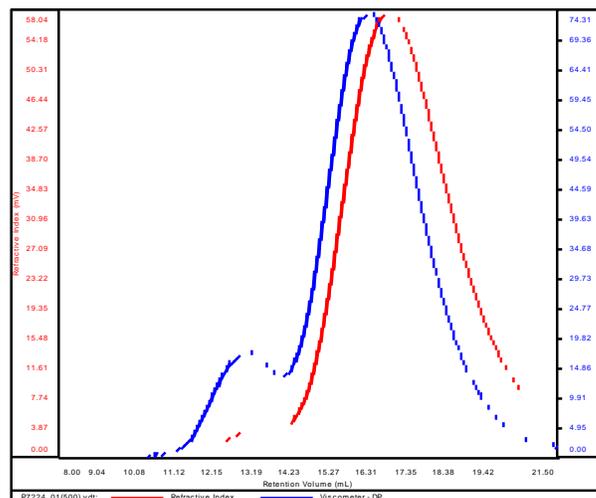
¹H-NMR Spectrum of the random copolymer:



SEC elugram of the random copolymer:

P7224-MMAnBuAran

Conc	23.3142
dn/dc	0.0650
Solvent	DMF w 0.023M LiBr
Flow Rate	0.7000
Method	PS80k-May2017-0000.vcm



Sample	Mn	Mw	Mp	Mw/Mn	IV
P7224_01(500).vdt	12,214	28,764	17,431	2.355	0.1197