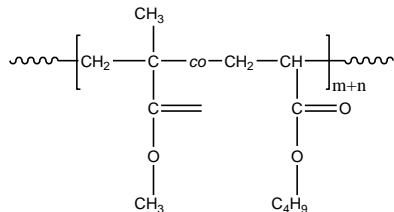


Sample Name:

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

Sample #: **P7224-MMAnBuAran**

Structure:



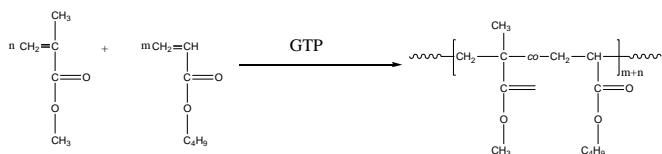
Composition:

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-(trimethylsiloxy)-2-methyl-1-propene and tetrabutylammonium bi(benzoate). The scheme of the reaction is illustrated below:



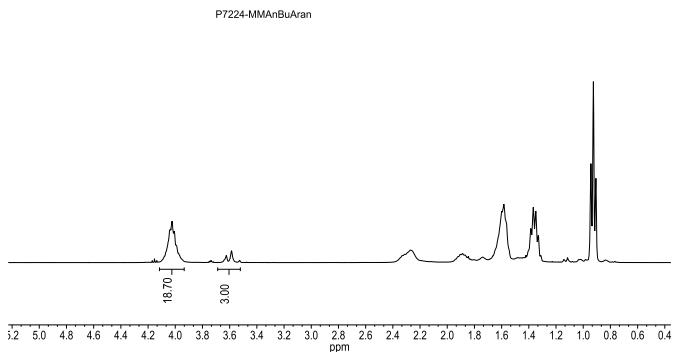
Characterization:

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.

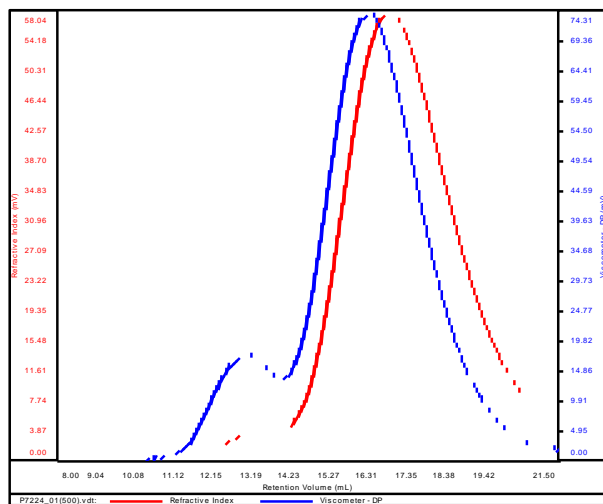
¹H-NMR Spectrum of the random copolymer:



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 |