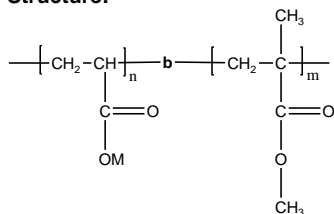


Sample Name: Poly(acrylic acid -b- methyl methacrylate) and its salt with Sodium, potassium.

Sample #: P8349- ANaMMA

Structure:

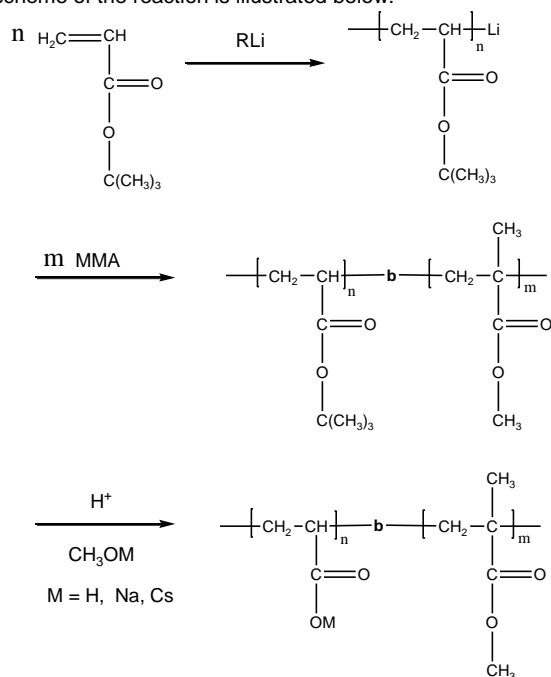


Composition:

Mn x 10 ³ PANA-b-PMMA	PDI
6.2-b-5.5	1.15

Synthesis Procedure:

Poly(acrylic acid-b-methyl methacrylate) is prepared by living anionic polymerization with sequence addition of t-butyl acrylate followed by methyl methacrylate and hydrolysis of the t-butyl group. The scheme of the reaction is illustrated below:



Characterization:

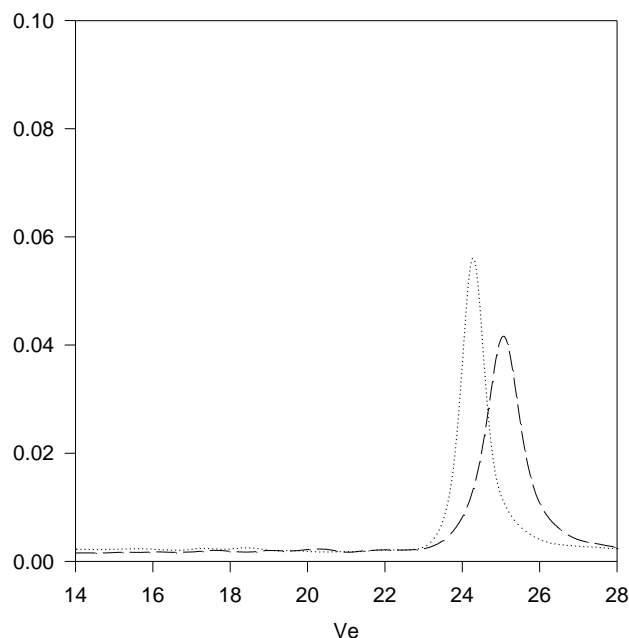
An aliquot of the anionic poly(t-butyl acrylic acid) block was terminated before addition of methyl methacrylate and analyzed by size exclusion chromatography (SEC) to obtain the molecular weight and polydispersity index (PDI). The final block copolymer composition was calculated from ¹H-NMR spectroscopy by comparing the peak area of the t-butyl methacrylate protons at 1.43 ppm with the peak area of the methyl methacrylate protons at 3.6 ppm. Copolymer PDI is determined by SEC.

Solubility:

Poly(acrylic acid-b-methyl methacrylate) is soluble in THF and its salt can be solubilized in DMF and in water depending on the compositions.

SEC of the block copolymer:

P8349-MMAAtBuA
Precursor for P8349-MMAAA



Size Exclusion Chromatography :

— Poly tert.butylacrylate, M_n = 8500 Mw: 10000 M_w/M_n = 1.18

..... Block Copolymer PtBuA(8500)-MMA(5500), M_w/M_n = 1.15

after Hydrolysis of tert.butyl ester: PAA-b-PMMA: 5000-b-5500

After Neutralization with NaOH: PANA:b-MMA : 6200-b-5500

